Impact of Trade Liberalization on Agriculture Sector in East Asia

Tha Pye Nyo

Abstract

Since the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), agricultural trade liberalization has been one of the most sensitive issues in all trade negotiations. East Asian FTA might make economic sense, giving trade and investment linkages in East Asia through the involvement in global manufacturing supply chains. However, the most protected sector in the region, the agriculture sector seems to be a burden of East Asian FTA. In this paper, the effect of trade liberalization on agriculture sector in East Asian region is analyzed by using GTAP model. The GTAP model is a multi-regional, computable general equilibrium model accompanied with the database of world economy. The experiment in this study is based on the results of the complete removal of ad valorem import tariffs and non-tariff barriers on all the commodities among East Asian economies, while each member retains its individual tariffs with non-members. This paper also analyzes the impact of trade liberalization policy on East Asian region for selected commodity groups—rice, fruits and vegetables, fish and fish products, oilseeds and sugar. Implementation of trade liberalization in East Asia is expected to lead to a structural change in regional food markets whereby food production would shift from highly protected regions to low-protected regions or non-protected regions. The results of the simulation experiments indicate that the impact on the agriculture sector in East Asian countries is so high. As agricultural products remain sensitive, detailed treatments on agricultural trade like prolonged timetable for liberalization are required for the establishment of East Asian FTA. Greater degree of flexibility should be allowed for a low cost transition process.

Key Words: FTA, trade liberalization, East Asia, GTAP model, Agricultural commodities

Introduction

Since the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), agricultural trade liberalization has become one of the most sensitive issues. Although trade in agricultural products comprised only 8.1% of world merchandise trade in 2005, tariffs on agricultural products remain significantly higher than those on manufactured products almost all over the world. The Uruguay Round agreement involved commitments for reducing trade barriers on agricultural products, improving market access, and establishing the disciplines and rules on various aspects of global agricultural trade. Therefore, Uruguay Round disciplines were introduced in the areas of market access, export subsidies and domestic support. Uruguay Round Agreement also introduced tariff rate quotas (TRQs) to create much additional market access where tariffs replaced non-tariff barriers. Removing the trade barriers to such trade presents a greater opportunity for future gains. The Doha negotiations showed that developing countries' interests had been placed at the center of a multilateral round of trade negotiations. Although Doha Round negotiations had been suspended due in large part to difficulties in reducing agricultural trade barriers in developed economies,

1 Tariff rate quotas (TRQs) is a quota for a volume of imports at a particular tariff rate.
liberalizing trade in agricultural products is likely to be a priority in the future.

The multilateral trade negotiations had already led many countries to enter into Free Trade Agreements (FTAs), both at the bilateral and regional levels. In recent years East Asia had seen the emergence of a number of economic partnership agreements including Free Trade Agreements (FTAs), which removed tariff and non-tariff barriers in international trade among the member countries. East Asian countries had been paying more attention to the concepts of establishing regional trade agreements like “ASEAN plus 3” as well as bilateral trade arrangements.

This paper is designed to evaluate the progress made in agricultural trade under East Asian FTA by using the GTAP model and to assess how the trade liberalization policies affect income, trade and output pattern at the regional level. This paper also analyzes the impact of trade liberalization policy of East Asian region for selected commodity groups that are of considerable economic importance to many countries in the East Asian region. The commodities selected are rice, sugar, fish, vegetables and fruits and oilseeds.

**Agricultural Trade and East Asia**

Agriculture is the most contentious issue in trade negotiations among East Asian countries. While manufacturing protection has declined in most countries in the region due to reforms of trade policies, most of East Asian countries still protect agriculture at a high level.

**Free Trade Agreement (FTA) and Agricultural Protection in East Asia**

Agricultural protection continues to be the most contentious issue in global trade negotiations. Until the 1990s industrial countries generally protected agriculture while developing countries generally taxed it (Krueger, Schiff, and Valdes 1992; World Bank 1986, Ataman Aksoy, M. 2005).

East Asian FTA might make economic sense, giving trade and investment linkages in East Asia, through the involvement in global manufacturing supply chains. However, as being the most protected sector in the region, the agriculture sector seems to be a burden of East Asian FTA.

Agriculture is Japan’s biggest constraint on moving towards FTAs. Agriculture accounts for only a small share of Japan’s GDP and its total employment, but remains heavily supported and protected from import competition. Japan was reluctant to engage in Free Trade Agreements until 2002. Japan signed its first Free Trade Agreement (FTA) with Singapore in November 2002. Japan-Mexico FTA was enacted on April 1 2005. However, Japan did not open much on agricultural trade liberalization in both Japan-Singapore FTA and Japan-Mexico FTA. Japan and Korea started a negotiation of free trade agreements between them in 2003. But the negotiations have not been concluded until now because of some specific concerns and problems facing Japan and Korea. One of the problems is that both Japan and Korea oppose to liberalization of trade in agricultural products.

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Japan and ASEAN started FTA negotiations in 2005. On the other hand, some members of ASEAN and Japan also started negotiations on bilateral FTAs. Although Japan recognizes FTAs as one of its trade policy options, it is unwilling to liberalize agricultural products due to its food security.

Although Korea’s trade and investment policies have allowed greater liberalization, including the further opening of its economy to international trade and foreign investment, some protectionist measures continue in agricultural commodities to shield domestic producers. Agriculture is the most distorted sector in Korea with high level of protection and low market orientation. Korea's net agricultural support exceeded the sector's GDP contribution (3.6% in 2003), and was among the highest in the OECD. Its average Producer Support Estimate (PSE)\(^3\) for agriculture was 60% in 2003, and was 74% for rice and 89% for oilseeds (World Trade Organization, WT/TPR/S/137, 18 August 2004).

Korea-Chile FTA was enacted in 2004 after several attempts to overcome opposition from the agriculture sector. It excluded many key agricultural products from liberalization. On May 16, 2006, ASEAN-Korea (FTA) was signed by Korea and nine of ASEAN members.\(^4\) But in FTA agreement, Korea was able to exempt 45 highly sensitive agricultural and marine products (rice, beef, poultry, garlic, onion, red pepper, most fruits, and certain frozen and live fish items etc) from liberalization.

In recent years, China has actively pushed for Free Trade Agreements (FTAs) in Asia and the world. Since 2001, it engaged in FTA negotiations with a number of countries. In November 2002, ASEAN and China signed the FTA Framework Agreement (ACFTA) to be in force by 2010 for ASEAN 6 and by 2015 for the newer ASEAN Member Countries. The initial ASEAN-China milestone was the Early Harvest Program (EHP), which has been in effect since January 1, 2004. An “Early-Harvest” program, in force since July 2005, has cut or eliminated about 10% of tariff lines, mainly in agricultural products. Therefore, China-ASEAN free trade agreement, due to an Early Harvest Program which covers a significant portion of agriculture products, is different from other FTAs which try to avoid discussing about agriculture. ASEAN countries, except for the Philippines, and China are eager to engage in more open agricultural trade.

The ASEAN Free Trade Area (AFTA) was signed in 1992. In ASEAN, protection of agricultural employment becomes an elemental concern because more than a third of most ASEAN countries' employment is in agriculture. AFTA initially excluded unprocessed agricultural products from trade liberalization. ASEAN countries have been implementing to achieve AFTA through step-by-step tariff reductions, phased transitions and other flexible arrangements, eventually aiming to agricultural liberalization. Although the agriculture sector in ASEAN raised major difficulties for liberalization of some agricultural products a decade ago, e.g., rice for Indonesia and the Philippines, however majority of agricultural commodities is now included in ASEAN regional liberalization.

Agricultural commodities play an important role in the trade of ASEAN countries. Thailand and

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\(^3\) Producer support estimate (PSE) is a measure of domestic support. It is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income.

\(^4\) Thailand was excluded from the accord owing to disagreements over agricultural goods.
Vietnam has recently become important exporters of rice and other tropical products. Malaysia has long been a major exporter of rubber and palm oil, and Indonesia is also an exporter of a variety of tropical agricultural commodities. For Indonesia, agricultural support is provided for four import commodities (rice, sugar, maize, and soybean) and two export commodities (crude palm oil and natural rubber). Cambodia, Laos and Myanmar, largely depend on the agriculture sector contribution to their GDP; in 2006, shares of Agriculture in GDP in Cambodia, Laos and Myanmar are 30.1 %, 44.8 % and 48.4 % respectively.

**The Role of Agricultural Trade in East Asia**

Tables (1) and table (2) illustrate the role of agricultural trade in the East Asian economy in terms of its contribution to total trade in 1990-2004. Japan and Korea had the lowest shares of agricultural and food exports while Vietnam and Thailand showed the highest shares; 20.57% and 12.24% respectively. The share of agricultural food exports in total exports in most of East Asian countries, especially China, the Philippines, and Thailand declined during the past two decades. This indicates structural changes in these countries during this period. Although the manufacturing had been substituted for agriculture in those countries, the agriculture sector still had considerable impact on East Asian economies.

On the import side, Japan and Brunei were the only countries with more than 8 percent of agricultural import shares in the region in 2005. Singapore, China and Thailand's agricultural imports shares were not significant in that year. The shares of agricultural and food import in total imports in most East Asian countries declined during the study period.

**Figure 1. Simple Average MFN applied tariff rates by Agricultural and non-agricultural Products in East Asia**

Sources: World Tariff Profiles 2006 ; *Agricultural goods according to the AOA (WTO Agreement on Agriculture) definition refer to HS chapters 1 to 24 (excluding fish and fish products) and a number of manufactured agricultural products.
### Table 1  Total Merchandise and Food Exports 1990-2005

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<tr>
<td>Brunei</td>
<td>14</td>
<td>2213</td>
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<td>0.3</td>
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<tr>
<td>Cambodia</td>
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<td>62092</td>
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<td>9924</td>
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<td>82390</td>
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<td>2291</td>
<td>25675</td>
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<td>29453</td>
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<tr>
<td>South Korea</td>
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<td>65016</td>
<td>3.10</td>
<td>2645</td>
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<tr>
<td>Thailand</td>
<td>6495</td>
<td>23069</td>
<td>28.15</td>
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<td>Vietnam</td>
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### Table 2  Total Merchandise and Food Imports 1990-2005

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<td>Import of food and live animals total imports</td>
<td>Import of food and live animals Food share in total imports</td>
</tr>
<tr>
<td>Brunei</td>
<td>155</td>
<td>1001</td>
<td>15.28</td>
<td>226</td>
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<tr>
<td>Cambodia</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>China</td>
<td>3458</td>
<td>53345</td>
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<td>4569</td>
<td>84725</td>
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<td>Indonesia</td>
<td>851</td>
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<td>29246</td>
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<tr>
<td>Vietnam</td>
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<td>624</td>
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</tbody>
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Sources: United Nations, UN Trade Statistics, Export (FOB) & Import (CIF) of food and live animals, SITC classification 0

### Sectoral Output and Protection in the Region in 2001

Agriculture and food sector is important in all countries in the region. Table (3) describes the base year, 2001 production data from the aggregation of countries and commodities.

Rice is an important commodity for most of the countries in the region. Vegetable and fish products mostly stand out in China and Japan rather than the other regions. China is the biggest...
producer of oilseeds in the region.

### Table (3) Value of sectoral output (2001 US $ Million)

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>Japan</th>
<th>Korea</th>
<th>Indonesia</th>
<th>Malaysia</th>
<th>Philippines</th>
<th>Vietnam</th>
<th>Thailand</th>
<th>Ro ASEAN</th>
<th>ROW</th>
</tr>
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<tbody>
<tr>
<td>Rice</td>
<td>44441</td>
<td>42147</td>
<td>14086</td>
<td>11359</td>
<td>384</td>
<td>6803</td>
<td>4717</td>
<td>7063</td>
<td>4001</td>
<td>93183</td>
</tr>
<tr>
<td>Vegetables</td>
<td>123231</td>
<td>23306</td>
<td>8847</td>
<td>5210</td>
<td>596</td>
<td>4343</td>
<td>988</td>
<td>3120</td>
<td>2196</td>
<td>263877</td>
</tr>
<tr>
<td>Fish</td>
<td>27852</td>
<td>17974</td>
<td>2425</td>
<td>3040</td>
<td>848</td>
<td>3101</td>
<td>864</td>
<td>2623</td>
<td>1662</td>
<td>83692</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>7889</td>
<td>316</td>
<td>178</td>
<td>1126</td>
<td>108</td>
<td>17</td>
<td>40</td>
<td>186</td>
<td>109</td>
<td>61449</td>
</tr>
<tr>
<td>Sugar</td>
<td>1530</td>
<td>12187</td>
<td>756</td>
<td>2972</td>
<td>321</td>
<td>1687</td>
<td>229</td>
<td>1739</td>
<td>898</td>
<td>142686</td>
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<tr>
<td>Other Food</td>
<td>283838</td>
<td>311901</td>
<td>46594</td>
<td>34939</td>
<td>11807</td>
<td>25261</td>
<td>5489</td>
<td>24321</td>
<td>15679</td>
<td>3142588</td>
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<tr>
<td>Manufactures</td>
<td>1744669</td>
<td>2164644</td>
<td>420655</td>
<td>124403</td>
<td>137085</td>
<td>52932</td>
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<td>Services</td>
<td>1312484</td>
<td>4759208</td>
<td>475945</td>
<td>106748</td>
<td>69026</td>
<td>58037</td>
<td>33080</td>
<td>100682</td>
<td>193762</td>
<td>28463556</td>
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</tbody>
</table>

The degree of protection determines the impact of trade liberalization. Therefore, the higher the initial import tariffs rate, the greater the impacts of trade liberalization on those commodities are. According to the Ad valorem tariff rates used in the GTAP data base for the East Asian region, the most heavily distorted commodity is rice and rice products for Japan and Korea. Japan also imposes high imported tax on sugar and Korea's import tariff on oilseeds is also high. Vegetables and fruits are heavily protected in Japan, Korea, Vietnam and Thailand, where their import tariff rates are more than 200%. Korea and Thailand impose high tariffs on fish and fish products.5

### Modeling Analysis on Trade Liberalization Reform in the East Asian region

In recent years, economic integration through free trade has progressed throughout the world. Most of the developed and developing countries have become members of some regional trade agreements. ASEAN established ASEAN Free Trade Area (AFTA) in 1992. Since the end of 1990s, China, Japan and Korea have been engaged with ASEAN to establish free trade area among them. In 2001, The East Asian Vision Group (EAVG) submitted a report which described its vision of an “East Asian Community,” and they recommended the formation of an East Asia Free Trade Area.

### Modeling Framework and Data

In this paper GTAP model is used to assess how the trade liberalization in East Asia affects income, trade, and output patterns in agricultural commodities at the regional level.

The GTAP model is based on a standard computable general equilibrium model with firms maximizing profit in competitive markets and maximizing consumers' well-being under budget constraint. It shows detailed inter-industry linkages for each of the represented economies. The

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5 GTAP data base
production system in GTAP model distinguishes five sectors by their intensities: land (agriculture sector only), natural resources (Extractive sector only), Capital, skill labor and unskilled labor. Data in this paper are from the Version 6 GTAP database, which is benchmarked to 2001.

The model is composed of 10 regions and economic activities aggregated into 8 sectors. The 10 regions are China, Japan, Korea, Indonesia, Malaysia, Philippines, Thailand, Vietnam, the rest of ASEAN (RoASEAN) and the Rest of the World (ROW). The sectoral decomposition is concentrated on rice and rice products, vegetables, fish products, oilseeds, sugar, other agricultural and food products, manufactured products and services. As the model used in this paper is a static model, exogenous variable growth rate such as labor and land growth rates, savings-driving investment and capital accumulation and exogenous productivity growth are not taken into consideration.

Design of Policy Experiments

Agricultural trade liberalization in the WTO involves three elements—market access, domestic support, and export subsidies. However various Free Trade Agreements give priority to market access issues. Export subsidies are rarely treated in FTAs and domestic support issue is almost neglected.

The experiment in this paper is entirely concerned with the complete removal of ad valorem import tariffs and non-tariff barriers among East Asian economies, while each member retains its individual tariffs with non-members. Domestic support and export subsidies are assumed to be the same as in the base year. The simulation conducted in this paper utilizes the GTAP 6 database whose base year is set in 2001. The simulation reflects changes from their 2001 levels, the base year in this model.

Modeling Results on East Asian FTA

Integration and economy-wide trade liberalization promote economic growth, reduces poverty, and increase growth rates of income and output. Open trade allows resource allocation to be consistent with comparative advantage, thereby increasing productivity. Reducing barriers like high tariffs on imports of agricultural and food products may give consumers the benefit of low food prices. To realize the benefits of trade liberalization, the integrated countries are required to consider the adverse effects of adjustment on some groups.

The Effect of Trade Liberalization on East Asian Economies

Removing tariffs on all commodities in East Asia, the region would be able to increase their GDP; Thailand by 3.74%, Japan by 1.32%, Korea by 1.39%, Indonesia by 1.08%, and China by 0.39%. In terms of national welfare, all of the East Asian region would gain from East Asian FTA.
Japan would have the largest gain in the region with $27050.02 million of economic welfare.\footnote{GTAP simulation results and Equivalent variation is used as the indicator of Welfare.}

With the trade distorting instruments of East Asian countries removed, the percentage changes in the value of regional agricultural exports and imports would be much larger than that of manufacture and services sector.\footnote{GTAP simulation results} Implementation of trade liberalization in East Asia is expected to lead to a structural change in the regional food markets whereby food production would shift from highly protected regions to low-protected regions or non-protected regions.

**Commodities Studies**

This paper analyzes the impact of trade liberalization policy on East Asian region for selected commodity groups. The commodity groups are selected to provide the range of trade reforms and to study the diversity of gainer and losers.

**Rice**

Although Rice is the staple food of more than half of the world's population, More than 90% of production and consumption occur in Asia. Rice is characterized by high protectionism in both developed and developing countries. Rice trade is manipulated to achieve national policy objectives of domestic food security and support for producer prices and incomes in major rice-producing and-consuming countries. Domestic price stabilization policies have also been pursued by restricting imports. Despite the importance of rice as a basic staple, global trade accounts for only 6.5 percent of consumption. This means that most countries are self sufficient in rice and face increased price volatility in times of production shortfalls (Wailes, 2005). Thus, the combination of high levels of domestic protection, geographic concentration, erratic weather, inelastic price responses in production and end-use markets, and relatively thinly traded volumes results in volatile prices and trade (Wailes 2002,2005).

China is the world's biggest producer and consumer of rice. Most of East Asian countries, Japan, Korea, Thailand, Vietnam, Myanmar and Philippines are also important in production and consumption of rice. Thus, trade policies that affect rice price, production and trade have a large impact on these countries.

Rice is highly protected by the governments. State trading enterprises are dominant in the rice trade in China, Indonesia, Japan, Korea and Vietnam. But in Thailand, rice trade is managed by an extremely competitive group of export companies. Thailand has been the largest rice exporter not only in the East Asian region but also in the world for the past several decades. In 2005, Thailand rice’s export share was 25.064 % of world rice exports. Thailand’s rice policy is the paddy mortgage scheme, a loan program operated under the Bank of Agriculture and Agricultural Cooperative (BAAC)\footnote{See detail in Eric J. Wailes (2005).}. Vietnam is the fifth-largest of rice producing and consuming countries.

Vietnam’s rice economy recovered after the Doi Moi reform program in late 1986. Vietnam has
been the world’s second-largest rice exporter since the mid-1990s. Rice exports and prices are under
the control of the Ministry of Trade and Vietnam’s Food Association (Vinafood) (Young, Wailes,
Cramer, and TriKhiem 2002). China’s shares of rice exports and imports are 2.4 % and 2.1 %
respectively. With the objective of food grain security, rice has been managed through procurement
supports prices to ensure stable supplies in China. Now, in accord with the government's policy to
emphasize the quality of rice, its producers are adopting improved quality varieties.

Major rice importing countries in the East Asian region are Philippines, Indonesia, Japan,
Malaysia and Korea. The pricing and marketing of rice in Japan are subject to government
intervention. As being the traditional staple food, rice dominates the government’s agricultural policy
( Fukuka, Dyck, and Stout 2003). In Korea, agriculture and agricultural policies are centered on rice,
and the grain is often considered a political commodity, since it is a staple food and about 80 percent
of all farms are put under paddy. In Indonesia, rice has always been the main focus of policy on
agriculture and food security. Price stability has been pursued by intervening in the market by
BULOG, the government-controlled Food Logistics Agency, to defend a nationwide ceiling price for
consumers and floor price for producers.

According to GTAP data base, Japan and Korea protected rice by imposing high tariff rates. Estimates of the impact of the elimination of import tariffs for all commodities in the East Asian
region using GTAP model, show a significant expansion of rice trade and large price adjustments. With trade liberalization scenario among East Asian region, aggregate rice output of Japan and
Korea would decline significantly—85.38% in Japan and 42.45% in South Korea. Philippines and
Indonesia's rice output would also be on the decrease due to trade reforms in East Asia. However,
China's rice output would increase by 20.83%. However, it should also be taken into consideration
that depending on type, quality, degree of processing and degree of milling, the international rice
trade is differentiated.

Among the East Asian importers, Japan and Korea, the most protectionist countries in rice trade,
would have large impact on their rice trade. Rice market prices in Japan and Korea would fall by
25.4 % and 45.8 % respectively. The value of Japan’s rice import would increase. Japan would
purchase 58 % of its rice imports from China, 21% from Korea and 21 % from Thailand. The value
of Korea's rice import would also increase from $ 34.8 million to $ 2439 million and 87 % of rice
imports would be from China and 9% of rice imports from Thailand. The Rest of the world would
lose their rice market in Japan and Korea due to the impact of trade liberalization in East Asia. The
Philippines, one of the largest rice importers, would purchase 78 % of its total rice imports from
Vietnam. The market price for rice in the Philippines would decrease by 1.58 %. However the
market prices would increase by 1.26 % in Indonesia and by 2.96 % in Malaysia.

On the export side, not only major exporting countries like Thailand, Vietnam and China, but
also Japan and Korea would increase their rice export. Global merchandise export price of rice
would decrease by 2.4 % due to East Asian FTA. Thailand, the world’s dominant rice-exporting
country, would increase its rice exports. However, rice's market price of Thailand, according to the
simulation result, would increase by 17.21 %. China would expand its rice export dramatically about
1051%. While China’s rice producers would gain $ 1346.9 million, those from Japan and Korea
would lose $ 1984.9 million and $ 2050 million as a result of trade liberalization reform in East Asian region. Thailand, a major rice exporting country, would also gain a producer surplus of about $ 706.9 million.

*Vegetables and Fruits*

International trade in vegetables and fruits has been among the most dynamic areas of international agricultural trade. Most countries in the East Asian region often have a comparative advantage in the production of labor-intensive agricultural commodities such as fruits and vegetables due to a substantial supply of low-cost labor.

In Asia, the geographical distribution of trade is likely to change as China becomes a larger importer and exporter and enhances the quality of its produce (Wu Huang, 2004). China is currently the world's largest producer of fruits and vegetables, with a share of 34% of world production. (Diop and Jaffee, 2005). At the same time, growing internal demand in China may result in rising fruit and vegetable imports. Japan plays an important role in the import of vegetable and fruits in international market, because its cost of domestic production is relatively high. Therefore, it becomes the largest importer of vegetables and fruits in the East Asian region while Philippines, Vietnam and Thailand are important exporters in the region.

As a result of the impact of the elimination of import tariffs using GTAP model, trade-weighted average global merchandise export prices would fall by 0.26 % and trade-weighted import price would also drop by 0.21%. China, the largest exporter in the region, would largely expand its exports to Korea, which imposed high tariff rate against China. China may also expand its vegetable and fruit export to other East Asian countries, but its imports from the rest of the World may decline from $ 1021.6 million to $ 924.1 million. While China's vegetable and fruit exports grow, its import of vegetables and fruits may rise due to the growing domestic demand.

Vegetable and fruit producers in China may gain significantly (US$ 2646.6 million) as a result of trade liberalization in the region. Japan, the largest importer in the region, may increase its imports from China, Korea, Philippines and the rest of ASEAN countries. Although Japan's vegetable and fruit imports from the rest of the world would slightly decrease, Japanese vegetable and fruit producers would lose by about $ 739 million and market price would decrease by about 2.84 %.

Removing tariff barriers among East Asian countries, Korea's imports from the rest of the world would decline from $ 129.1 million to $ 17 million. Korean vegetables and fruit market price would drop by about 15 % and producer would lose welfare by about $ 1097.6 million. The trade liberalization in East Asian countries would lead to increased market prices in the region except Japan and Korea. The vegetable and fruit producers from ASEAN countries would gain from East Asian FTA.
**Fish and Fish product**

Fish and fish products provide important trade opportunities in many coastal countries. Trade in fish products of the region is nearly 40% of total fish trade in the international market.

China, Vietnam, Indonesia and Thailand were leading fish exporters in the region. China was the second largest exporter of fish in the world in 2005\(^9\) and its export share to the world is 7.5%. Vietnam’s share of fish and fish product exports was 5.8% of total Vietnam exports. Japan, the largest importer in the East Asian region, had 18% share of world fish import. South Korea, Hong Kong and Thailand were also important importers in the East Asian region. However, Indonesia and Myanmar rarely imported fish and their net trade on fish is over 90%.

Removing tariffs in the East Asian region, world fish exports and imports would increase by 14% and 13% respectively, and market prices of the East Asian countries except Vietnam might increase, especially in China, 4.55%. However, the market price of Vietnam would decrease by 3.51%. Vietnam and Thailand may face a decline of 3.71% and 2.37% in fish output respectively, and their fish producers will lose. The rest of East Asian countries would gain producer surplus due to East Asian FTA. China’s producers would gain most in the region, about $875.1 million.

**Sugar**

Sugar is also an important commodity in the world agricultural market. Like other agricultural commodities, sugar trade is characterized by heavy government intervention, large price fluctuation, widespread production in many parts of the world, and a growing market for sugar substitutes.

Sugar policies, for instance, government intervention in developed countries, induced significant loss on low-income sugar exporting countries as their exporters experienced lower world prices and possible lower production and reduction in employment opportunities (Devadoss and Kropf, 1996). About 80 percent of world production and 60 percent of world trade relies on production subsidies, export subsidies, or preferential access to protected markets. The European Union, Japan, and the United States account for 20 percent of world production; their average producer prices are more than double the world market (Mitchell, Donal O. 2005).

Thailand was the largest exporter in the East Asian region with 3.6% of world sugar exports, followed by China and South Korea in the region. Japan was an important country in the world sugar market because of its traditionally high demand for imported sugar. Japan, Indonesia and South Korea were major importers of sugar in the East Asian region with about 2% of world sugar imports. East Asian countries except Thailand faced trade deficit on sugar commodity in the international market. However, Thailand gained Net Trade\(^10\) about 91.2% from sugar trade in 2005.

Japan’s trade flow may have greater effect due to trade liberalization in East Asia. Japan’s total sugar imports would increase from $461.5 million to $1581.9 million. Thailand sugar exports to

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\(^9\) The largest exporter of fish products in the world in 2005 is Norway whose share of fish export to world is 8.1%.

\(^10\) Net Trade = (export-Import)/(export + Import) × 100
Japan may expand considerably from $148.8 million to $1545 million. East Asian FTA would make a diversion effect on Japan’s sugar imports from the rest of the world, which would decline from $299.8 million to $2.5 million.

As a major sugar exporting country, Thailand would stand to gain from East Asian trade liberalization, since its product can compete in the world market. China would also expand its sugar exports to Japan, Korea, Indonesia and Philippines. East Asian FTA would lead to a 17.48% decrease in the market price of Japan. Japanese sugar producers would lose by about $35.7 million. On the other hand, Thailand, the largest sugar exporter in the region, would increase its market price by 12.64% and would gain $226 million of producer surplus. Thailand would also gain trade surplus of $1427.88 million on sugar trade. The market price of East Asian countries except Japan would rise as a result of trade liberalization in East Asia.

Oilseeds

In agriculture, the oilseeds and oilseed products sector is one of the commodity sectors which is influenced by government intervention. China was both the largest exporter and importer in the East Asian region in 2005 with 24.1% import share and 4.5% export share of the world oilseed market. China was the world's fourth-largest producer of soybeans. Yet, rapid growth of China's economy has spurred food consumption, turning the country into the world's leading soybean importer. Changes in China's agricultural and trade policies have greatly influenced world oilseed markets. China's WTO accession will further reduce import tariffs and quantitative restrictions to its oilseed market. Japan was also a major oilseed importer with 10.7% share of world imports. Japan had 93.6% trade deficit on oilseed trade while Cambodia had 95.5% trade surplus in that commodity. Brunei was the only country that imported oilseeds without exporting the commodity.

Trade reforms in East Asian region may have a significant impact on Korean oilseed imports. Korea’s imports would increase and almost all oilseed import of Korea would come from China. The rest of the world would lose its oilseed export market in Korea. However, Japan’s oilseed imports from China would decline and its imports from the rest of the world would increase. The simulation results suggest that Vietnam would expand its oilseed export to Thailand. China's total oilseed export would increase from $476.9 million to $1121.1 million.

As a result of East Asian trade liberalization reform, the world oilseed export price and import price would be cut off by about 3%. The market prices of Japan, and Korea, major importing countries, would also decrease by 2.44%, and 39.37% respectively, and those of Vietnam, China, Indonesia, Malaysia, Thailand and the rest of the ASEAN would increase. The oilseed output of Korea would drop by about 76.79% but that of Vietnam would grow by about 42.83%. China's producers would gain by about $320.2 million and the producers of Japan, Korea, Thailand and the rest of the world would lose from East Asian FTA.

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11 see in http://www.ers.usda.gov/Briefing/SoybeansOilcrops/trade.htm
Conclusion

The prices and volume of agricultural commodities trade tend to be unstable due to a combination of a high degree of protection, geographic concentration, market segmentation, inelastic supply response to price and inelastic demand response to price and income. The impact of removing tariff on agricultural price and volume traded is high.

Implementation of trade liberalization in East Asia is expected to lead to a structural change in regional food markets whereby food production would shift from highly protected regions to low-protected regions or non-protected regions. However, the effect of trade liberalization on highly differentiated agricultural products like rice in Japan may be different from the simulation results based on static GTAP model.

This paper tries to analyze the impact of removing tariffs on agricultural commodities in the East Asian region. This study emphasizes the five agricultural and food commodities that are of considerable economic importance to many countries of the East Asian countries—rice, vegetables and fruits, fish products, sugar and oilseeds.

Rice, a staple food in the region, is highly protected by the government. Trade liberalization reforms in the East Asian region largely affect rice exports and imports in the region. Fruits and vegetables are important commodities in most of the East Asian region. The simulation results show that the trade flow of Korea would change considerably due to removing tariffs in the region. The market price of fruits and vegetables would decline in Korea and Japan while other East Asian countries would have higher market prices.

Fish and fish products are one of the most traded food commodities in the world. When tariff is removed in the region, although the fish and fish products trade of East Asian countries expands, the trade flow from rest of the world would not change considerably. Sugar market is also one of the most distorted markets in the world. Trade reforms in the East Asian region would result in contraction of output in sugar importing countries. Market price for Japan, which imposed the highest tariff on that commodity in the region, would decline while the market price for other member countries would rise. As a major sugar exporting country, Thailand stands to gain from East Asian trade liberalization.

China is the largest exporter and importer of oilseeds in the East Asian region. As a result of trade liberalization experiment in East Asian countries, there is also a great impact on Korea by diverting its oilseed import direction from rest of the world to China. The market prices of oilseed in major importing countries like Japan, Korea and Philippines would decrease due to East Asia FTA.

The results of the simulation experiments indicate that the impact on the agriculture sector in the East Asian countries is so large. As agricultural products remain sensitive, detailed treatments on agricultural trade like prolonged timetable for liberalization are required for the establishment of East Asian FTA. Greater degree of flexibility should be allowed for a low cost transition process. It should also be noted that the developing countries in East Asia may need investment that encourages commodity-link transfer. An open food and agricultural system would complement the restructuring of the Asian economies by removing the possibility of future distortions. The process of trade
liberalization will increase the competitiveness of the agriculture sectors in the importing countries.

References


UNCTAD/WTO, International Trade Center, Washington DC,