APEC Study Centre
The Chinese University of Hong Kong

Fruit Trade

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Teaching Objectives

The trade war between China and the United States has marked a new era of competition. In response to America's financial sanctions, China has launched a series of tariffs to offset the impacts, among which include fruit taxes. However, trade policy and tariffs exist long before the trade battle. This teaching case is to help students, through learning international fruit trade, recognize trade policies and cultivate their economic awareness of the world.

Learning Goals

We established 5 general learning goals for students to accomplish through learning this case.

Background of Fruit Trade

Economic Concepts of Fruit Trade

Case Studies of Fruit Trade

Macroeconomic Performance of Fruit Trade

Policy Analysis and Evaluations

This teaching case provides holistic contents and materials for interactive teaching and active learning. Teachers can find useful materials when designing assignments and projects for students

1. Clear teaching theme & learning goal are stated for each section.
2. Additional notes on relevant concepts are provided.
3. Additional multi-media learning support is also provided for different topics.
4. Suggested assignments and projects are provided.

I Introduction

I-I Background of Fruit Trade in Asia

International trade in fruits and vegetables has expanded more rapidly than trade in other agricultural commodities. Three regions – The European Union (EU), the North American Free Trade Agreement (NAFTA) area and Asia are the major destinations for exports and source of supply[1]. Asia is set to become an increasingly important engine of growth in the future.

Asia is by far the world's leading fruit production continent with a share of 66%[2]. China and India are the top two fruit-producing countries, which respectively contributed to 32% and 11% of world's production in 2017[3]. Asia's fresh fruit exports has reached to more than 150 countries across continents.

Affluent Asian markets that are land-scarce and have high labor costs, like Japan and South Korea, are still the main Asian destinations for global exports of fresh fruits[4]. Nonetheless, Asia's diverse and rapidly developing market becomes more and more important to the world's exporters. Asia Fruit Logistica, the largest continental annual trade show for fruit in Asia, has attracted over 13000 high quality buyers and trade visitors from 76 countries in 2017[5].

[1] United States Department of Agriculture – Global Trade Patterns in Fruits and Vegetables
[2] Euromonitor, 2015
[3] Rabobank – World Fruit Map 2018
[4] Food and Agricultural Organization – Handling and Preservation of Fruits and Vegetables by Combined Methods for Rural Areas
[5] Asia Fruit Logistica – Asia's fresh produce trading hub

To find out more about:

Global Trade Patterns in Fruits and Vegetables Report

The impact of income growth in fruit trade is more pronounced in developing countries in Asia. Take China as an example. The emerging middle class and ongoing urbanization increase the disposable income of Chinese people. The longstanding one child policy[6] encourages parents to invest more in their children. As a result, they are highly willing to pay for the best quality products for the next generation.

Stronger demand coupled with higher price acceptance means that many producers eye on Asia's market rather than Europe's. Thus, global fruit exporters have become less interested in Europe – with its trend of declining consumption – and move towards Asian market opportunities[7].

However, intra-regional trade has maintained a dominant position in Asia even though its position has been challenged by foreign competitors. The accomplishment of Regional Comprehensive Economic Partnership (RCEP) has allowed the elimination of tariffs on regional exporters while tensions between opening markets for transnational agribusiness companies and protecting domestic producers have led to a widespread use of tariff and quotas in extra-regional fruit trade.

While intra-regional trade is responsible to most tropical fruit exports and imports in Asia Pacific, the improved market access and development in controlled-atmosphere storage and cold-chain facilities long-distance transport, and thus Latin American economics has begun to participate in the market.

Australia, New Zealand, and Latin American countries like Chile and Peru have the geographical advantage of a favourable climate. Their position in southern hemisphere enables them to sell seasonal fruits to the northern hemisphere. It gives an edge for the exporters entering the Asia's market[8].

[6] New two-child policy has been implemented, but the impact of old policy remains significant
[7] RaboResearch – World Fruit Map 2018: Global Trade Still Fruitful
[8] Global Fruit sector mapped

I-II Nature of Fruit Market

Perishable Goods

In an economic sense, a perishable good can only be consumed in the current period if purchase and have to be bought again for future consumption. The perishable nature of fruit forces consumers to purchase on a regular basis such that:

1. The market is more sensitive to temporary supply stock. Cultivation is prone to adverse weather effects and it will bring considerable disruption to production and high price fluctuation in current period due to imperfect information.
2. Unlike durable goods, price elasticity of demand for non- durable goods is relatively inelastic because people can choose to postpone the purchase of durable goods, e.g. a car, but less likely they will choose not to buy fruit.
3. Technological advancement in transportation and storage facilities is necessary for international fruit trade.

Seasonality

Naturally, Fruit should be grown in their growing season. Consumers are less preferred to. counter-seasonal fruit that are grown domestically.

1. It enhances the imports of fruits and thus international trade to provide off-seasonal fruits to meet the domestic demand.
2. Countries in southern hemisphere are benefited as the top three importers are located in northern hemisphere.

I-III Comparative Advantage and its Limitation

The theory of comparative advantage suggests that trade should happen between economies with large differences in opportunity costs of production. It enhances international trade between developed countries and developing countries and urges each country to specialize in areas where it has the highest level of competitiveness. It explains why the production of fruit usually takes place in developing countries. It is mutually beneficial for developed countries to trade low-cost, high-quality agricultural products from countries with low labour and rental cost, right climate and soil conditions. The theory of comparative advantage becomes the rationale of free trade agreements. Trade protectionism hurts a country's competitiveness in the long term by protecting unsuccessful industries rather than providing optimal conditions to competitive industry.

However, tariffs between countries are commonly adopted and comparative advantage of a particular fruit-producing country facing high tariff will be diminished.

Trade barriers affect the comparative advantage of global exporters with respect to domestic and regional fruit market in Asia. As a result, any unilateral modification of country's tariff structure in regard to its major trading partners could have huge impacts on their exports.

Conversely, a hemisphere-wide trade pact might not provide a comparative advantage within the pact, but it can almost certainly provide a competitive advantage over other market suppliers. Removal of tariff and non-tariff barriers will therefore bring significant benefit the export sectors of the members in free trade agreement.

With the continuous proliferation of free trade agreements (FTAs) in the Asia and Pacific region, countries will have better access to member countries' domestic market. The ASEAN free trade agreement, Regional Comprehensive Economic Partnership (RCEP) and Trans- Pacific Partnership (TPP)Hong Kong has forged 7 FTAs while Singapore has forged 24 FTAs[9].

I-IV Value Chain of the Fruit Business

Production

Past	• High level of self- sufficiency in own gardens • Local agriculture • First mechanisation
Present	• Low level of self- sufficiency • Trend towards urban gardening • Globalised agriculture • Large-scale, partially automated production
Future	• Production increasingly regional/urban • New concepts in urban/vertical farming • Non-industry producers (Google, Toshiba etc.) • Fully-automated mixed cultivation production

Distribution

Past	• First exotic fruit imports • Weekly markets in towns • Colonial goods • Strong seasonality of production • Key locations: Consumers come to the producers
Present	• Online trading • Partial return to street markets • Continuous availability of fresh produce, seasonality less important • Primarily via retailers: Consumers come to the store
Future	• Autonomous • Smaller urban delivery services • On demand / instant delivery • Crowd-sourced delivery • Rise of the platforms: Producer comes to the consumers

[9] Asia Regional Integration Center – Free Trade Agreements

Consumer Behaviour

Past	• Housewives: Responsibility for the family's nutrition • Primary requirement: Satisfying hunger • Limited knowledge about nutrition • Food is primarily consumed at home
Present	• Marketing of food origins • Health awareness • Organic boom fast good: fast, convenient and healthy • Flexibility, eating anytime and anywhere diets
Future	• Marketing of product characteristics • Processed fresh produce / Ready-made healthy recipes • Transparency / Requirement to know ingredients and origin of products • Controlled lifestyle • Fast to-go supply that is healthy and aligned with individual nutritional values

I-V Agricultural Tariff and Subsidy

Tariff on fruit trade between China and the U.S.

With the trade war between the U.S and China, agricultural sector is one of the many areas that has been taking a hit from the mutual introduction of tariffs. The whole trade war started off on April 2017 when the President of United States, Donald J. Trump, initiated the investigation on whether China has been conducting illegal technology transfer, stealing intellectual property etc. The dispute escalated to a trade war after the U.S assuredly imposing tariffs for aluminum and steel on China on March 2018.

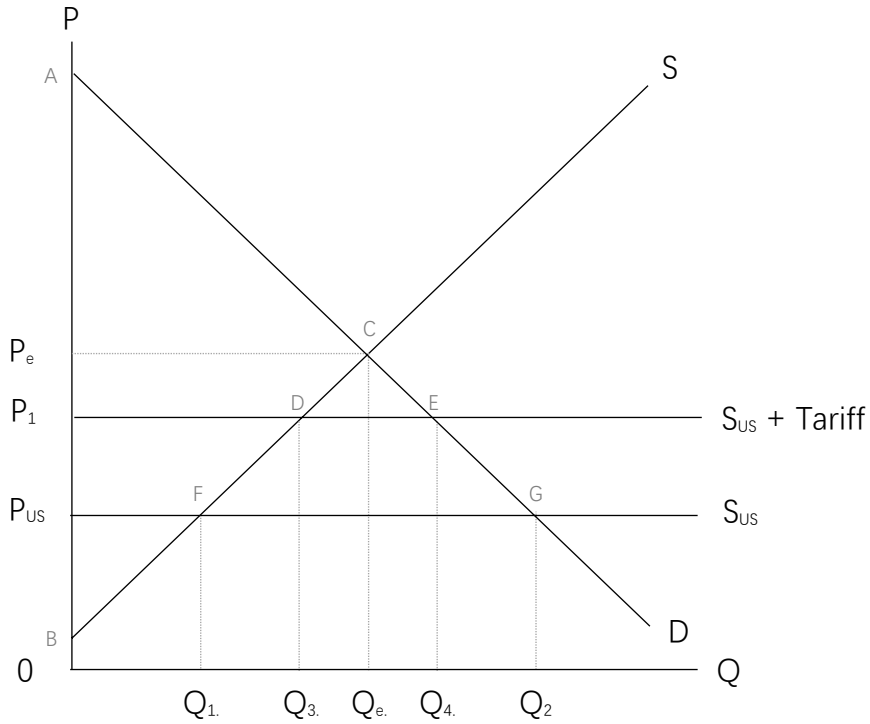
In response, on April, China announced an additional tariff on 128 products it imports from America, including the focus of this chapter fruit (15%).

HS Code	Product Description	i	ii	Additional tariff applied April 2, 2018	Total Paid
80940 80929	Apricots, cherries, peaches(including nectarines), plums and sloes, fresh	10%	10%	15%	27.5%
80510	Citrus fruit, fresh or dried; Oranges, fresh or dried	11%	11%	15%	28.6%
80610	Grapes, fresh or dried; Grapes, fresh	13%	13%	15%	30.8%
80810	Apples, pears and quinces, fresh; Apples, fresh	10%	10%	15%	27.5%

i: Applied tariff (MFN duties)
ii: Total and valorem equivalent tariff (VAT)
Source: International Trade Centre Market Access HS06 code

As seen in the chart, long before the trade war, China has been imposing tariffs on agricultural goods in order to protect its farmers and businesses. The total tariffs imposed on U.S agricultural goods in the end vary between 27% to 31%.

Effects of increased tariffs



- Price: ↑ from P_{US} to P_1
- Domestic quantity: supplied: ↑ from Q_1 to Q_3
- Quantity transacted: ↓ from Q_2 to Q_4
- Quantity imported: ↓ from Q_1Q_2 to Q_3Q_4

By economic reasoning, the imposed tariffs on U.S agricultural goods would increase the price of foreign fruits (from P_{US} to P_1), as explained in the graph, which will change Chinese buyers' consumption portfolio overtime. Simple Economics will tell that fruits imported from the United States will be consumed less, or the customers may turn to products with more appealing prices.

However, under the context of China, price is not the biggest consideration for Chinese consumers when buying fruit, especially not across all fruit categories. Good taste is the top reason Chinese consumers purchase imported food, according to Consumer Study on China's Imported Food Products by the USDA's Agricultural Trade Office in Shanghai. Many Chinese consumers purchase imported food impulsively for the sake of buying imported food, but for those who have planned the purchase, the product's country of origin is one of the top considerations for purchase.

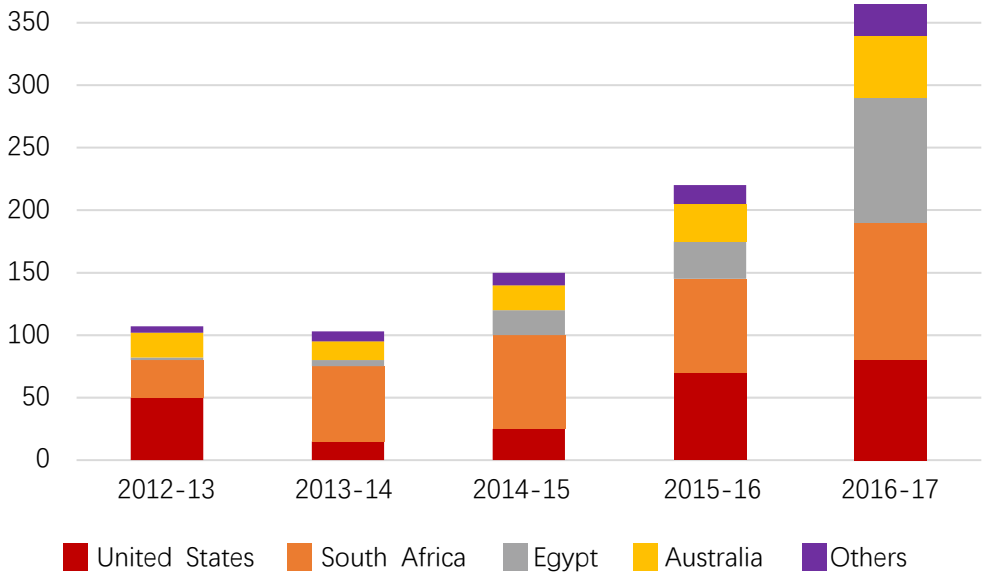
Prior to additional tariffs, U.S. imported fruit prices averaged higher than Chinese produced fruit and other imports. Wholesale market price reports show U.S.-imported oranges currently priced more than double other imported varieties and higher than the domestic variety, and still U.S. fresh orange imports to China have increased consecutively in the last three years through 2017 (ITC/UN Comtrade).

Spot Prices for Chinese and Imported Fruit at Baijiazi Wholesale Fruit Market, China

Fruit	Variety	Price (RMB per Kilo)
Oranges	Egypt	8.6
	Israel	11
	Spain, small & medium-sized	12
	China Ugly	15.3
	Spain, large size	16
	China from Yunnan	19
	U.S. Sunkist	21

Source: USDA FAS Gain Report April 2017

Total Orange Imports by Supplier (thousand metric tons – Marketing year Nov-Oct)



Source: Chinese Customs Data

As such, it is reasonable to deduce that Chinese consumers are relatively indifferent to the price increase of imported fruits. They are less price sensitive, i.e low Price Elasticity - low responsiveness to price changes.

For Chinese market, due to consumers' strong preferences in imported goods, price changes in foreign goods may not dramatically decrease the quantity of the goods consumed, as opposed to what we usually learn from the law of demand and supply. Be that as it may, the dispute between China and United States still shows the basic economic concept in international trade - Protectionism via imposing tariffs. Long before the outbreak of trade war, China has imposed tariffs on fruit, as a restrictive method to boost its own country's industry. In theory, taxing foreign fruits will mean Chinese consumers buying more local fruits instead.

However, it did not work as much as expected. The imports of foreign fruits did not drop dramatically as a result of rising tensions between countries. Thus, we can see that to better understand international economy, concepts across topics in economics can be applied to better understand the reality, such as the price elasticity concept used here.

Agricultural Subsidy

Farming is a lucrative business in the U.S, as long as agricultural subsidy is granted to the industry. The Federal Government spends more than $20 billion a year on subsidies for farm business. Around 40 percent of the nation's 2.1 million farms receive subsidies[10], with the biggest shares going to producers of corn, soybeans, wheat, cotton, and rice. There are also many forms of subsidies than merely direct payments[11]. For example, there is counter-cyclical payments, triggered when market prices fall below certain thresholds; revenue assurance program that provides for overall profitability for a given crop; marketing loan that offers very favorable terms whereby farmers can realize tremendous gains through loan deficiency payments (LDPs) and commodity certificates; disaster payment that recoups large losses due to natural phenomena. And the government subsidizes crop insurance to further insulate farmers from risk.

All these kinds of measures are to guarantee the sustainability of agricultural business in the U.S. Meanwhile, these subsidies are creating an unfair competitive landscape for smaller nations, squeezing up their market shares by competitive pricing. Therefore, there needs to be an international mediator and regulator, i.e the World Trade Organization, stipulating the reasonable level of subsidy.

In 2016, the United States lodged a complaint over China consistently exceeding its WTO agricultural subsidy limits. WTO ruled in favour of the U.S and China had to either cut its subsidies or the U.S will have the legal right to retaliate. It was estimated that Beijing provided an $212 billion in farm subsidies in 2016, significantly higher than of the U.S at the time ($33 billion)[12].

[10] Downsizing the Federal Government – Agricultural Subsidies
[11] EWG Farm Subsidy Primer
[12] Kristen Hopewell (March 4, 2019)The WTO just ruled against China's agricultural subsidies. Will this translate to a big U.S. win?

Beijing attempt to bolster rural incomes through subsidies. It was completely understandable from this point of view, and thus, China argued that 'it is hypocritical for the United States to criticize agricultural subsidies, when Washington has historically been a heavy subsidizer of its own agriculture sector.'

These arguments between nations engendered the need for an international mediator. Later in the following chapters, we will examine how WTO has been a free trade promoter and the limitations of it as well.

II

Economic Concepts of Fruit Trade

II-I Substitute Goods (Fresh / Frozen Fruit)

In case you go shopping for fruits, you may notice that products of the same kind may differ in pricing. For example, fresh apple may cost higher than a frozen apple. One may argue there exists an economic illusion that frozen fruit, which involves more processing and logistics needs, should not be cheaper than fresh produce.

However, if we delve into the issue, we will understand why it is the case. Firstly, fresh fruits are very perishable products and must be harvested, conditioned, packed, shipped, merchandised in shops, sold to consumers and eaten in a short time. This imposes a demanding logistics need on the suppliers. If the fruits resulted into wastage, there will be no economic benefits for anyone. Therefore, suppliers are always willing to supply frozen fruits for its much longer shelf life.

Especially now that we have Individual Quick Freezing (IQF) machines that freeze fruits in an instant, mass and scaled production of frozen fruits is made possible. The cost of selling frozen fruits is even lower. Also, the over-production of fruits that were meant to be fresh can be diverted to freezing. Suppliers can be more agile to adjust to the market conditions with frozen goods. Therefore, it is obvious that frozen goods should be cheaper than fresh even with more complicated logistics procedures.

Fresh fruits tend to be more expensive than frozen fruits. But since they are from the same breed, they are more or less of the same quality. Consumers will treat them as substitute goods. When

people have higher disposable income, they tend to pick fresh fruits, and vice versa. When prices of fresh fruits increase, price- sensitive consumers will turn to frozen counterparts. This is what it means by substitute goods.

Nutrient Scores and Prices for Vegetables

	Canned*	$^	Frozen*	$^	Fresh*	$^
White Corn	0.013	0.69	0.011	1.40	0.014	1.17
Yellow Corn	0.013	0.69	0.012	1.40	0.014	1.17
Carrots, Whole	0.061	0.69	0.048	1.19	0.049	0.77
Spinach	0.298	0.84	0.221	1.51	0.334	3.92
Turnip Greens	0.096	0.81	0.079	1.48	0.177	2.11
Green Beans	0.049	0.67	0.035	1.22	0.039	3.23
Peas	0.023	0.74	0.027	1.34	0.030	1.83
Asparagus	0.083	2.09	0.075	3.61	0.084	1.83

*Indices of Vitamin intake per calorie consumed
^Price per Edible Cup

Source: Nutrition and cost Comparisons of Select Canned, Frozen, and Fresh Fruits and Vegetables

For substitute goods, when the price of one good increase (decrease), the demand of the other good will increase (decrease).

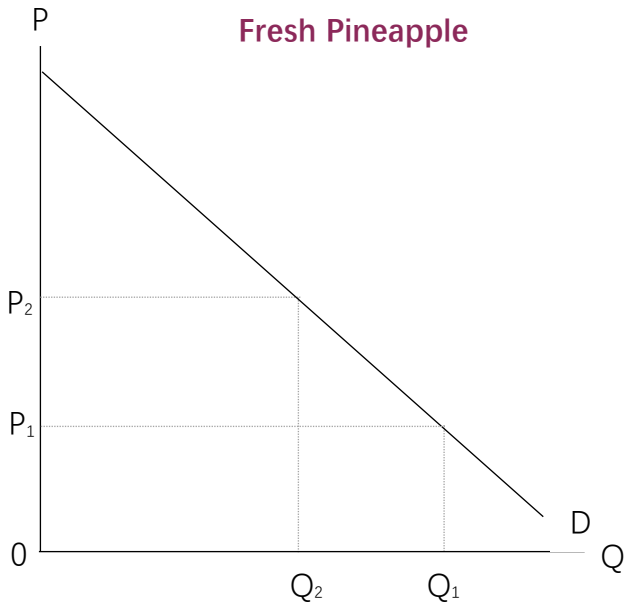
Example

When the price of fresh pineapple increases, how would it affect the demand and the price of canned pineapple?

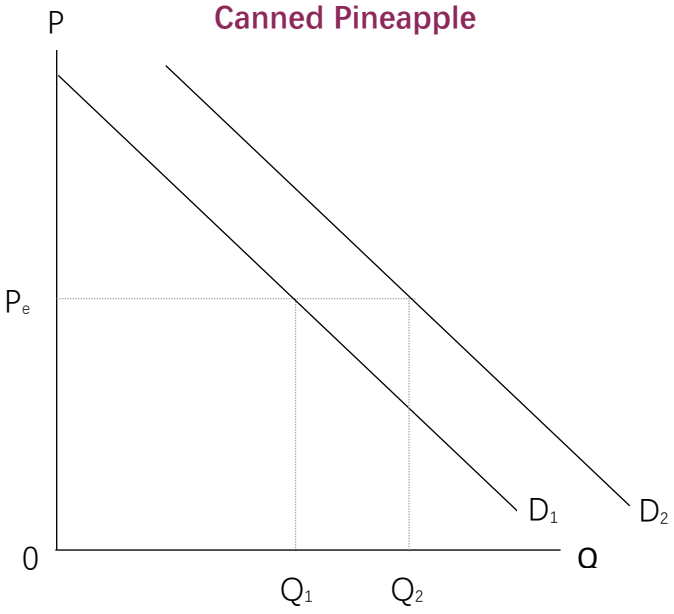
To find out more about:

Global Trade Patterns in Fruits and Vegetables Report

When the price of fresh pineapple increase (from P1 to P2), the quantity demanded of it will fall from Q_1 to Q_2. This would not cause any change in the demand for it as the factor affecting it is only price.



When the price of the fresh pineapple increase, more people will turn to canned pineapple if they would like to consume pineapple. This will boost the demand of the canned pineapple, shifting its demand curve rightward (from D_1 to D_2). Therefore, at the same price level, more consumer would want to purchase canned pineapple than before, raising the quantity demanded from Q_1 to Q2.



II-II Substitute in Production

Now that we have covered substitute topic in the demand side, you may be curious to know about the substitute in the supply side. The jargon that you are looking for is called 'substitute in production'.

They are goods for which producing more of one requires producing less of the other. Consider good A and good B, A's substitute in production. If the price of good B rises, then the supply curve for good A must shift to the left. The reasoning is simple. Think of it from a businessman's perspective, if the good B is selling very well and getting great response from the market, you may want to cut supply of good A and to produce good B to gain higher profits.

Farmers are frequently faced with the production of substitute crops, such as corn or soybeans. An increase in the production of corn implies producing less soybeans. So, farmers are often faced with this problem and calls for economist to evaluate which produce is of high economic worth.

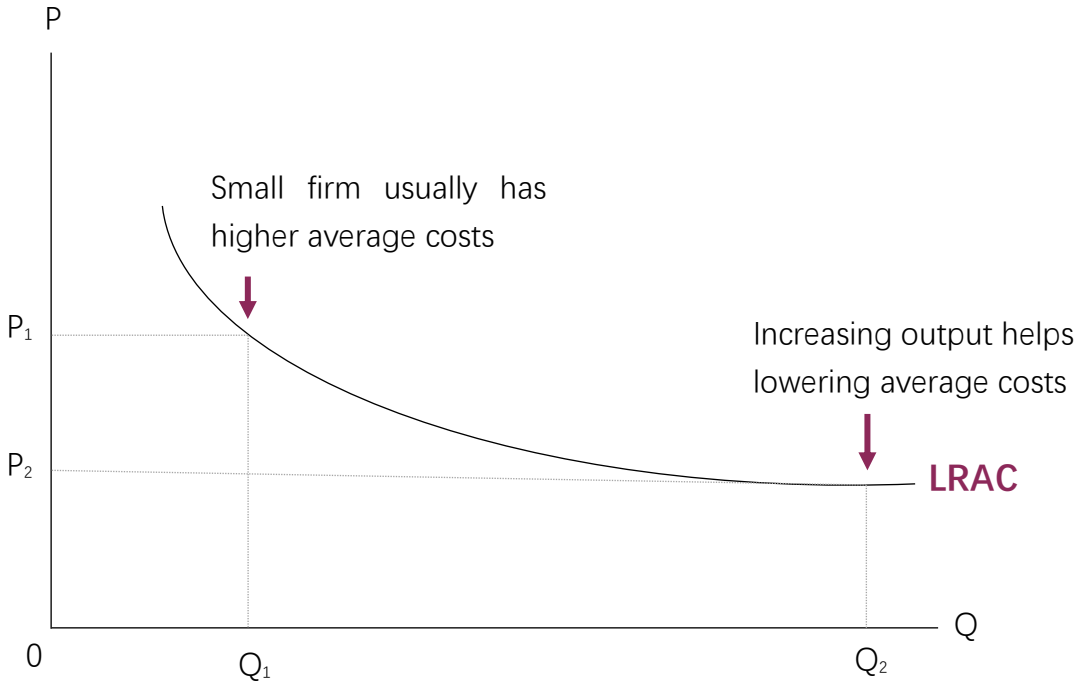
The key to remember this concept is to think from a supplier's perspective. And your ultimate end is to achieve higher profits, be it for your own sake or for your shareholders. Then, you will easily grasp this concept.

II-III Economies of Scale

Economies of scale are factors that cause the average cost of production to fall as the volume of its output increases. It brings greater efficiency and lower costs in scale economies.

Multinational companies are familiar with the process of intensive production in large modern plantations, with proper management on input costs regulation. The massive quantities of production permits loading of entire vessels and therefore reduce the unit cost of transportation. Moreover, owning refrigerated cargo ship (reefer vessel) allows them to have control over availability of sea freight that significantly reduce the risk and complexity of transportation.

Policy Support is also crucial in countries' fruit sector. For instance, in Chile, Over 600 million dollars are spent to modernize the obsolete orchards with species and varieties that are attractive to the international markets, and with technological improvements that make the processes efficient for the producer.



III Macroeconomic Performance

III-I Trade Flow in Asia

The fruit market is a dynamic market that about 9% of all fruits grown are traded internationally, much more vibrant and global than the vegetable market. Among numerous market players, China stands out to be an important fruit importer and Latin America as a dominant global export force. The fruit market is diverse with products ranging from fresh to processed and even in the form of liquid – juice. Therefore, fruit trade is always one of the key topics on the agenda of free trade agreements.

In Asia, China and India are ranked respectively as second and tenth in the fresh fruit import countries. At the same time, according to Agri-exchange, China is ranked 5th place in the major exporting countries.

Major China's Fruit Trade

Exports

Apples (in 1,000 tonnes)
- Russia (113)
- North Korea (52)
- India (125)
- Nepal (56)
- Bangladesh (181)
- Myanmar (86)
- Indonesia (90)
- Thailand (143)
- Vietnam (110)
- Philippines (145)

Grapes (in 1,000 tonnes)
- Thailand (117)
- Vietnam (54)

Citrus (in 1,000 tonnes)
- Thailand (143)
- Vietnam (165)
- Russia (155)

Total fresh fruit (USD million)
- Thailand (921)
- Vietnam (880)

Imports

Bananas and plantains (in 1,000 tonnes)

- Philippines (664)
- Laos (252)
- Myanmar (109)
- US (174)

Grapes (in 1,000 tonnes)

- Australia (79)
- Chile (219)

Citrus (in 1,000 tonnes)

- South Africa (217)
- US (190)

Total fresh fruit (USD million)

- US (845)
- Chili (1065)

III-II Hong Kong and the Philippines

The Philippines is an archipelago composed of 7,107 islands stretching to an area of 300,000 square kilometres. Luzon, Visayas and Mindanao are the three largest island groups. Its favourable climate and fertile soils make it an ideal location for tropical fruit production. The country boasts of more than species of edible fruits and nuts but only 20 species are cultivated commercially. The major fruit species grown in the country are banana, pineapple, mango, papaya and calamondin which are also major export winners. China, Japan, Hong Kong, South Korea, Taiwan and the Middle East are the major markets for Philippines fruit exports.

Fruit production system in the Philippines ranges from backyard to highly integrated operations intended for the export markets. Let's use banana, the tropical fruit with the highest production volume in Philippines as an example. The banana industry in the Philippines is divided into two distinct sectors: those for domestic market and those for export. Among the six important banana cultivars produced in the Philippines, two are intended for the export market ("Cavendish" and "Bungulan") while the remaining four are grown for local markets. Banana exports produced in the country from commercial farms managed by multinational companies in the southern Philippines (Mostly in Mindando where typhoons seldom occurs). Under intensive cultivation in

To find out more about:

Global Trade Patterns in Fruits and Vegetables Report

integrated farms, Philippines exporters fully utilised their potential to minimise the risk and the cost of production.

There are strong reasoning why banana growers and exporters are always asking for more government support. Tropical fruit has lower lifespan and its production is severely affected by adverse weather conditions. Facing the fierce competition with South American producers, a small increase in tariffs in its major trading partners would be devastating. In 2019, Philippines has reclaimed its position as the second largest exporter of bananas in the world, but Filipino growers are still seeking the tariff reduction/elimination of high tariff in South Korea to remain competitive against South American producers.

The country's top fruit imports include apple, mandarin, orange and grapes. Filipino government does not impose high tariffs on imported fruits. Although it may involve some historical reasons, one of the possible explanation is that it is more desirable to have more kinds of fruit to choose, and the fruit imports to and export from Philippines are highly different, so setting a lower tariff will benefit local consumers and not harm local fruit producers too much.

III-III Japan

Japan's free trade and its negotiations with different countries is a huge topic that is worth delving into. It has long been accused for its subsidy policy and imposing high tariffs on foreign agricultural goods to protect its domestic produce. There are strong rationales for such practice because they are facing a plight that calls for trade protectionism.

The plight of domestic agriculture can also be seen when we look at individual farming families. According to the Ministry of Agriculture, Forestry and Fisheries, the farming population in Japan is 2.53 million, and there are 1.50 million farms, but their agricultural sales are only 500,000 yen (approximately 5,000 dollars) on average.

Unfortunately, Japan agricultural sector does not look that promising. The number of family-owned farms ringing up annual sales of more than 7 million yen is just 171,500, where Japan's average household income is 5.48 million yen. The average age of farmers is 65.8 years old, and the ratio of 65-and-over workers to the total agricultural population is 61.8%. Japanese agriculture is facing strong headwinds that it might take several decades to recover if it collapsed.

Japanese Family Farms by Sales

Family Farms	Total	~ ¥ 1m	1~3 ¥m	3~5 ¥m	5~7 ¥m	7~10 ¥m	10~30 ¥m	30 ¥m
Total	**1,503.9**	**878.2**	**304.9**	**95.3**	**53.9**	**54.5**	**90.9**	**26.1**
Single Product Farm *	**1,090.6**	**658.1**	**223.9**	**64.5**	**33.7**	**33.2**	**58.0**	**19.2**
Rice	716.3	546.1	129.1	21.6	8.4	4.4	6,5	0.2
Upland field Crops [i]	47.0	21.3	12.1	4.4	2.2	2.7	3.7	0.6
Open field vegetables	79.3	28.8	21.0	8.2	4.8	5.0	9.7	1.8
Facility vegetables	46.7	3.2	8.5	7.2	5.3	7.4	13.6	1.5
Fruits	119.8	43.4	37.1	16.0	8.2	7.7	7.0	0.4
Milk cow	15.7	0.2	0.4	0.2	0.4	0.9	6.2	7.4
Beef	24.4	5.5	8.0	2.5	1.6	1.5	2.8	2.5
Others [ii]	41.6	9.6	7.7	4.4	2.8	3.6	8.5	5.0
Combined Product Farms **	**284.3**	**91.2**	**81.0**	**30.8**	**20.2**	**21.3**	**32.9**	**6.9**
Farm without sales	128.9	128.9	-	-	-	-	-	-

(1,000) Farms
*Sales share of a primary product is more than 80%
**Sales share of a primary product is less than 80%
i Wheat, Millet, Potatoes, Beans, Industrial Crops
ii Flower, Other Field products, Pork, Poultry, and other Stockbreeding

Source: MAFF, "Nougyou Kouzou Doutai Chousa (Survey on Structure and Movement of Agriculture)," 2012

In light of this, despite critical opinions in the international arena, Japanese government has to insist a series of subsidy to sustain its agricultural sector. But that is not nearly enough to stop stiff competition from its rival across the strata – China, which has been invading the market and grabbing the market shares by competitive pricing. Therefore, Japanese government has to also impose stiff tariffs on foreign counterparts.

[13] Japan Ministry of Health, Labour, and Welfare

According to WTO World Tariffs Profile 2018, Japan has imposed tariffs on various goods, in which the agricultural one is among the highest.

	Total	Agricultural Products	Non-agricultural products
Simple average final bound	4.5	18.0	2.5
Simple average MFN applied	4.0	13.3	2.5
Trade weighted average	2.5	12.9	1.4

III-IV Germany

German wholesale companies import most of the fruit and then distribute it to wholesale markets and retail chains. Small greengrocers, including the popular Turkish greengrocers, buy their produce from wholesale markets. With the exception of EDEKA, retails chains very rarely participate in the importation process. We highly recommend working with an importer, as these companies have valuable experience in fulfilling certification, labelling, and other import requirements.

Germany is a very price-sensitive market. Exports to Germany will thus be difficult during the peak of the local season when prices are low, and in some cases, tariffs are high. Nevertheless, significant off-peak export opportunities exist.

German consumers typically prefer to buy produce that is in season. In addition, the trend to buy locally grown produce gained some traction in recent year, aided by several “regional” seals. On the other hand, many consumers enjoy the variety of fruits and want their favourite fruit at any time of the year. As a result, some retail markets proudly advertise seasonal produce stocked year- round, but prices are higher off-season. Consequently, out-of-season strawberries or cherries can fetch high premiums, but only for small volumes. For example, the local German strawberry season lasts from mid-May until the beginning of August, while small volumes are being sold year round.

To find out more about:

WTO World Tariffs Profile 2018

The United States has a good reputation for quality. In some cases, it would also be advantageous to include the state of origin in addition to the U.S. origin on packaging. For example, produce from California and Florida is particularly well-received because consumers associate these states with sunshine.

Food safety and environmental concerns are major issues in Germany. The public reacts strongly to food scandals that involve high levels of pesticide residues or contaminants and stops buying products associated with the scandal. This can be an advantage for U.S. products because of the United States' high food safety standards.

German consumers frequently choose environmentally-friendly foods and packaging over others. Accordingly, consumption of organic products is rising steadily in Germany. Conventional products that convey a natural image are also viewed positively. For example, many consumers prefer to buy individual or bulk fruits rather than those in what is considered to be extraneous plastic packaging. Some consumers even avoid fruits labelled with a plastic PLU code sticker. However, the proportion of pre- packaged fruits on the market is increasing, especially in the convenience and the discount sectors.

> German consumers are willing to pay a premium for goods that comply with high environmental standards. They have higher price tolerance for goods without environmental issues. What does it tell about price elasticity of demand?

IV Case Studies

IV-I Japan Fukushima Nuclear Disaster

On 11 March 2011, a massive offshore earthquake triggered a tsunami that swamped the Fukushima Daiichi nuclear power station. Plumes of gas from the reactor released radioactive isotopes into the local area, which were transported farther afield by wind and rain, before falling onto plants and seeping into soil.

The Japanese government banned products that were likely to have been affected, including leafy vegetables, which can absorb radioactive elements through their leaves, and milk from animals that had been feeding on local grass.

The government also instigated an extensive monitoring campaign, sampling foods before they hit the market for levels of radioactive elements such as caesium-137, and banning producers or areas that exceeded regulatory limits.

To find out more about:

IPPNW 5 Years Living with Fukushima – Summary of the health effects of the nuclear catastrophe

Number of food samples measured in Fukushima and Japan as a whole, as long as number of samples exceeding the provisional regulatory limits

		Fukushima	Total
11 March 2011 until 31 March 2012	No. of samples measured	21,549	137,037
	No. of samples exceeding limits	718	1,204
	% of samples exceeding limits	3.3%	0.9%
1 April 2012 until 31 March 2013	No. of samples measured	34,857	278,275
	No. of samples exceeding limits	1377	2,372
	% of samples exceeding limits	4.0%	0.9%
1 April 2013 until 31 March 2014	No. of samples measured	40,759	326,582
	No. of samples exceeding limits	608	975
	% of samples exceeding limits	1.5%	0.3%
1 April 2014 until 31 August 2014	No. of samples measured	17,734	135,741
	No. of samples exceeding limits	105	205
	% of samples exceeding limits	0.6%	0.2%

Source: Analysis of Japanese Radionuclide Monitoring Data of Food Before and After the Fukushima Nuclear Accident

Even though the radioactivity in Fukushima's food has now returned to pre-accident levels, consumption has not yet recovered, says Jun Furukawa, an environmental scientist at the Center for Research in Isotopes and Environmental Dynamics at the University of Tsukuba in Japan.

Prices of fruits in Fukushima prefecture (mostly bought for gifts) largely recovered since consumers choice of these products is not determined by price but "origin of product" factor. There has been considerable decrease in shipments of major farms products from affected regions – in 2011 there was big decline in apples, Japanese pears and radish from Fukushima and Tohoku region.

In light of this, the Japanese government launched a series of measures to compensate the loss of local farmers.

To find out more about:

IPPNW 5 Years Living with Fukushima – Summary of the health effects of the nuclear catastrophe

Breakdown of Compensation Claims in Fukushima Prefecture (100 million yen)

Claims	On May 1, 2012		On May 1, 2013	
	Value	Share in total (%)	Value	Share in total (%)
Rice	11	1.8	32	2.9
Horticulture	130	20.8	264	24.2
Fruit	62	9.9	75	6.8
Milk	18	2.9	75	6.8
Livestock disposal	99	15.8	100	9.2
Other livestock damages	85	13.6	162	14.8
Pasture	27	4.3	50	4.6
Untitled land	163	26.1	325	29.8
Business damages	30	4.8	64	5.8
Total	625	100	1,092	100

Source: Central JA Union for Fukushima Prefecture

> Do you think the compensation will harm the promotion of free trade?

In May 1, 2012, the compensation for the fruit market amounted to 6 billion yen. And in 2013, it almost reached 8 billion yen.

In fact, after the Fukushima disaster, studies have shown how prices of different consumer goods fall dramatically. In 2013, companies are recorded with a staggering 23.6% decrease in sales[14].

[14] Fukushima Food Industry Organization, February 2013 survey

V Suggested Questions

Q1. Explain two demand factors that drive global fruit exporters to eye on China.

(Suggested answer, students may develop arguments other than those in the teaching case or suggested answer, acceptable as long as make sense)

With increasing income, Chinese people are seeking for higher quality of life and become more accepted to products with high prices. Thus, they are more open to imported fruits with high quality and relatively higher prices. Exporters spotted this phenomenon and increased their exports to China for further sales proceeds.

The one child policy is also a driver for China's surging demand for foreign fruits. Citizens are pooling one family's financial resources on single kid, which incentivizes them to offer the best products available to their children. Parents are thus eyeing on foreign fruits with diversity and better quality for their kids' nutritional needs.

Q2. Explain two factors facilitating cross-regional fruit trade.

(Suggested answer, students may develop arguments other than those in the teaching case or suggested answer, acceptable as long as make sense)

Trade agreements and partnership schemes reduce or eliminate tariffs of fruits imposed by countries. Prices of foreign fruits thus become more competitive in the market, providing an incentive for producers to sell their fruits overseas to capture market share.

Developments in cargo technologies have led to significant increase in global fruit trade. The emergence of controlled-atmosphere storage and cold-chain facilities enables long-travelling of fruits, which are non-durable and sensitive to humidity and temperature. The advancement in such technologies further lowers the costs of fruit transporting. With lower transport costs and potential damage to fruits, producers will be more willing to sell their produce overseas.

Q3. International fruit trade promotes enjoyment of comparative advantage and economies of scale, which are advantages in macro scale. Can you explain two advantages, standing at the side of consumers or individuals?

(Suggested answer, students may develop arguments other than those in the teaching case or suggested answer, acceptable as long as make sense)

International fruit trade promotes competitions. Producers would have to engage in price or non-price competitions to gain market share. Possible strategies are price cut or improvement in product qualities. Consumers thus will be able to enjoy the same product with lower price or better quality.

It also enhances fruit diversity available in countries. People can purchase counter-seasonal or non-native fruits from other countries. Exotic tropical fruits like passion fruit, durian and dragon fruit can now be also consumed in non-tropical countries. Consumers thus enjoy a wide choice of fruits with multifarious tastes and different nutritional values.

Q4. In addition to economies of scale, what can producers benefit from international fruit trade?

(Suggested answer, students may develop arguments other than those in the teaching case or suggested answer, acceptable as long as make sense)

The trade brings various fruits across regions. Producers thus can acquire now species and cross-breed to launch new products. Localization of non-native fruits can also help them capture market share without bearing the transport costs and risk of defects.

Q5. Why does the Chinese government, despite the inelastic demand and harm to consumers, impose tariffs on imported fruits even before the commencement of trade war?

(Suggested answer, students may develop arguments other than those in the teaching case or suggested answer, acceptable as long as make sense)

From the teaching case, we can see that imported fruits have been overwhelmingly popular in China. Being in a developing country, the producers might not be able to use advanced machines and conduct massive production, which means that they potentially could have higher average costs than the foreign producers, even though including overseas transportation costs. The labor mobility of those farmers is lower than factory workers and urban residents. The measure of tariffs is to protect their living by making their produce more competitive relative to foreign produces.

IV Conclusion

Learning about the global fruit trade does not only help us have a better understanding on how the trade of fruits works, but it also helps us to apply what we have learnt in economic lessons, from tariffs to pricing, to the real-life cases. It is a blessing for us to enjoy various exotic fruits within the reach of our hands。Yet, never underestimate the hard work of different parties and the policies involved behind the whole supply chain. Hopefully, this teaching case serves not only a teaching material to students, but also an inspiration to students to link economic concepts with real-life issues.