

KREI Agri-policy Focus

Ten Years of Korea-U.S. FTA: focusing on agri-food trade

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Summary

10 years have passed since the Korea-U.S. FTA came into force on March 15, 2012. Tariffs on 97.9% of agricultural products have since been abolished.

- Seoul and Washington had eight negotiations with two additional rounds of talks before the treaty finally went into effect in March 2012. Through their talks, the two sides agreed to open 97.9% of agricultural items (based on the Harmonized System).

The bilateral trade volume in agricultural products has increased since the effectuation of the Korea-U.S. FTA. Korea's trade deficit has widened during the period, while FTA application for goods exported to the U.S. has been relatively low.

- The agricultural and livestock products imported from America reached \$10.32 billion in the 10th year (2021) of the treaty, up 73.8% from the average before the treaty went into effect. The average import volume between the 6th and 10th year of the treaty amounted to \$9.07 billion, up 52.7% before the enforcement.
- Korea's agricultural and livestock exports to the U.S. posted \$1.26 billion, 214% up from the average before the treaty. The average export between the 6th and 10th year reached \$980 million, up 43.6% during the same period.
- Korea's trade deficit rose to \$809 million in the 6th-10th year, up 46.1% from the average before the treaty.
- The average import unit prices for American beef, pork, grape, and kidney beans in the 6th-10th year were up from the figures before the treaty. However, the imported volumes and their shares to the total expanded during the same period.
- The fill rates of U.S. items subject to tariff rate quotas (TRQs) were around 50% due to changes in import sources and decreased demand for American products. ASG measures were triggered for five items.
- FTA application for items imported from the U.S. amounted to 71.6% on average in the 10th year of the treaty. However, the application for items exported to the U.S. slightly rose from 42.9% in 2012 to 49.5% in 2021, with the livestock category at 70.7%, the highest of all.

The Korean government has signed free trade agreements with various nations. While doing so, it should also pursue self-sufficiency by expanding the domestic output of high-quality agricultural and livestock products. At the same time, it must focus on education to increase FTA application to Korean products exported to America.

- Korea should use digitalized, smart farming to expand high-quality product output. The government has to educate stakeholders to raise FTA applications for Korean agricultural and livestock products exported to the U.S.

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Introduction

South Korea effectuated seven free trade agreements (FTAs) before the Korea-U.S. treaty. Afterwards, it took effect ten more treaties.

Following its FTA roadmap, the Korean government first closed deals with countries that have relatively less complex interests than those of other nations regarding sensitive areas such as agriculture. Then it proceeded with deals with large economies.

- The Korean government set its FTA implementation roadmap in 2003: it would pursue talks with large economies in the long term while concluding treaties with countries with fewer hurdles to trade agreements.
- After the Korea-Chile FTA took effect, the government sealed treaties with Singapore, ASEAN, and India to secure the Asian market, where the nation would increase trade while avoiding damages to its agricultural sector.
- After the deal between Korea and the U.S. closed in April 2007, the government was in talks with the EU about free trade. It also closed treaties with Canada, Peru, Turkey, Australia, and New Zealand, which it had pursued before the Korea-U.S. agreement.

The Korea-U.S. FTA came into effect on March 15, 2012, after the official announcement in Washington in February 2006.

The treaty came into effect after the two nations held eight official negotiations, with two additional meetings.

- The two sides closed the deal in April 2007 after holding eight official talks from June 2006 to March 2007.
- Seoul and Washington held two additional meetings in June 2007 after the deal's closure. They also had further meetings in November-December 2011 upon Washington's request.
- The Korea-U.S. FTA went into effect on March 15, 2012, after it was ratified in the National Assembly in November 2011.

The Korean government offered financial investments and loans to farmers from 2008 to 2017 to relieve their anxiety over the treaty and expand their income bases.

- The government set aside a fund of 20.4 trillion won after April 2007, when the two sides first reached an agreement. It added a fund of 1 trillion won for additional investments and loans in 2011, considering changes in economic conditions.
- Before ratifying the treaty in 2012, the government set up a fund of 1.7 trillion won to support farmers. In total, it put aside 23.1 trillion won for investments and loans.

10 years have passed since the enforcement of the treaty, and tariffs on 97.9% of agricultural products are abolished as of 2021.

Korea removed tariffs on 578 items from 1,531 items based on the Harmonized System (HS) Codes immediately after the enforcement. It also decided to abolish tariffs on 1,342 items in 10 years and 1,490 goods in 15 years, resulting in a market opening of 97.9% (see Table 1).

- It excluded rice and related products (16 codes) from the abolition list while imposing tariff rate quotas (TRQs) on 16 items, including orange, potato, soybeans, and natural honey.
- It decided to abolish taxes on apple and pear for 10 years while abolishing tariffs on Fuji apple and Asian pear for 20 years. Seasonal tariffs were applied to grape, orange, and potato for chips.
- It applied the agricultural safeguards (ASG) to sensitive goods such as beef, pork, and apple and high-tariff goods such as chili pepper, garlic, onion, ginseng, and barley (see Table 2).

<Table 1> List of tariff abolition for agricultural and livestock products

Staging Category	No. of HS Codes	Rates	Items
A(Immed.)	578(9)	37.8%	Orange juice (frozen), live animals, breeding stocks, raw hides, cotton, fiber raw materials, flowers, coffee, grape juice, wine, wheat, feed maize, soybeans (for oil and soy sauce), feed peas, feed whey, etc.
B(in 2 yrs)	6	0.4%	Avocado, lemon, prunes (dried), cola base, etc.
C(in 3 yrs)	33	2.2%	Gum, other enzymes, etc.
Q(Jan. 1, 2014)	20	1.3%	Pork (refrigerated carcasses and half-carcasses, refrigerated anteriors and posteriors, frozen meat, offal meat, processed products)
Jan. 1, 2016	1	0.1%	Frozen other pork (pork neck, ribs, etc., added after additional talks)
D(in 5 yrs)	317(2)	20.7%	Peas, potato (frozen), tomato juice, orange juice (refrigerated), cranberry juice, plum juice, whiskey, spaghetti, noodles, vermicelli, Naengmyeon, instant coffee, soy sauce, red pepper paste, etc.
E(in 6 yrs)	2	0.1%	Maize oil, shelled walnut
F(in 7 yrs)	41	2.7%	Beer, ice cream, apricot, corn for popcorn, corn (for processing), grapes (prepared or preserved), apples (prepared or preserved), etc.
L(in 9 yrs)	1	0.1%	Fresh strawberry

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Staging Category	No. of HS Codes	Rates	Items
G(in 10 yrs)	332	21.7%	Live swine, peach, persimmon, sweet persimmon, citrus juice, tobacco leaf, plum, royal jelly, artificial honey, chicken leg (frozen), pork (refrigerated pork belly, pork neck, ribs, etc.), sweet potato, apple (except Fuji), pear (except oriental pear), oyster mushroom, winter mushroom, Ling chiu mushroom, etc.
M(in 12 yrs)	34	2.2%	Cattle for milk, chicken (frozen breast, wings), frozen onion, watermelon, melon, etc.
H(in 15 yrs)	98(2)	6.5%	Cattle for meat, beef, egg, young antler, antler, red pepper, garlic, onion, ginger, shiitake mushroom, kiwi, walnut in shell, Korean citrus, green tea, chestnut, pine nut, sesamum seed, sesame oil, alcohol, starch, mixed seasoning, etc.
N(in 16 yrs)	2	0.1%	Sugar
O(in 18 yrs)	3	0.2%	Red ginseng (whole ginseng, root hair, undergrade ginseng)
P(in 20 yrs)	0(2)	0.1%	Fuji apple, oriental pear
G(10 yrs) + TRQ	11(1)	0.8%	Butter, formula (for infants), whey (edible), cheddar cheese
M(12 yrs) + TRQ	6	0.4%	Supplementary feed, dextrine
H(15 yrs) + TRQ	10	0.7%	Cheese, barley, malt and malting barley, corn starch, forage plant
O(18 yrs) + TRQ	4	0.3%	Ginseng (raw ginseng and whole, root hair, and undergrade white ginseng)
W(in 7 yrs, Seas. tariff) + TRQ	1	0.1%	Orange
U(15 yrs, Seas. tariff)	0(1)	0.1%	Potato for chips
V(17 yrs, Seas. tariff)	1	0.1%	Grapes
X(Base rate)+ TRQ	14	0.9%	Edible soybean, edible potato, skim/whole milk powder and condensed milk, natural honey
Y(Excluded)	16	1.0%	Rice and rice–related products
Total	1,531(17)	100%	

Note 1) Upper case in the staging category means the actual staging categories in the text of the Korea–U.S. FTA treaty.

2) In the HS code column, the number in parentheses refers to the number of items with an individual HS code.

Source: Seung Seok–Ho (2011); The Government of the Republic of Korea (2012).

<Table 2> Agricultural safeguards (ASG)–applied items

Category	No. of HS codes	No. of items	Items
Type 1 Below std. qty.: Conventional tariff rate Above std. qty.: ASG	53	13	Beef, pork, onion, garlic, red pepper, apple, green tea, ginger, peanut, sesamum seed, ginseng, sesame oil, sugar
Type 2 Below std. qty.: Zero duty Above std. qty.: ASG	6	2	Other roots and tubers, flour meal, powder, flakes, granules and pellets of potato
Type 3 Below intermediate std. qty.: Zero duty Below primary std. qty.: Mid–level ASG Above primary std. qty.: Primary ASG	19	7	Beans (mung beans, red beans), sweet potatoes, popcorn, corn, buckwheat, pulverized grains, processed grains
Type 4 Tax–free qty in std. qty.: Zero duty Below std. qty.: Conventional tariff rate Above std. qty.: ASG	5	4	Potato starch, manioc starch, sweet potato starch, other starch
Type 5 Below std. qty.: Zero duty TRQ Above std. qty.: ASG	13	4	Malt and malting barley, barley, corn starch, dextrine
Total	96	30	

Note: The number of HS codes as of 2012.

Source: FTA Implementation Division (2012).

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Enforcement of the Korea–U.S. FTA and changes in agri–food trade

2.1. Agri–food trades

After the Korea–U.S. FTA came into force, the bilateral trade in agricultural and livestock products has increased, with Korea’s trade deficit widening year by year.

In the 6th–10th year of the FTA, imports from and exports to the U.S. increased compared to before the effectuation of the agreement, with record highs in 2021 (see Table 3).

- The imports from the U.S. in the 10th year amounted to \$10.32 billion, 73.8% up from the average before the FTA enforcement. The average import between the 6th and 10th year stood at \$9.07 billion, 52.7% up from the average before the enactment.
- The exports to the U.S. in the 10th year amounted to \$1.26 billion, up 214.7% from the average before the treaty, while the average exports between the 6th and 10th year reached \$980 million, up 143.6% from the average before the trade agreement.

The deficit in the trade with the U.S. continued to rise to reach \$9.05 billion in 2021 (see Table 3).

- The average trade deficit in the 6th to 10th year amounted to \$8.09 billion, 46.1% up from the average before the FTA enforcement (\$5.54 billion). Although the growth rate in exports rose higher than the rate of increase in imports, the nation faced a yawning deficit as its export volume was smaller than the import volume.

The nation’s import and export volumes increased after the effectuation of the FTA: the ratio of imports from the U.S. rose slightly, while that of exports to the U.S. grew sharply (see Table 3).

- Although livestock and fruit imports increased, the ratio of imports slightly grew to 25.5% in the 6th to 10th year from the average before the FTA enforcement (25.2%).
- The share of exports to the U.S. sharply increased to 13.1% during the 6th to 10th year from the average before the FTA enforcement (10.0%).

〈Table 3〉 Trade volumes before and after the treaty

in \$100 million, %

Category	Average before treaty (A)	FTA enforcement					Changes		
		1 st year (2012)	5 th year (2016)	10 th yr (B) (2021)	Avg. in 1 st –5 th yr (C)	Avg. in 6 th –10 th yr (D)	B/A	D/A	D/C
Imports	59.4 (25.2)	65.4 (22.2)	68.9 (23.0)	103.2 (24.6)	68.6 (22.5)	90.7 (25.5)	73.8	52.7	32.2
Exports	4.0 (10.0)	4.8 (8.4)	7.2 (11.1)	12.6 (14.8)	5.9 (9.7)	9.8 (13.1)	214.7	143.6	65.9
Balance	-55.4	-60.6	-61.7	-90.5	-62.7	-80.9	-63.6	-46.1	-29.0

Note 1) The time span of the average before the treaty enforcement is between 2007 and 2011. The time span of the average in the 1st–5th year is between 2012–2016, while that of the average in the 6th–10th year is between 2017 and 2021.

2) The numbers in parentheses refer to the ratios of imports from the U.S. (exports to the U.S.) in total imports (exports).

3) The trade balance is the difference between exports and imports. There may be a gap in the total due to rounding off.

Source: KTSPI.

Imports and exports of agricultural and livestock products in the 6th–10th year increased compared with the average before the enactment. Imports of forest products declined but their exports grew.

Imports of agricultural products in the 6th–10th year reached \$5.52 billion, up 31.6% from the average before the treaty, with livestock products up 195.5% to \$2.82 billion. The largest increases came from beef, pork, cheese, orange, grape, potato, cherry, and lemon (see Table 4).

- Imports of beef stood at \$1.74 billion, up 427.1% from the average before the treaty enforcement, with pork up 92.8% to \$530 million and cheese up 261.7% to \$250 million. The ratio of the U.S. products in the total imports increased, too.
- Imports of oranges from the U.S. amounted to \$220 million, up 69.4% from the average before the treaty enforcement, with grapes up 93.4% to \$65.12 million. The percentage of the U.S. products in total imports increased, too.
- Although imports of potatoes (\$130 million), cherries (\$120 million), and lemons (\$32.94 million) increased significantly, the share of the U.S. products in total imports dropped from the average before the treaty enforcement.

(Table 4) Changes in imports from the U.S.

in million dollars

Category	Avg. before FTA (A)	FTA enforcement					Changes			U.S. %		
		1 st yr ('12)	5 th yr ('16)	10 th yr ('21)	Avg. 1 st -5 th yr (C)	Avg. 6 th -10 th yr (D)	B/A	D/A	D/C	Avg. before enforce.	Avg. 6 th -10 th	
Total	4,196	4,340	4,349	6,167	4,358	5,523	47.0	31.6	26.7	29.6	26.6	
Agricultural products	Maize	1,717	931	832	842	799	866	-51.0	-49.5	8.4	77.9	38.1
	Wheat	453	764	291	559	456	395	23.4	-12.8	-13.3	38.4	36.8
	Soybean	269	310	290	319	328	335	18.7	24.5	2.2	43.2	54.2
	Orange	127	241	226	194	214	215	52.5	69.4	0.7	71.5	83.7
	Potato	56	97	124	140	119	133	151.2	138.9	12.2	76.9	67.8
	Cherry	35	84	112	118	107	123	237.7	252.7	14.7	90.4	77.8
	Coffee	22	39	61	112	42	93	417.7	330.6	120.7	6.6	13.0
	Wine	14	17	22	91	21	47	568.8	247.9	129.0	10.0	14.1
	Grape	34	45	40	61	44	65	82.4	93.4	48.5	22.9	30.8
	Chocolate	37	47	38	41	44	39	11.0	7.0	-11.4	30.4	17.7
	Other bakery goods ⁴⁾	27	31	24	35	29	28	28.4	2.3	-5.3	39.3	18.6
Lemon	8	16	32	32	27	33	292.6	305.3	23.0	75.3	65.8	
Total	784	793	717	741	832	718	-5.5	-8.4	-13.7	13.7	10.3	
Forest products	Almond	55	129	174	182	181	172	229.9	212.5	-4.7	99.5	99.6
	Walnut	54	98	85	96	108	94	79.4	75.2	-13.4	97.8	97.1
	Other nuts	2	3	7	16	5	13	789.2	579.1	152.2	99.2	92.8
	Pistachio	2	7	5	12	8	9	474.2	322.0	22.0	76.8	96.1
Total	956	1,411	1,824	3,408	1,669	2,825	256.5	195.5	69.3	24.8	36.4	
Livestock products	Beef	330	522	1,035	2,172	740	1,741	557.7	427.1	135.1	27.1	56.2
	Pork	274	391	393	519	391	528	89.5	92.8	34.9	27.9	31.0
	Cheese	68	141	169	290	210	247	325.0	261.7	17.6	25.9	42.0
	Sausage	18	23	33	41	28	37	124.4	99.3	33.8	85.7	92.4
	Whey ⁵⁾	18	23	10	17	18	13	-5.9	-24.6	-25.2	14.3	8.7
	Butter	1	5	3	13	5	9	961.8	621.2	62.5	3.7	9.7
	Skim milk powder	1	7	12	12	17	15	866.7	-	-13.7	3.0	29.2

Note 1) The time span of the average before the treaty enforcement is between 2007 and 2011. The time span of the average in the 1st-5th year is between 2012-2016, while that of the average in the 6th-10th year is between 2017 and 2021. The shares of U.S. products are 5-year averages of the yearly ratios of the U.S. products to the total imports.

2) Agricultural items include those with the imported sum of over \$30 million, with livestock items over \$10 million and forest items over \$10 million (stone and wooden items excluded).

3) In the category of changes, “-” refers to no changes or more than 1,000%.

4) Other bakery goods include bread, pies, cakes, biscuits, communion wafers, empty capsules for pharmaceutical use, sealing wafers, and rice paper.

5) Whey is a natural part of milk, with fat and casein removed. It is used for meat products or as an additive for animal feed.

Source: KTSPI: Customs Law Information Portal (CLIP).

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Exports of agricultural and livestock products to the U.S. in the 6th–10th year grew across the board, with the largest increases in kimchi, shiitake mushroom, chicken meat, and persimmon (see Table 5).

- Exports of agricultural products amounted to \$830 million, up 129.7% from the average before the treaty, with livestock products up 151.2% to \$54.73 million.
- Exports of kimchi grew 575.2% to \$16.47 million, with shiitake mushroom up 247.9% to \$460,000. Their ratios to the total exports to the U.S. increased, too. Chicken meat started to ship to the U.S. in 2014, with an average of \$4.79 million in the 6th–10th year.
- Exports of pears grew 34.9% to \$32.33 million, with persimmon (forest products) up 502.0% to \$840,000.

〈Table 5〉 Changes in exports to the U.S.

in million dollars

Category	Avg. before FTA (A)	FTA enforcement					Changes			U.S. %	
		1 st yr ('12)	5 th yr ('16)	10 th yr (B) ('21)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C	Avg. before enforce.	Avg. 6 th –10 th
Total	363	441	632	1,080	526	834	197.5	129.7	58.6	10.7	12.7
Agricultural products											
Ramen	20	22	36	81	28	62	306.3	208.6	121.0	14.0	12.0
Other bakery goods	6	6	18	50	12	32	685.4	404.1	177.2	17.6	25.9
Cereal preparations ⁴⁾	11	13	14	44	13	27	304.3	146.9	109.6	26.1	32.5
Pear	24	26	30	31	27	32	28.9	34.9	19.3	47.6	43.4
Kimchi	2	4	6	28	5	16	–	575.2	224.9	2.7	13.2
Biscuit	15	19	27	27	23	28	80.0	84.1	21.9	21.3	22.6
Instant noodle	3	6	7	26	6	16	826.4	470.2	142.9	18.3	29.4
Bread	3	6	11	25	9	18	730.7	483.6	96.9	11.9	42.3
Ice cream	3	5	7	16	6	10	377.5	186.7	64.9	22.8	18.9
Red ginseng extract	3	5	8	16	6	10	378.9	200.7	58.1	34.1	28.1
Preparations of coffee	5	8	9	15	8	13	217.3	176.5	58.3	2.2	4.6
Red pepper paste	5	8	10	14	9	12	186.8	150.7	31.4	34.4	29.8
Soju	9	9	11	13	10	13	42.1	43.8	31.9	7.8	14.7
Noodle	10	12	12	13	12	12	25.5	21.5	1.3	39.7	40.6

Category	Avg. before FTA (A)	FTA enforcement					Changes			U.S. %		
		1 st yr ('12)	5 th yr ('16)	10 th yr (B) ('21)	Avg. 1 st -5 th yr (C)	Avg. 6 th -10 th yr (D)	B/A	D/A	D/C	Avg. before enforce.	Avg. 6 th -10 th	
Total	16.7	16.4	48.1	113.1	30.0	89.5	578.5	436.8	198.5	5.7	20.2	
Forest products	Chestnut	2.46	2.37	2.56	1.90	2.83	1.98	-22.6	-19.3	-30.1	8.4	10.9
	Persimmon ⁵⁾	0.14	0.81	0.48	0.89	0.50	0.84	539.3	502.0	67.0	53.1	23.2
	Shiitake	0.13	0.20	0.29	0.79	0.34	0.46	500.6	247.9	35.5	2.8	27.1
Total	21.8	26.9	35.3	70.3	33.7	54.7	222.6	151.2	62.6	6.6	11.9	
Livestock products	Evaporated milk	0.8	1.5	2.2	7.0	1.8	3.8	793.4	378.3	107.0	58.5	32.5
	Chicken meat	0.0	0.0	2.9	5.9	1.5	4.8	-	-	218.0	0.0	11.3

Note 1) The time span of the average before the treaty enforcement is between 2007 and 2011. The time span of the average in the 1st-5th year is between 2012-2016, while that of the average in the 6th-10th year is between 2017 and 2021. The shares of U.S. products are 5-year averages of the yearly ratios of the U.S. products to the total imports.

2) Agricultural items include those with the exported sum of over \$10 million, with livestock items over \$5 million and forest items over \$700,000 (stone and wooden items excluded).

3) In the category of changes, “-” refers to no changes or more than 1,000%.

4) Cereal preparations refer to prepared foods by swelling or roasting grains, such as corn flakes, and other processed grains.

5) Persimmon (forest products) refers to persimmons dried in the sun or by tunnel drying.

Source: KTSPI; Customs Law Information Portal (CLIP).

Imports of fresh agricultural and livestock products from America grew in the 6th-10th year, with their proportions to the total imports increasing. Some items’ import volumes and ratios expanded despite import price hikes.

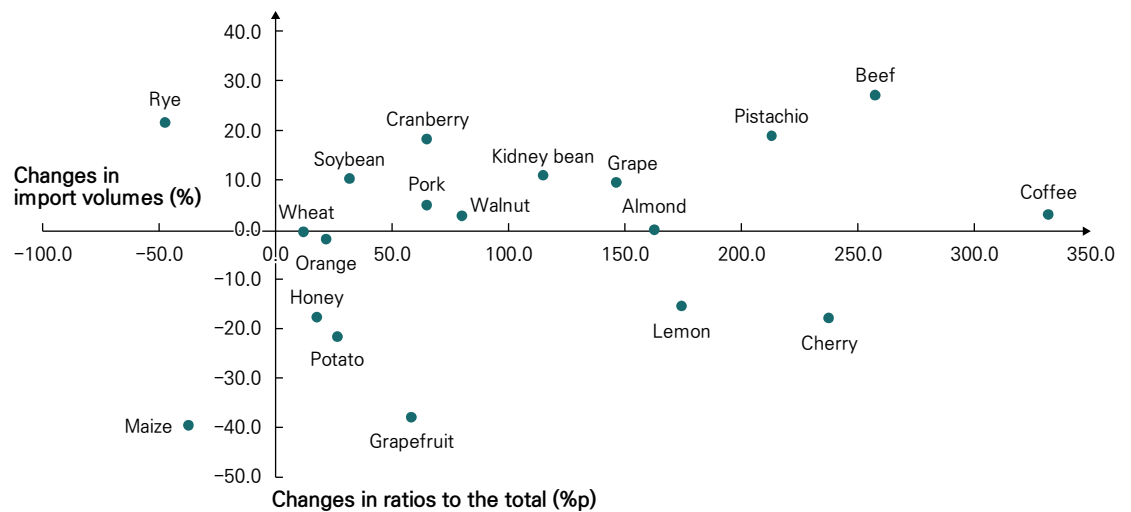
Imports of U.S. beef, pork, grape, soybean, kidney bean, coffee, walnut, and pistachio increased with their ratios in the total imports rising. In the case of U.S. cherry, lemon, grapefruit, potato, and natural honey, their ratios decreased from the averages before the enactment.

- U.S. beef and pork imported in the 6th-10th year increased by 256.9% and 64.8% compared with their averages before the treaty. Their ratios to the total imports grew 27.5%p and 5.1%p.
- During the same period, soybean and kidney bean imported from America grew by 31.5% and 114.7%, while their proportions to the total imports rose 10.6%p and 11.1%p.
- In the case of cherry, lemon, and grapefruit, their ratios of imports from the U.S. decreased by 17.8%p, 15.3%p, and 37.7%p as Korea expanded its imports from Chile, the EU, and South Africa.

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- The ratios of potato and natural honey imported from the U.S. dropped by 21.6%p and 17.5%p, as the nation increased their imports from other countries, such as Australia, Argentina, Canada, and New Zealand.

〈Figure 1〉 20 agricultural and livestock products imported from U.S.: Import volumes and ratios



Note 1) The changes in import volumes and the changes in ratios to the total are obtained by comparing the averages before the treaty (2007–2011) and the averages of the 6th–10th year after the enforcement. As cranberry was not imported before the FTA, the values are obtained by comparing its 2013 data and the average of the 6th–10th year after the enforcement.

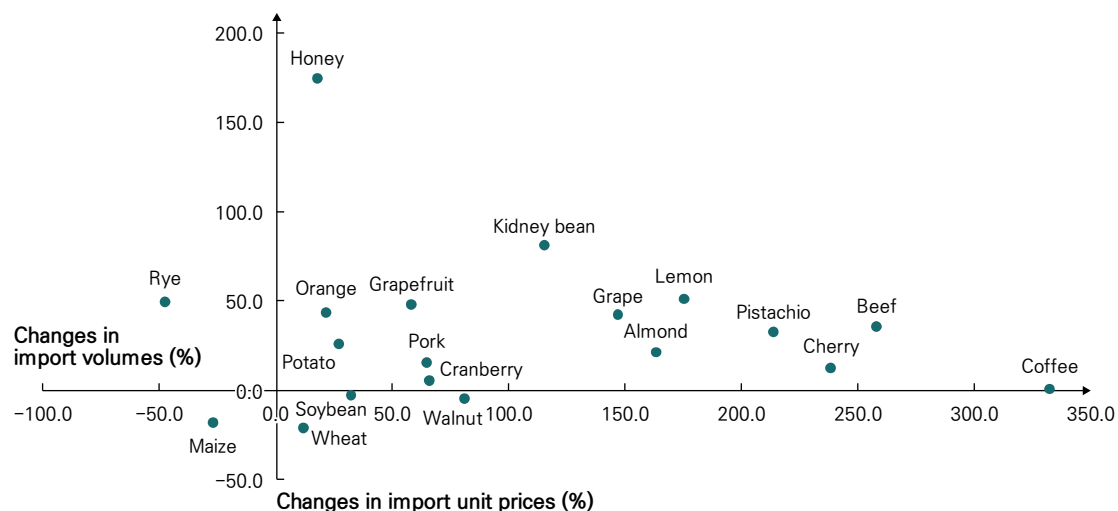
2) Top 20 items are selected in terms of import value from fresh produce category. Avocado's import volume surged 1,000% and is not shown in the figure.

Source: KTSPI.

The average import unit prices of U.S. beef, pork, grape, kidney bean, and almond in the 6th–10th year rose compared with their averages before the treaty. However, their volumes imported from America and their ratios to the total increased.

- During the same period, import unit prices of U.S. beef and pork rose 36.3% and 15.8%.
- Import unit prices of U.S. grapes, kidney beans, and almonds rose 43.1%, 81.5%, and 21.4%.
- The import unit price of U.S. maize declined by 17.4%. However, its import volume and ratio dropped by 37.2% and 39.5%, as Korea turned to Argentina as an alternative source.

〈Figure 2〉 20 agricultural and livestock products imported from U.S.: Import volumes and price changes



Note 1) The changes in import volumes and the changes in import unit prices are obtained by comparing the averages before the treaty (2007–2011) and the averages of the 6th–10th year after the enforcement. As cranberry was not imported before the FTA, the values are obtained by comparing its 2013 data and the average of the 6th–10th year after the enforcement.

2) Top 20 items are selected in terms of import value from fresh produce category. Avocado's import volume surged 1,000% and is not shown in the figure.

Source: KTSPI.

2.2. Analysis of the application of FTA conventional tariffs¹⁾

The conventional tariff utilization rate for imports from the U.S.²⁾ and that for Korea's exports to the U.S.³⁾ have increased since the FTA enforcement. The rates are remarkably high in livestock trade.

The rate for imports from the U.S. in the 10th year (2021) stood at 71.6%, up 26.5%p from the 1st year, with livestock products at 95.9%, forest products at 80.4%, and agricultural products at 57.1% (see Table 6).

- The average of the rates for imports in the 6th–10th year amounted to 71.2%, up 26.1%p from the 1st year and 8.6%p from the average of the rates in the 1st–5th year.
- The average rate of beef, pork, and cherry in the 6th–10th year surged to 100.0%, with orange at 92.9%, grape at 98.9%, potato at 97.8%, and cheese at 99.7%.
- The 5-year average rate of orange rose 8.1%p from the previous 5-year average, with beef and pork up 3.3%p and 5.6%p.

1) Conventional tariff utilization rate refers to the proportion of trade value benefited from tariff decreases (based on conventional tariffs) in the whole trades subject to the treaty. The rate is used to evaluate if the treaty is utilized efficiently in product trade.

2) Conventional tariff utilization rate for import (%): Import value benefited from tariff decrease / imports of items subject to the treaty × 100

3) Conventional tariff utilization rate for export (%): Export value reported based on issuance of the certificate of origin / exports of items subject to the treaty × 100

(Table 6) FTA conventional tariffs applied to agricultural and livestock products imported from the U.S.

(%)

Category	FTA enforcement					Changes (%p)		
	1 st yr (A) (’12)	5 th yr (’16)	10 th yr (B) (’21)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B–A	D–A	D–C
Total	45.2	68.3	71.6	62.6	71.2	26.5	26.1	8.6
Sub-total	36.2	54.2	57.1	49.8	56.4	21.0	20.3	6.7
Agricultural products	Maize	0.5	10.6	15.0	7.6	14.9	14.5	7.3
	Wheat	52.2	99.9	73.8	81.3	86.8	21.7	34.7
	Soybean	1.3	7.0	7.0	5.1	6.3	5.8	5.0
	Orange	70.9	89.0	97.0	84.7	92.8	26.1	21.9
	Potato	77.3	99.4	98.6	95.5	97.8	21.4	20.5
	Cherry	99.1	99.9	100.0	99.7	100.0	0.9	0.9
	Coffee	59.3	98.1	98.6	85.1	98.8	39.3	39.5
	Wine	79.0	93.1	93.2	90.9	93.7	14.1	14.7
	Grape	90.7	97.8	98.7	96.9	98.9	8.0	8.2
	Lemon	80.3	98.6	98.0	96.4	98.5	17.7	18.1
Sub-total	52.9	79.5	80.4	72.0	80.7	27.5	27.9	8.7
Forest products	Almond	87.2	99.9	99.9	98.1	99.9	12.7	12.7
	Walnut	77.3	99.9	98.4	95.8	99.3	21.1	22.0
	Other nuts	77.9	87.3	99.6	93.2	99.6	21.7	21.7
	Pistachio	85.1	99.0	99.6	96.3	99.5	14.5	14.4
Sub-total	70.1	98.4	95.9	92.5	97.9	25.8	27.8	5.4
Livestock products	Beef	77.2	99.9	100.0	96.7	100.0	22.8	22.8
	Pork	72.5	99.9	100.0	94.4	100.0	27.5	27.5
	Cheese	70.3	99.4	99.9	95.4	99.7	29.6	29.4
	Butter	33.5	89.4	89.8	86.0	86.9	56.2	53.4
	Skim milk powder	50.9	91.1	66.5	74.7	64.7	15.6	13.8

Note 1) The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is the arithmetic mean between 2017 and 2021.

2) The items here are those in Table 4, excluding some processed ones.

3) Numbers in the changes category are rounded to the nearest tenth. Thus, their total may be more or less than 100%.

Source: KTSPI: CLIP.

The utilization rate of FTA conventional tariffs for exports to the U.S. in the 10th year was 49.5%, up 6.5%p from the 1st year. Livestock products took the largest portion with 70.7%, followed by agricultural and forest products with 50.8% and 23.7% (see Table 7).

- The average utilization rate of FTA conventional tariffs for exports to the U.S. in the 6th–10th year posted 48.0%, up 5.0%p from the 1st year and 1.2%p from the average in the 1st–5th year.

- By item, ramen topped the ranking with 94.8%, followed by soju with 95.4%, red ginseng extract with 86.4%, chicken meat with 63.6%, and red pepper paste with 62.8%.
- The utilization rates of conventional tariffs for ramen, red ginseng extract, and soju exported to the U.S. in the 6th-10th year were up 20.3%p, 24.9%p, and 33.9%p from the previous five-year averages. Of livestock products, chicken meat sharply grew by 57.6%p.
- During the same period, the utilization rates for chestnut and persimmon decreased by 23.5%p and 15.5%p to 36.8% and 59.5%

(Table 7) FTA conventional tariffs applied to exports to the U.S.

(%)

Category	FTA enforcement					Changes (%p)		
	1 st yr (A) (‘12)	5 th yr (‘16)	10 th yr (B) (‘21)	Avg. 1 st -5 th yr (C)	Avg. 6 th -10 th yr (D)	B-A	D-A	D-C
Total	42.9	48.5	49.5	46.8	48.0	6.5	5.0	1.2
Sub-total	40.1	47.1	50.8	44.8	48.2	10.7	8.1	3.4
Agricultural products								
Ramen	49.6	85.3	92.0	74.5	94.8	42.4	45.2	20.3
Pear	42.7	70.1	55.9	53.1	52.8	13.3	10.1	-0.3
Kimchi	26.1	19.2	65.6	45.6	48.5	39.5	22.3	2.8
Biscuit	54.3	50.0	35.4	57.5	45.4	-18.9	-8.9	-12.1
Instant noodle	18.8	56.9	76.2	39.3	65.0	57.4	46.2	25.7
Bread	23.1	30.3	45.8	26.6	40.9	22.6	17.8	14.3
Ice cream	35.6	11.6	10.6	15.0	11.9	-25.1	-23.7	-3.1
Red ginseng extract	46.2	89.9	88.1	61.5	86.4	41.9	40.1	24.9
Coffee preparations	42.2	59.4	26.5	63.6	22.3	-15.8	-19.9	-41.3
Red pepper paste	28.4	54.7	68.9	46.2	62.8	40.6	34.5	16.6
Soju	36.2	94.5	95.0	61.5	95.4	58.8	59.2	33.9
Noodle	45.8	58.6	61.3	52.3	58.3	15.5	12.5	5.9
Sub-total	51.9	47.8	23.7	50.6	29.5	-28.2	-22.4	-21.1
Forest products								
Chestnut	85.2	83.0	40.3	60.3	36.8	-44.9	-48.4	-23.5
Persimmon (forest products)	84.5	65.8	73.6	74.9	59.5	-10.9	-25.0	-15.5
Shiitake	61.7	16.5	47.8	27.8	34.5	-13.9	-27.3	6.6
Sub-total	83.4	74.9	70.7	73.4	74.4	-12.7	-9.0	1.0
Livestock products								
Evaporated milk	42.7	9.5	0.6	12.3	0.3	-42.1	-42.4	-12.0
Chicken meat	0.0	2.7	79.7	6.0	63.6	79.7	63.6	57.6

Note 1) The average in the 1st-5th year is the arithmetic mean between 2012-2016, while the average in the 6th-10th year is the arithmetic mean between 2017 and 2021.

2) The items here are those in Table 4, excluding some processed ones.

3) Numbers in the changes category are rounded to the nearest tenth. Thus, their total may be more or less than 100%.

Source: KTSPI; CLIP.

2.3. Analysis of TRQ fill rates and ASG

The average of tariff rate quota (TRQ) fill rates for 16 items reached around 50%, relatively lower than expected.

Cheese, natural honey, orange, soybean, and forage plants posted high fill rates, while skim milk/whole milk powder, prepared dry–milk, corn starch, potato, barley, malt/malting barley, and dextrine were on the lower side (see Table 8).

- Fill rates of cheese, orange, soybean, and natural honey exceeded 90% on average.
- As the import source of prepared dry–milk shifted to the EU and New Zealand, there was no import record subject to TRQ for the item. As whey and butter had no TRQ limits, they also had no import record subject to TRQ.
- In the case of skim milk/whole milk powder, potato, barley, and malt/malting barley distributed via aT, New Zealand was the major source for skim milk/whole milk powder, while Australia for barley, malt/malting barley. Korean importers did not have demand for those items from the U.S., so their fill rates were relatively low.

(Table 8) TRQ for imports from the U.S. and fill rates

in tons, %

Category		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Skim milk/ whole milk powder	Import volume	901	5,143	5,306	4,962	5,624	5,796	5,967	4,653	2,807	3,314
	Fill rate	18.0	99.9	100.0	90.8	99.9	100.0	99.9	75.7	44.3	50.8
Cheese	Import volume	6,798	7,165	7,300	7,538	7,784	8,062	8,327	8,564	8,812	9,048
	Fill rate	97.1	99.4	98.3	98.6	98.8	99.3	99.6	99.5	99.4	99.1
Natural honey	Import volume	200	205	212	186	225	232	239	246	235	259
	Fill rate	99.8	99.5	99.9	84.9	100.1	100.0	100.0	100.0	92.7	99.1
Prepared dry–milk	Import volume	15	17	0	8	0	0	0	0	0	0
	Fill rate	2.2	2.3	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Corn starch	Import volume	30	53	133	79	79	126	309	109	277	325
	Fill rate	0.3	0.5	1.3	0.7	0.7	1.1	2.6	0.9	2.2	2.5
Orange	Import volume	520	2,587	2,386	2,570	2,903	2,865	2,391	3,335	2,638	3,425
	Fill rate	20.8	100.0	90.0	94.1	100.0	98.9	80.1	100.0	83.3	100.0

Category		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Potato	Import volume	609	0	0	0	104	1,423	1,660	228	255	1,249
	Fill rate	20.3	0.0	0.0	0.0	3.1	40.9	46.3	6.2	6.7	31.9
Edible whey	Import volume	2,065	2,951	2,557	2,840	2,384	2,576	2,423	1,997	2,394	-
	Fill rate	68.8	95.5	80.3	86.6	70.6	74.1	67.6	54.1	63.0	-
Edible soybean	Import volume	3,453	12,046	23,652	25,295	26,510	27,284	27,998	29,105	29,841	30,401
	Fill rate	34.5	60.2	94.6	98.2	100.0	99.9	99.5	100.0	100.0	98.9
Forage plants	Import volume	196,586	198,193	199,753	200,091	198,302	195,039	200,001	198,532	198,294	199,870
	Fill rate	98.3	99.1	99.9	100.0	99.2	97.5	100.0	99.3	99.1	99.9
Supp. feed	Import volume	5,260	5,627	5,686	5,514	5,399	5,318	5,290	5,887	5,366	4,652
	Fill rate	95.6	99.3	97.4	91.7	87.2	83.4	80.6	87.0	77.0	64.8
Barley	Import volume	1,290	1,682	1,126	1,531	723	1,357	870	1,908	1,237	1,512
	Fill rate	51.6	66.0	43.3	57.7	26.7	49.2	30.9	66.4	42.2	50.6
Butter	Import volume	187	206	212	111	195	209	239	246	191	-
	Fill rate	93.5	100.0	100.0	50.6	86.7	90.2	100.0	99.9	75.5	-
Malt/malting barley	Import volume	815	4,363	6,373	1,718	1,155	3,127	7,633	6,751	1,191	1,407
	Fill rate	9.1	47.5	68.1	18.0	11.9	31.5	75.3	65.3	11.3	13.1
Dextrine	Import volume	188	1,123	1,332	1,369	1,675	2,209	3,084	3,218	4,069	3,793
	Fill rate	1.3	7.8	9.0	8.9	10.6	13.6	18.4	18.7	22.9	20.8
Avg. TRQ fill rate		44.5	61.1	61.4	55.1	56.0	61.2	62.6	60.8	51.2	45.7

Note 1) The import volume refers to the amount subject to TRQ. The TRQ fill rate refers to the used amount out of the baseline.

2) As there was no bidding for import right of ginseng, it had no record of TRQ imports in 2012–2021. Thus, ginseng is excluded from Table 8 items.

3) The average of TRQ fill rates refers to the average of each item's fill rates.

4) The shaded part indicates TRQ fill rates of 90% or higher.

5) Edible whey is a by-product of the cheese-making process—natural leftovers after removing fat and casein.

Source: KTSPI; Korea Agro-Fisheries & Food Trade Corporation (aT); Annex to the Korea-U.S. FTA (<https://www.fta.go.kr/us/doc/1/>).

Of the items subject to the FTA agricultural safeguards (ASG), the ASG was activated for 5 items.

The ASG was activated for more than 4 years in the case of U.S. soybean, popcorn, maize, and buckwheat, while it was activated for two times in the case of grains and pulverized grains (see Table 9).

- Primary and intermediate safeguard triggers were activated for buckwheat and soybean until 2015, then the primary level applied after 2016. The intermediate-level tariffs of

15% and tariffs for the primary trigger were applied in 2015 for buckwheat and soybean. After 2016, the primary-trigger rates were applied, with 172% to buckwheat, 409% to mung bean, and 283% to adzuki bean as of 2021.

- Besides, the safeguard measures were activated for popcorn (2012–2015), maize (2014–2017), and grains/pulverized grains (2017, 2021).

(Table 9) Agricultural safeguard measures activated

		in tons									
Category		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bean (Mung, adzuki)	Primary trigger	238	298	357	417	476	500	524	547	571	595
	Quota fill (excess volume)	-	-	-	○(-)	○(22)	○(-)	○(-)	○(-)	○(-)	
	Intermediate trigger	119	186	268	364	-	-	-	-	-	-
	Quota fill (excess volume)	-	-	-	○(53)	-	-	-	-	-	-
Popcorn	Intermediate trigger	2,556	3,994	5,751	7,828	-	-	-	-	-	-
	Quota fill (excess volume)	○(-)	○(-)	○(9)	○(37)	-	-	-	-	-	-
Maize (Others)	Primary trigger	187,547	234,434	281,321	328,207	375,094	393,849	412,603	-	-	-
	Quota fill (excess volume)	-	-	-	-	○(-)	○(-)	-	-	-	-
	Intermediate trigger	93,774	146,521	210,990	287,181						
	Quota fill (excess volume)	-	-	○(41)	○(23)						
Buckwheat	Primary trigger	250	313	375	438	500	525	550	575	600	625
	Quota fill (excess volume)	-	-	-	-	○(450)	○(15)	○(225)	○(113)	○(179)	○(278)
	Intermediate trigger	125	195	281	383	-	-	-	-	-	-
	Quota fill (excess volume)	-	-	-	○(55)	-	-	-	-	-	-
Grains/ pulverized grains	Primary trigger	128	136	145	154	163	173	184	196	208	221
	Quota fill (excess volume)	-	-	-	-	-	○(17)	-	-	-	○(-)

Note 1) The activation status of the Korea–U.S. FTA ASG includes cases where safeguards were triggered.

2) The quota fill category indicates whether the quota is filled up and the number in the parentheses refers to the imported volume exceeding ASG trigger levels.

Source: Ministry of Trade, Industry and Energy's FTA website (<https://www.fta.go.kr/main/>); KTSPI (data processed by the authors).

03

Changes in trades of major products

3.1. Livestock products

3.1.1. Beef

The imports of beef from the U.S. increased after the FTA enforcement, with a surge in its domestic market share.⁴⁾

The imported volume of beef in the 10th year (2021) amounted to 259,000 tons, up 293.5% from the average before the treaty (see Table 10).

- The average import volume in the 6th-10th year posted 235,000 tons, up 256.9% from the average before the treaty enactment due to the base effect of the 2008 bovine spongiform encephalopathy (BSE) outbreak. The figure also rose by 94.9% from the average of the 1st-5th year.
- Beef imports have increased due to rising homegrown beef prices, eased sentiment against U.S. beef, and growing demand for beef in Korea.
- U.S. beef unit prices increased continuously. The average of the 6th-10th year stood at \$7.36 per kg, up 36.3% from the average before the treaty and 20.4% from the previous 5-year average.

〈Table 10〉 Changes in U.S. beef imports and prices

in thousand tons, \$/kg

Category	Before-treaty avg. (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st -5 th yr (C)	Avg. 6 th -10 th yr (D)	B/A	D/A	D/C
Import volume	66	106	169	259	121	235	293.5	256.9	94.9
General rate	1	0	0	0	0	0	-100.0	-	-
WTO conventional tariff (high rates)	3	2	0	0	0	0	-100.0	-	-

4) Seoul and Washington agreed to abolish the baseline rate of 40% for 15 years, while agricultural safeguard measures (ASG) were applied to carcasses/half-carcasses (refrigerated/frozen) and cuts of meat (refrigerated/frozen). The ASG trigger levels were 270,000 tons for the 1st year while increasing by 6,000 tons per year afterward until 354,000 tons in the 15th year. The ASG trigger rate applied to the 1st-5th year is 40%; the 6th-10th year, 30%; and the 11th-15th year, 24%.

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Category	Before-treaty avg. (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Out-quota rate (Not recommended by MAFRA)	61	21	0	0	4	0	-100.0	-	-99.9
FTA conventional tariff (Option 1)	0	82	168	259	116	235	-	-	102.9
Import unit price	5.40	4.94	6.14	8.38	6.11	7.36	55.2	36.3	20.4

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Beef imports include fresh, refrigerated, frozen, and offal meat.

3) FTA conventional tariff (Option 1) refers to the rate lowered following the FTA.

4) The total import volume and the combined volumes of individual items may be different due to rounding. The import unit price is calculated based on the total import volume.

Source: Data processed from KTSPI data.

U.S. beef's domestic market share surged to 32.8% in the 6th–10th year from 14.3% before the treaty (see Table 11).

- Domestic beef's market share continued at the lower 40% level until 2015 but declined to 33.8% in 2018 due to increased imports from the U.S. and the government's programs for reducing cow numbers (2012–2013) and business closures (2013–2014). Recently, the domestic beef share is overtaking the U.S. portion as domestic farmers have grown more cattle due to beef price hikes.
- U.S. beef's share in the domestic market stayed low due to the BSE outbreak. Recently, its share has expanded as Korean consumers' repulsion to U.S. beef has eased amid rising demand for refrigerated beef.
- The ratio of American beef to the total beef imports was lower than Australia's proportion until 2016. However, beef imports from the U.S. overtook those from Australia, with the former at 51.3% and the latter at 39.1% in 2021.

〈Table 11〉 U.S. beef's market share in Korea

in thousand tons

Category	Avg. before treaty	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	459	533	558	574	582	631	653	690	726	730	769
Domestic output (B)	189	234	260	261	255	231	239	237	245	249	264
(%, B/A)	(41.2)	(44)	(46.6)	(45.5)	(43.8)	(36.6)	(36.6)	(34.3)	(33.8)	(34.1)	(34.3)

Category	Avg. before treaty	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total imports (C)	271	299	301	315	331	403	414	454	481	482	505
U.S. (D)	66	106	101	112	115	169	190	224	248	254	259
(%, D/A)	(14.3)	(19.9)	(18.2)	(19.5)	(19.8)	(26.7)	(29.1)	(32.5)	(34.1)	(34.8)	(33.7)
(%, D/C)	(24.3)	(35.4)	(33.7)	(35.4)	(34.8)	(41.8)	(45.9)	(49.4)	(51.5)	(52.7)	(51.3)
Australia	160	156	166	173	189	198	190	195	197	191	197
New Zealand	40	33	30	27	23	27	23	25	21	20	25
Others	5	4	3	4	3	9	11	10	15	17	23
Total exports (E)	1.3	0.7	3.0	2.2	4.0	3.7	0.3	0.5	0.2	0.3	0.2

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Beef imports include frozen, refrigerated, and fresh meat.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

5) Domestic output in 2021 is an estimate by KREI.

6) The total import volume may be different from the combined volumes of imports from individual countries due to rounding.

Source: KTSPI; Statistics Korea; KREI (2022).

3.1.2. Pork

The imported volume of U.S. pork increased after the treaty enforcement. However, its market share in Korea rose slightly.⁵⁾

In the 10th year (2021), the imported volume amounted to 158,000 tons, 46.0% up from the average before the FTA (see Table 12).

- The average volume in the 6th-10th year amounted to 188,000 tons, up 73.6% from the average before the treaty and 41.3% up from the average of the 1st-5th year.
- When the domestic wholesale price rose due to the foot and mouth disease (FMD) outbreak in 2011-2012, the government temporarily imposed a tariff rate quota.
- Demand for U.S. pork increased in 2014 due to the porcine epidemic diarrhea (PED) outbreak in Korea, resulting in unit price rises in the imported pork. The average unit price in the 1st-5th year amounted to \$2.95 per kg, 20.8% up from the average before the treaty.
- The import unit price on average in the 6th-10th year was \$2.83 per kg, 4.1% down from the average of the previous 5 years. Although the imported volume increased in 2017-2018 due to the outbreak of African swine fever (ASF) in Europe and China, import unit prices of U.S. pork decreased due to price declines in America, tariff drops, and foreign exchange rate falls.

5) The tax rate of 22.5% applicable to refrigerated pork belly was to be abolished for 10 years until 2021. The ASG was to be triggered at 8,250 tons in the 1st year, 13,938 tons in the 10th year (a 6% rise annually). The ASG trigger rate was 22.5% by the 5th year, 15.8% in the 6th year, and 11.3% in the 10th year.

〈Table 12〉 Changes in import volumes and prices of U.S. pork

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Imported volume	108	131	149	158	133	188	46.0	73.6	41.3
General rate	33	7	0	0	1	0	–	–	–99.6
WTO conventional tariff (high rate)	63	11	0	0	2	0	–	–	–99.8
FTA conventional tariff (Option 1)	0	98	149	158	126	188	–	–	48.9
TRQ (recommended, low rate)	12	16	0	0	3	0	–	–	–
Import unit price	2.44	2.98	2.64	3.28	2.95	2.83	34.4	15.8	–4.1

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Pork imports include fresh, refrigerated, frozen, and offal meat.

3) The FTA conventional tariff (Option 1) refers to imposing tariffs after subtracting the range of 40/100 from the baseline rates to promote industrial competitiveness or stabilize domestic prices.

4) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data processed from KTSPI data.

U.S. pork's domestic market share stood at 10.3% before the FTA and rose to 12.3% in the 6th–10th year (see Table 13).

- Despite increased production in Korea, domestic pork's market share declined to 60.3% as imports from the U.S. and Europe surged. Afterward, domestic pork's share rose but dropped again in 2021 due to decreased output in the nation and rising imports.
- The share of U.S. pork to the total pork imports surged to 39.3% in 2020 due to the ASF outbreaks in China and Germany. However, its share decreased because of rising demand in the U.S. market and Korea's increased imports from the EU.

〈Table 13〉 U.S. pork's market shares in Korea

in thousand tons

Category	Avg. before treaty	After the FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	1,054	1,151	1,174	1,222	1,340	1,391	1,436	1,566	1,582	1,541	1,448
Domestic output (B)	695	750	854	830	849	891	904	945	1,013	1,097	989
(%, B/A)	(65.9)	(65.1)	(72.7)	(67.9)	(63.3)	(64.0)	(63.0)	(60.3)	(64.0)	(71.2)	(68.3)

Category	Avg. before treaty	After the FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total imports (C)	367	403	322	394	494	502	533	622	571	449	466
U.S. (D)	108	131	112	121	151	149	170	225	210	176	158
(%, D/A)	(10.3)	(11.4)	(9.5)	(9.9)	(11.2)	(10.7)	(11.8)	(14.4)	(13.3)	(11.4)	(10.9)
(%, D/C)	(29.5)	(32.6)	(34.8)	(30.8)	(30.5)	(29.7)	(31.8)	(36.2)	(36.8)	(39.3)	(33.9)
EU27	144	162	129	199	253	264	278	306	268	191	216
Canada	66	62	43	38	47	42	41	43	45	41	48
Others	48	47	38	35	43	48	44	48	47	40	44
Total exports (E)	7.3	1.3	1.9	1.9	2.2	2.1	1.5	0.9	1.3	4.5	7.7

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Pork imports include frozen, refrigerated, and fresh meat.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

5) Domestic output in 2021 is an estimate by KREI.

6) The total import volume may be different from the combined volumes of imports from individual countries due to rounding.

Source: KTSPI; Statistics Korea; KREI (2022).

3.1.3. Cheese

Cheese imports from the U.S. and their market share in Korea surged as demand increased in Korea after the FTA enforcement due to changes in consumption patterns (lowered consumption of milk drinks).⁶⁾

The import volume in the 10th year (2021) amounted to 68,000 tons, 326.0% up from the average before the treaty (see Table 14).

- The average volume in the 6th-10th year was 59,000 tons, up 269.8% from the average before the treaty and 25.8% from the previous 5-year average, thanks to lower tariffs and zero duty TRQ volumes.
- 85.2% of the total volume in the 6th-10th year was imported based on the FTA conventional tariff (option 1), with the remaining based on the zero duty TRQ.
- The average unit price per kg in the 6th-10th year was \$4.21, 2.2% up from the average before the FTA and 4.3% down from the previous 5-year average.

6) Korea and the U.S. agreed to abolish the tariff rate of 36% applied to U.S. cheese from cheddar for 10 years and others for 15 years, with TRQ applicable to all cheese products. The quota threshold was to be 7,000 tons in the 1st year and 9,133 tons in the 10th year with a 3% increase per year, and the threshold to be removed in the 15th year (2026).

<Table 14> Changes in imports and prices of U.S. cheese

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Imported volume	16	32	40	68	47	59	326.0	269.8	25.8
General rate (36%)	8	4	0	0	1	0	-99.3	-98.3	-86.9
WTO conventional tariff (high rate)	6	1	0	0	0	0	-	-	-
FTA conventional tariff (TRQ)	0	7	8	9	7	9	-	-	17.0
FTA conventional tariff (Option 1)	0	16	32	58	37	50	-	-	34.1
FTA conventional tariff (recommended, low rate)	2	4	0	0	1	0	-	-	-
Import unit price	4.31	4.41	4.22	4.29	4.40	4.21	-0.3	-2.2	-4.3

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Cheese imports include fresh cheese and cheese for processing.

3) FTA conventional tariff (TRQ) refers to imposing low rates up to a threshold and high rates when exceeding it. FTA conventional tariff (Option 1) refers to lowered rates following the FTA.

4) FTA conventional tariff (recommended, low rate) refers to lowered rates following the FTA. It is applied to mozzarella, cheddar, and gouda cheese.

5) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data processed from KTSPI data.

The market share in Korea rose to 33.1% in the 6th–10th year from 19.5%, the average before the FTA (see Table 15).

- The market share of homemade cheese recorded 30.6% before the treaty and declined to 17.3% in 2015. Although the share rebounded, it failed to recover to the previous level.
- The share of American cheese imports rose to 65.7% in 2014 from 28.0% before the treaty. As imports from the EU surged after 2015, the U.S. share declined to 43.2% in 2021.

<Table 15> Changes in U.S. cheese imports and market shares in Korea

in thousand tons

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	81	100	107	121	134	138	160	161	172	192	200
Domestic output (B)	25	23	22	24	23	29	35	37	41	45	45
(%, B/A)	(30.6)	(22.5)	(20.9)	(19.7)	(17.3)	(20.9)	(22.0)	(23.2)	(24.1)	(23.3)	(22.3)

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total imports (C)	57	78	85	97	112	110	125	124	131	148	157
U.S. (D)	16	32	43	64	55	40	49	53	61	62	68
(%, D/A)	(19.5)	(31.9)	(39.6)	(52.9)	(40.8)	(28.9)	(30.7)	(33.2)	(35.6)	(32.2)	(33.8)
(%, D/C)	(28.0)	(41.1)	(50.0)	(65.7)	(49.2)	(36.5)	(39.2)	(43.1)	(46.8)	(41.8)	(43.2)
EU27	6	11	11	16	32	45	44	39	40	51	52
New Zealand	18	24	24	10	16	17	20	22	20	26	28
Others	16	10	8	7	9	8	12	10	10	9	9
Total exports (E)	0.1	0.1	0.2	0.2	0.5	0.4	0.3	0.3	0.5	0.7	1.3

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Cheese imports include fresh cheese and cheese for processing.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

5) Domestic output includes natural and processed cheese based on statistics by the Korea Dairy Committee.

6) The total import volume may be different from the combined volumes of imports from individual countries due to rounding.

Source: KTSPI; Statistics Korea; KREI (2022).

3.2. Food crops

3.2.1. Wheat

Korea's imports of U.S. wheat slightly increased after the treaty took effect. Its market share in Korea declined but started to rise in 2017 as a replacement to feed wheat from Ukraine.⁷⁾

Wheat imports from America amounted to 1.814 million tons in the 10th year (2021), 39.8% up from the average before the FTA (see Table 16).

- Its average volume in the 6th-10th year rose 11.7% from the average before the treaty and 2.1% from the previous 5-year average to 1.45 million tons.
- American wheat was imported based on the general rate and TRQs before the FTA enforcement. Afterward, the FTA conventional rate was imposed. In 2012, the government imported 276,000 tons of wheat for milling based on TRQs to stabilize food prices.
- The unit price per kg in the 6th-10th year was \$0.27, 21.9% down from the average before the treaty and 15.0% down from the previous 5-year average.

7) The base rate of 1.8% was immediately abolished for wheat for feeding and milling. The rate of 4.2% imposed on flour was removed after 5 years.

(Table 16) Changes in imports and prices of U.S. wheat

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Import volume	1,298	2,401	1,117	1,814	1,420	1,450	39.8	11.7	2.1
General rate (36%)	351	962	1	553	234	216	57.3	-38.4	-7.6
WTO conventional tariff (high rate)	82	1	0	0	0	0	-100.0	-100.0	-100.0
FTA conventional tariff (Option 1)	-	1,162	1,116	1,262	1,130	1,233	-	-	9.1
TRQ (recommended, low rate)	865	276	0	0	55	0	-100.0	-100.0	-100.0
Import unit price	0.35	0.32	0.26	0.31	0.32	0.27	-11.7	-21.9	-15.0

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Wheat imports include wheat/flour for feeding and milling.

3) FTA conventional tariff (Option 1) refers to lowered rates following the FTA.

4) TRQ refers to imposing tariffs after subtracting the range of 40/100 from the baseline rates to promote industrial competitiveness or stabilize domestic prices.

5) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data processed from KTSPI data.

American wheat's market share in Korea decreased after the FTA went into effect. However, its share has risen since 2017 (see Table 17).

- The market share declined to 24.9% in 2016 from 34.0%, the average before the FTA. However, its proportion has risen as Korea sought replacements in the U.S., Europe, and Canada for Ukraine's feed wheat and America increased wheat harvests.
- Korea's wheat output increased from 24,000 tons before the treaty to 37,000 tons in 2012. However, wheat production and the market share decreased after 2017.

(Table 17) U.S. wheat's market share in Korea

in thousand tons

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	3,819	5,707	4,708	3,779	4,069	4,476	4,246	3,870	3,732	3,692	4,409
Domestic output (B)	24	37	19	23	26	39	37	26	15	17	17
(%, B/A)	(0.6)	(0.6)	(0.4)	(0.6)	(0.6)	(0.9)	(0.9)	(0.7)	(0.4)	(0.5)	(0.4)
Total imports (C)	3,807	5,685	4,706	3,775	4,064	4,461	4,243	3,885	3,761	3,721	4,436
U.S. (D)	1,298	2,401	1,139	1,277	1,165	1,117	1,389	1,367	1,239	1,439	1,814
(%, D/A)	(34.0)	(42.1)	(24.2)	(33.8)	(28.6)	(24.9)	(32.7)	(35.3)	(33.2)	(39.0)	(41.2)

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
(%, D/C)	(34.1)	(42.2)	(24.2)	(33.8)	(28.7)	(25.0)	(32.7)	(35.2)	(32.9)	(38.7)	(40.9)
Australia	997	2,293	954	1,023	1,075	1,052	1,092	1,057	1,105	1,038	1,177
EU27	105	1	737	316	608	241	253	8	352	396	736
Others	1,407	990	1,876	1,158	1,216	2,052	1,509	1,453	1,065	848	709
Total exports (E)	11	16	18	19	21	24	34	40	44	46	44

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Wheat imports include wheat and flour for feeding and milling.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

5) Wheat output in 2021 was not announced and we assumed it would be the same as the 2020 data.

Source: KTSPI; Statistics Korea.

3.2.2. Soybean

U.S. soybeans' imported volume surged from the period before the FTA thanks to the TRQ volume increase, and its market share in Korea kept similar before and after the treaty enforcement.⁸⁾

The imported volume in the 10th year (2021) amounted to 546,000 tons, equivalent to the average before the FTA (see Table 18).

- The average volume of the 6th-10th year reached 711,000 tons, 31.0% up from the average before the treaty. 71.7% of the total was imported based on a TRQ.
- Before the FTA came into force, U.S. soybeans were imported through market access in the WTO (soybeans for food) and TRQs (soybeans for oil extracting and defatted soybean meal). TRQ-based soybean meal imports have increased to stabilize animal feed prices.
- TRQ-based soybean imports from the U.S. have increased 59.0% from 18,000 tons on average in the 1st-5th year to 29,000 tons in the 6th-10th year. Imports through WTO market access decreased by 15.8% to 17,000 tons during the same period.
- The average import unit price was \$0.47 per kg in the 6th-10th year, 4.9% down from the average before the treaty and 19.0% down from the previous 5-year average.

8) A low-rate TRQ was to be imposed with 10,000 tons in the 1st year, 20,000 tons in the 2nd year, 25,000 tons in the 3rd year, 25,750 tons in the 4th year, and 26,523 tons in the 5th year, with a 3% increase yearly, on the conditions of the tariff (487%) on U.S. soybeans. The tariff of 487% on oil extract and defatted soybean meal was abolished upon the FTA enforcement.

(Table 18) Changes in U.S. soybean imports and prices

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Imported volume	543	496	622	546	563	711	0.6	31.0	26.3
General rate (36%)	3	0	0	0	0	0	-100.0	-100.0	-99.0
Out-quota rate (not recommended by MAFRA)	1	0	0	0	0	0	-99.9	-55.5	-23.0
Out-quota rate (recommended by MAFRA)	136	186	196	180	202	170	32.5	25.0	-15.8
FTA conventional tariff (TRQ)	–	3	27	30	18	29	–	–	59.0
FTA conventional tariff (Option 1)	–	1	2	0	2	1	–	–	-32.7
FTA conventional tariff (Option 2)	–	0	0	1	1	1	–	–	26.6
TRQ (recommended, low rate)	403	305	397	334	340	510	-17.1	26.5	49.8
Import unit price	0.50	0.63	0.47	0.58	0.58	0.47	18.0	-4.9	-19.0

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Soybean imports include soybeans for food, bean sprouts, oil extracting, and defatted soybean meal.

3) FTA conventional tariff (Option 1) refers to lowered rates following the FTA. Option 2 refers to rate excluding Option 1 rate, when different rates are applicable for one item.

4) TRQ refers to imposing tariffs after subtracting the range of 40/100 from the baseline rates to promote industrial competitiveness or stabilize domestic prices.

5) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data processed from KTSPI data.

U.S. soybeans' market share in Korea was similar to Brazil's portion around the treaty enactment. However, as the imports of soybeans for oil extracting and defatted bean meal from Brazil dropped, America's share in Korea increased temporarily (see Table 19).

- When China expanded its soybean imports from Brazil amid its trade disputes with the U.S. in 2018–2019, Korea's imports from Brazil plummeted, with the U.S. share in the nation rising.
- Domestic soybean output decreased after a peak in 2013 with 154,000 tons. It plunged due to typhoon damages in 2016 and started to increase backed by the government's support for the cultivation of crops other than rice in rice paddies.

<Table 19> U.S. soybeans' market share in Korea

in thousand tons

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	1,338	1,278	1,285	1,417	1,433	1,417	1,389	1,346	1,387	1,424	1,389
Domestic output (B)	124	123	154	139	104	75	86	89	105	81	111
(%, B/A)	(9.3)	(9.6)	(12.0)	(9.8)	(7.2)	(5.3)	(6.2)	(6.6)	(7.6)	(5.7)	(8.0)
Total imports (C)	1,214	1,156	1,133	1,279	1,330	1,343	1,303	1,257	1,282	1,344	1,278
U.S. (D)	543	496	554	610	532	622	586	696	1,075	650	546
(%, D/A)	(40.5)	(38.8)	(43.1)	(43.0)	(37.1)	(43.9)	(42.2)	(51.7)	(77.5)	(45.6)	(39.3)
(%, D/C)	(44.7)	(42.9)	(48.9)	(47.7)	(40.0)	(46.3)	(45.0)	(55.4)	(83.9)	(48.4)	(42.7)
Brazil	484	359	397	466	746	484	496	472	119	613	655
China	159	124	55	75	27	37	42	52	48	42	40
Others	30	177	127	128	25	200	179	37	40	38	37
Total exports (E)	0.206	0.182	1.786	0.436	0.334	0.866	0.047	0.154	0.022	0.212	0.227

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Soybean imports include soybeans for food, bean sprouts, oil extracting, and defatted soybean meal.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

Source: KTSPI; Statistics Korea.

3.2.3. Potato

Potato imports from the U.S. increased around the FTA enforcement. However, after Korea raised imports from Europe and Canada for french fries, America's share in the nation shrank.⁹⁾

Imports from the U.S. posted 97,000 tons in the 10th year, 74.7% up from the average before the treaty (see Table 20).

- The average amount in the 6th-10th year amounted to 107,000 tons, 94.0% up from the average before the treaty and 5.7% up from the previous 5-year figure.
- U.S. imports for french fries and chips increased. Imports of potatoes for chips tend to rise in the period for seasonal tariffs, while imports for french fries keep up around the year.
- Imports for french fries based on the FTA conventional tariff (option 1) increased backed by domestic consumption increases, from 80,000 tons on average in the 1st-5th year to 90,000 tons on average in the 6th-10th year.

9) Food potatoes from the U.S. were imported based on the tariff of 304%, with a 3% increase annually through a TRQ. Seasonal tariffs were to be imposed on potatoes for chips, with 8-stage reduction after the 8th year in the period of May to November and tariff-free in the period of December to April.

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- Potato imports based on seasonal tariffs amounted 15,000 tons on average in the 1st–5th year and decreased by 24.9% to 12,000 tons on average in the 6th–10th year.
- The average import unit price in the 6th–10th year was \$1.24 per kg, 23.1% up from the average before the FTA and 6.1% up from the previous 5-year average.

<Table 20> Changes in imports and prices of U.S. potatoes

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Imported volume	55	87	102	97	101	107	74.7	94.0	5.7
General rate	18	6	0	0	1	0	-97.5	-99.4	-91.9
WTO conventional tariff (high rate)	24	6	0	0	1	0	-100.0	-100.0	-100.0
Out-quota rate (recommended by MAFRA)	13	10	1	2	3	4	-87.3	-68.9	35.8
FTA conventional tariff (TRQ)	-	1	0	1	0	1	-	-	575.3
FTA conventional tariff (Option 1)	-	57	90	85	80	90	-	-	12.8
FTA conventional tariff (Option 2, 3)	-	7	11	8	15	12	-	-	-24.9
Import unit price	1.01	1.11	1.21	1.45	1.17	1.24	43.8	23.1	6.1

Note 1) The average before the treaty enforcement is between 2007 and 2011. The average in the 1st–5th year is between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Potato imports include frozen potatoes and those for chips and french fries.

3) FTA conventional tariff (Option 1) refers to lowered rate following the FTA. Option 2/3 refers to seasonal tariffs.

4) FTA conventional tariff (TRQ) refers to imposing low rates up to a threshold and high rates when exceeding it.

5) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data processed from KTSPI data.

The U.S. market share in Korea increased after the FTA was enacted but started to decline in 2017 as the nation raised its potato imports from the EU (see Table 21).¹⁰⁾

- Korea's self-sufficiency rate is relatively high for potatoes, and imported potatoes' share including American products in Korea is low.
- The U.S. potatoes took 8.2% on average in the domestic market before the treaty. Their share rose to 17.5% amid the poor harvest in Korea in 2017. Afterward, their portion in Korea decreased due to a rise in domestic output and imports of potatoes for french fries from the EU and Canada.

10) Domestic output increased backed by the government's support for the cultivation of crops other than rice in rice paddies until 2019. However, the output increase triggered price drops. Also, as demand for school meals shrank amid the pandemic, potato production has decreased.

〈Table 21〉 U.S. potatoes' market share in Korea

in thousand tons

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	673	716	847	710	688	705	625	710	855	715	723
Domestic output (B)	602	608	727	591	538	556	467	548	690	553	564
(%, B/A)	(89.5)	(84.8)	(85.9)	(83.1)	(78.2)	(78.8)	(74.7)	(77.1)	(80.7)	(77.3)	(78.0)
Total imports (C)	71	109	121	122	151	151	160	164	166	163	161
U.S. (D)	55	87	102	104	112	102	109	110	109	112	97
(%, D/A)	(8.2)	(12.1)	(12.0)	(14.7)	(16.3)	(14.5)	(17.5)	(15.4)	(12.7)	(15.6)	(13.4)
(%, D/C)	(77.5)	(79.3)	(84.2)	(85.3)	(74.0)	(67.8)	(68.5)	(66.7)	(65.5)	(68.3)	(59.8)
EU27	2	7	5	6	12	11	14	15	17	24	36
Australia	7	12	10	6	15	24	20	20	17	13	17
Others	8	4	4	6	13	13	16	19	24	15	12
Total exports (E)	0.450	0.806	1.057	2.253	1.234	1.433	1.551	2.066	1.647	1.414	2.137

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Potato imports include frozen potatoes and those for chips and french fries, without considering detailed numbers by HS code.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

5) Domestic output in 2021 is an estimate by KREI.

Source: KTSPI; Statistics Korea; KREI (2022).

3.3. Fruits

3.3.1. Orange

Imports from the U.S. increased after the FTA, with a rise in their market share.¹¹⁾

Korea's imports of U.S. oranges reached 100,000 tons in the 10th year, 4.0% up from the average before the FTA (see Table 22).

- The average volume from the U.S. in the 6th-10th year amounted to 117,000 tons, 21.6% up from the average before the FTA but 10.9% down from the previous 5-year average.
- 88.4% of the average imports in the 6th-10th year were subject to the FTA conventional tariff (Option 2) during the period of no domestic output. U.S. imports increased due to quality improvement and a rise in domestic demand compared to the average before the treaty.

11) U.S. oranges were subject to seasonal tariffs and low quotas (TRQ). The rate of 50% was applicable from September to February during the time of domestic tangerine production, with a 3% increase annually starting from 2,500 tons for the TRQ (zero duty for below the threshold).

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- Recently, orange imports from the U.S. have decreased due to supply chain bottlenecks amid the pandemic and rising demand for “easier-to-peel” fruits.¹²⁾
- The average import unit price in the 6th–10th year was \$1.71 per kg, 44.2% up from the average before the FTA due to the continued dollar strength and production cost hikes in the U.S.

(Table 22) Changes in imports and prices of U.S. oranges (fresh)

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Import volume	96	167	146	100	131	117	4.0	21.6	-10.9
General rate (50%)	26.4	9.7	0.4	0.8	3.0	1.1	-96.9	-95.7	-62.8
WTO (not recommended by MAFRA)	69.4	45.1	15.4	2.5	20.0	8.1	-96.3	-88.4	-59.7
FTA TRQ	–	0.5	2.9	3.4	2.2	2.9	–	100.0	33.6
FTA conventional tariff (Option 1)	–	0.3	0.9	0.6	0.4	1.3	–	–	200.3
FTA conventional tariff (Option 2)	–	111.3	126.9	92.2	105.0	103.0	–	–	-1.9
Import unit price	1.19	1.26	1.43	1.84	1.45	1.71	55.3	44.2	17.6

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Orange imports include fresh oranges only.

3) FTA conventional tariff (Option 1) refers to the highest rate of 50% out of all applicable conventional rates. Option 2 refers to the rate applicable to the non-shipment period in March–August, which was removed in 2018 after a decrease to 30% for 7 years.

4) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data process from KTSPI data.

The U.S. share in the 6th–10th year rose from the average before the treaty. However, it has recently decreased due to a decline in domestic demand and harsh competition in the Korean market (see Table 23).

- The U.S. share in the domestic market rose to 16.6% on average in the 1st–5th year from 12.3% before the treaty enactment. However, it went down to 15.5% in the 6th–10th year.
- The decline came from the harsh competition in March–April when high-quality homegrown fruits, such as tangors, strawberries, and green grapes enter the market.¹³⁾

12) USDA (2021). “Citrus Annual Republic of Korea.”

13) Ibid.

〈Table 23〉 U.S. orange (fresh)’s market share in Korea

in thousand tons

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	782	828	808	786	752	765	739	764	754	774	724
Domestic output (B)	680	654	655	688	640	610	597	621	630	659	615
(%, B/A)	(87.0)	(79.0)	(81.1)	(87.5)	(85.1)	(79.7)	(80.8)	(81.3)	(83.5)	(85.1)	(84.9)
Total imports (C)	102	174	153	98	112	155	142	142	124	115	109
U.S. (D)	96	167	146	91	103	146	132	130	115	106	100
(%, D/A)	(12.3)	(20.2)	(18.0)	(11.6)	(13.7)	(19.2)	(17.8)	(17.0)	(15.3)	(13.7)	(13.8)
(%, D/C)	(94.1)	(96.0)	(95.4)	(92.7)	(92.1)	(94.5)	(93.0)	(91.0)	(92.8)	(91.8)	(91.1)
Australia	0	2	1	0	1	1	2	3	3	6	7
South Africa	2	2	4	4	5	3	4	5	2	3	1
Others	3	3	3	3	3	4	4	5	4	1	1
Total exports (E)	0.043	0.029	0.001	0.004	0.001	0.006	0.009	0.009	0.003	0.014	0.029

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Orange imports include fresh oranges only. Domestic output includes mandarins.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

5) Domestic output refers to mandarin production. The output in 2021 is an estimate by KREI (2022).

6) The total import volume may be different from the combined volumes of imports from individual countries due to rounding.

Source: KTSPI; Statistics Korea; KREI (2022).

3.3.2. Grape

U.S. imports increased after the FTA came into force, but the market share went up slightly due to grape imports from Chile.¹⁴⁾

Grape imports from the U.S. in the 10th year amounted to 12,000 tons, 213.7% up from the average before the treaty (see Table 24).

- The average grape imports from the U.S. in the 6th-10th year reached 15,000 tons, 285.7% up from the amount before the treaty and 120.6% up from the previous 5-year average.
- The import volume during the period of no domestic output posted 4,250 tons on average in the 1st-5th year. However, it rose by 134.8% to 9,982 tons in the 6th-10th year due to a rise in domestic demand and good harvests in the U.S. However, imports from the U.S. have declined since 2018 due to poor harvests in America and low quality.

14) The tariff (45%) applicable to U.S. grapes (fresh) was to be abolished for 17 years during the period of May 1–October 15, when domestic grapes are produced. During October 16–April 30 with no domestic production, the rate was lowered to 24%, then abolished in the 2nd year for 4 years.

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- The import based on the FTA conventional tariff (Option 1) increased 98.9% to 5,061 tons on average in the 6th–10th year from 2,544 tons in the previous 5-year average. The import during the period with no domestic output decreased after 2018. However, the import during the period of domestic output increased continuously.
- The average import unit price in the 6th–10th year amounted to \$3.22 per kg, 33.8% up from \$2.41 per kg before the treaty and 13.3% up from \$2.84 per kg in the 1st–5th year.

(Table 24) Changes in imports and prices of U.S. grapes (fresh)

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Import volume	3,902	5,951	7,523	12,242	6,823	15,050	213.7	285.7	120.6
General rate (45%)	3,227	27	11	0	28	7	-100.0	-99.8	-74.6
WTO conventional tariff (high rate)	675	–	–	–	–	–	-100.0	-100.0	–
FTA conventional tariff (Option 1)	–	2,370	2,655	5,569	2,544	5,061	–	–	98.9
FTA conventional tariff (Option 2)	–	3,554	4,857	6,672	4,250	9,982	–	–	134.8
Import unit price	2.41	2.63	3.05	3.75	2.84	3.22	56.0	33.8	13.3

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Grape imports include fresh grapes only.

3) FTA conventional tariff (Option 1) refers to seasonal rates (May 1–October 15, removed through 17 stages). FTA conventional tariff (Option 2) refers to seasonal rates (October 16–April 30, removed through 4 stages after a drop to 24%).

4) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data processed from KTSPI data.

America's share in the domestic market increased from 1.2% on average before the treaty to 5.2% on average in the 6th–10th year (see Table 25).

- Homegrown grapes took 89.5% of the market with high self-sufficiency before the treaty took effect. However, the share decreased along with reduced cultivation areas following the government's support for business closures in 2015–2016. Recently, domestic grapes' share has rebounded with a rise in shine muscat cultivation.
- The market share of U.S. grapes increased until 2018 due to poor harvests in Korea and Chile. However, U.S. grapes' share in Korea decreased due to their quality decrease from heavy rains during harvesting.

(Table 25) U.S. grape (fresh)'s market share in Korea

in thousand tons

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	318	289	278	288	289	277	240	234	233	221	235
Domestic output (B)	285	235	220	229	224	229	190	175	166	166	188
(%, B/A)	(89.5)	(81.4)	(79)	(79.6)	(77.4)	(82.8)	(79.2)	(74.9)	(71.2)	(75.2)	(79.9)
Total imports (C)	34	54	59	59	66	49	51	60	69	57	49
U.S. (D)	4	6	8	7	6	8	10	20	16	17	12
(%, D/A)	(1.2)	(2.1)	(2.7)	(2.4)	(2.1)	(2.7)	(4.2)	(8.4)	(6.9)	(7.8)	(5.2)
(%, D/C)	(11.6)	(11)	(12.9)	(11.9)	(9.1)	(15.4)	(19.8)	(32.8)	(23.3)	(30.2)	(24.8)
Chile	30	47	47	47	51	34	34	32	41	24	24
Peru	0	2	4	5	9	7	7	8	9	7	9
Others	0	0	0	0	1	0	0	1	3	8	4
Total exports (E)	0.4	0.3	0.4	0.6	0.8	1.0	1.2	1.3	1.9	2.0	2.1

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

4) Grape imports include fresh grapes only.

5) Domestic output in 2021 is an estimate by KREI.

6) The total import volume may be different from the combined volumes of imports from individual countries due to rounding.

Source: KTSPI; Statistics Korea; KREI (2022).

3.3.3. Cherry

Cherry imports from the U.S. increased as tariffs on them were removed immediately after the FTA was enforced. However, the volume has decreased, replaced by cherries from Chile.¹⁵⁾

Cherry imports from the U.S. amounted to 12,000 tons in the 10th year, 205.4% up from the average before the FTA (see Table 26).

- The average imports of U.S. cherries amounted to 13,000 tons on average in the 6th-10th year, 237.0% up from the average before the treaty and 15.5% up from the previous 5-year average.
- Tariffs on U.S. cherries were removed shortly after the FTA enforcement. Imports have increased due to household income increases and Korean consumers' preference for high-quality fruits.
- The average import unit price in the 6th-10th year amounted to \$9.31 per kg, 12.0% up from the average before the treaty and similar to the previous 5-year average.

15) As the baseline rate of 24.0% was abolished shortly after the FTA took effect, cherries are imported free of taxes.

<Table 26> Changes in imports and prices of U.S. cherries (fresh)

in thousand tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st –5 th yr (C)	Avg. 6 th –10 th yr (D)	B/A	D/A	D/C
Import volume	3,826	9,325	12,387	11,684	11,161	12,893	205.4	237.0	15.5
General rate (45%)	1,266	0	12	0	5	5	-100.0	-99.6	0.3
WTO conventional tariff (high rate)	2,560	0	0	0	0	0	-100.0	-100.0	-
FTA conventional tariff (Option 1)	-	9,325	12,375	11,683	11,156	12,888	-	-	15.5
Import unit price	8.31	8.68	8.88	9.77	9.34	9.31	17.6	12.0	-0.4

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st–5th year is the arithmetic mean between 2012–2016, while the average in the 6th–10th year is between 2017 and 2021.

2) Cherry imports include fresh cherries only.

3) FTA conventional tariff (Option 1) refers to lowered rate following the FTA.

4) The total import volume may be different from the combined volumes of imports by tariff rate type due to rounding.

Source: Data processed from KTSPI data.

Cherry imports from the U.S. took a large portion before the FTA, but their share has decreased due to poor harvesting in Washington state in 2015–2016 and rising imports from Chile (see Table 27).

- America's share in the domestic market amounted to 90% until the 4th year. However, it declined to 67.0% in 2021 due to rising imports from Chile after 2016.
- Tariffs on cherries from Chile were reduced annually after the Korea-Chile FTA and completely removed in 2014. However, cherry imports from Chile were restricted amid quarantine issues. After the restriction was lifted in January 2016, imports from Chile increased, with America's share in Korea declining.¹⁶⁾

<Table 27> U.S. cherry (fresh)'s market share in Korea

in thousand tons

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total consumption (A)	4,275	9,809	9,724	14,016	13,281	14,640	18,370	18,628	16,862	15,329	18,561
Domestic output (B)	252	355	588	656	698	820	709	555	1,000	1,114	1,114
(%, B/A)	(5.9)	(3.6)	(6.0)	(4.7)	(5.3)	(5.6)	(3.9)	(3.0)	(5.9)	(7.3)	(6.0)
Total imports (C)	4,023	9,454	9,136	13,360	12,583	13,820	17,661	18,072	15,862	14,215	17,448
U.S. (D)	3,826	9,325	8,936	13,080	12,076	12,387	16,022	14,444	11,508	10,807	11,684

16) Cherry imports from the U.S. are made in summer from May to August, with Chilean cherries in winter from November to February. The produce season of homegrown cherries is from the end of May to July, overlapping with summer imports.

Category	Avg. before FTA	After FTA enforcement									
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
(%, D/A)	(89.5)	(95.1)	(91.9)	(93.3)	(90.9)	(84.6)	(87.2)	(77.5)	(68.2)	(70.5)	(62.9)
(%, D/C)	(95.1)	(98.6)	(97.8)	(97.9)	(96.0)	(89.6)	(90.7)	(79.9)	(72.6)	(76.0)	(67.0)
Chile	-	-	-	-	-	690	1,209	2,987	4,155	3,121	5,541
Uzbekistan	17	1	46	147	36	151	161	431	114	124	206
Others	180	128	155	133	471	592	269	210	85	163	17
Total exports (E)	0.275	-	0.243	-	0.047	0.230	0.100	0.043	0.035	0.090	0.005

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011.

2) Total consumption (A)= Domestic output (B)+ total imports (C)- total exports (E)

3) Cherry imports include fresh cherries only.

4) Imports by country show top 3 nations including the U.S., while imports from other countries are categorized into others.

5) Cherry output in 2021 was not announced and we assumed it would be the same as the 2020 data.

Source: KTSPI: Statistics Korea; KREI (2022).

3.4. Major export items

3.4.1. Pear

After Korea's pear export to the U.S. peaked in 2018, it declined due to poor harvesting and price hikes in the nation and the competition with low-priced Chinese pears.

Pear exports to the U.S. amounted to 8,282 tons in the 10th year, 12.9% down from the average before the FTA (see Table 28).

- The export volume amounted to 10,000 tons on average in the 6th-10th year, 8.2% up from the average before the treaty and 11.6% up from the previous 5-year average.
- The pear export peaked in 2018 at 12,000 tons. Then, it declined due to poor harvesting and price hikes in Korea and the competition with low-priced Chinese pears.¹⁷⁾
- The average export price amounted to \$3.1 per kg in the 6th-10th year, 24.7% up from the average before the treaty and 7.0% up from the previous 5-year average. Recently, the export price increased because domestic wholesale prices rose by 7.4% from the average in the 1st-5th year.

〈Table 28〉 Changes in Korea's pear exports to the U.S.

in tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st -5 th yr (C)	Avg. 6 th -10 th yr (D)	B/A	D/A	D/C
Volume	9,512	8,126	10,359	8,282	9,220	10,294	-12.9	8.2	11.6
Unit price	27.5	3.2	2.8	3.7	2.9	3.1	48.1	24.7	7.0

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st-5th year is the arithmetic mean between 2012-2016, while the average in the 6th-10th year is between 2017 and 2021.

2) The export volume is calculated based on HS 0808.20.1000 (2007-2011) and HS 0808.30.0000 (2012-2021).

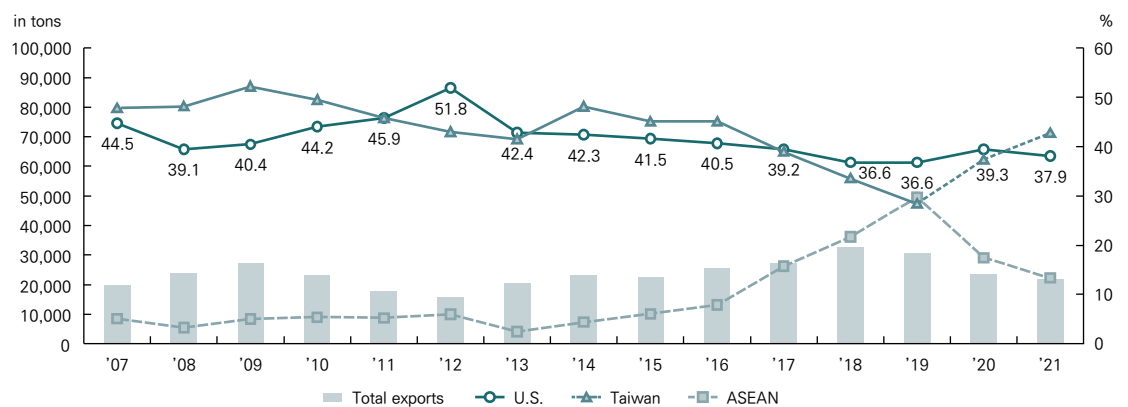
Source: Data processed from KTSPI data.

17) Korea Agro-Fisheries & Food Trade Corp. (aT, each year).

The ratio of Korea's exports to the U.S. declined around the FTA enforcement.

- After the ratio peaked at 51.8%, it continuously went down to 37.9% on average in the 6th–10th year. Recently, pear exports to Asian countries increased backed by the Korean Wave, resulting in a reduced portion in exports to the U.S.¹⁸⁾

〈Figure 3〉 Korea's pear exports and export ratios by country



Source: Data processed from KTSPi data.

3.4.2. Kimchi

Korea's kimchi exports to the U.S. increased after the FTA took effect. Its exports peaked in 2021, backed by American consumers' interest in health amid the pandemic and the Korean Wave.

The export volume in the 10th year (2021) amounted to 7,950 tons, 1,012% up from the average before the treaty (see Table 29).

- The average volume in the 6th–10th year amounted to 4,528 tons, 533.5% up from the average before the treaty and 232.2% up from the previous 5-year average.
- Worldwide interest in health amid the pandemic and the Korean Wave raised attention to Korean foods, increasing kimchi exports.¹⁹⁾
- The average export price in the 6th–10th year amounted to \$3.6 per kg, 6.6% up from the average before the treaty and 2.2% down from the previous 5-year average.

18) Ibid.

19) MAFRA press release on January 9, 2022

〈Table 29〉 Changes in Korea’s kimchi exports to the U.S.

in tons, \$/kg

Category	Avg. before FTA (A)	FTA enforcement					Changes (%)		
		1 st yr (2012)	5 th yr (2016)	10 th yr (B) (2021)	Avg. 1 st -5 th yr (C)	Avg. 6 th -10 th yr (D)	B/A	D/A	D/C
Volume	715	1,047	1,805	7,950	1,363	4,528	1,012	533.5	232.2
Unit price	3.4	3.7	3.5	3.6	3.7	3.6	4.2	6.6	- 2.2

Note 1) The average before the treaty enforcement is the arithmetic mean between 2007 and 2011. The average in the 1st-5th year is the arithmetic mean between 2012-2016, while the average in the 6th-10th year is between 2017 and 2021.

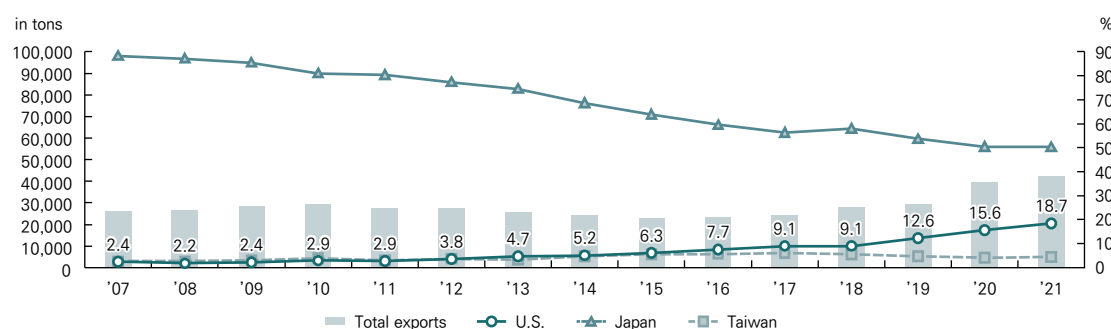
2) Kimchi exports were calculated based on HS 2005.99.1000.

Source: Data processed from KTSPI data.

The ratio of the U.S. in Korea’s kimchi exports has increased since the FTA enforcement.

- America’s share in Korea’s kimchi exports posted 2.6% on average before the treaty and rose to 13.8% in the 6th-10th year average.
- As Korea’s exports to the U.S. rose, exports to Japan, which took the largest portion, declined. The nation’s exports to Japan amounted to 84.6% of Korea’s total kimchi exports before the Korea-U.S. treaty and went down to 53.2% in the 6th-10th year on average.

〈Figure 4〉 Korea’s kimchi exports and export ratios by country



Source: Data processed from KTSPI data.

04

Summary and key findings

The Korea–U.S. FTA took effect on March 15, 2012, with high tariff abolition rates. After its enforcement, Korea’s trade deficits in agricultural and livestock products have increased.

The treaty came into force in March 2012 after eight negotiations. Korea agreed to open 97.9% of the total HS codes in the agricultural sector.

- TRQ fill rates are around 50% on average due to import shifts to other countries and declining demand for items from the U.S.
- Of items subject to agricultural safeguards (ASG), the measure was triggered for five items. It was triggered for buckwheat, bean, popcorn, and maize for more than 4 years.

Although imports from and exports to the U.S. have increased since the treaty, Seoul’s trade deficits expanded.

- Korea’s imports from and exports to the U.S. increased after the treaty, but its trade deficits increased as the imports were larger than the exports.
- Imports increased for U.S. beef, pork, cheese, orange, grape, potato, and cherry. In the case of U.S. beef, cheese, cranberry, and coffee, their import volumes and proportions surged. However, in the case of U.S. cherry, lemon, and grapefruit, their imports increased but the proportions declined compared with other countries.
- The application of the FTA conventional tariff for agricultural imports from the U.S. in the 10th year (2021) amounted to 71.6% on average. Meanwhile, the rate for agricultural exports to the U.S. amounted to 48.0%. Compared with the previous 5 years, the application in the 6th-10th year rose 8.6%p for imports and 1.2%p for exports.

U.S. livestock imports increased with their market share rising. However, Korea’s pear exports to the U.S. have recently dropped.

Although livestock imports from the U.S. increased with their market share in Korea rising, the U.S. share in the domestic fruit market has decreased. Grain imports have not shown a consistent trend.

- American beef and cheese have taken larger shares in the domestic market due to rising demand. Although pork imports from America increased, their market share rose slightly due to imports from the EU.

- Although American grape and cherry imports increased due to a rise in domestic demand, their market shares rose slightly, as imports from Chile rose. U.S. oranges lost their market share in Korea as Korean consumers preferred homegrown spring fruits.
- American wheat's market share in Korea rose as a replacement to feed wheat from Ukraine. However, U.S. potatoes' share in the domestic market declined due to imports for French fries from the EU and Canada.

Korea's exports of pears and kimchi to the U.S. have increased compared with the period before the treaty. However, pear exports have recently declined due to changes in overseas and domestic markets. However, kimchi exports have surged, backed by interests in Korean foods.

- The average volume of pear exports to the U.S. in the 6th-10th year rose 8.2% from the average before the treaty. However, it has shrunk due to poor harvesting and price hikes in the nation and the competition from low-priced Chinese pears.
- Korea's kimchi exports to America have increased continuously since the treaty went into effect. Its exports surged, backed by consumers' interest in health amid the pandemic and attention to Korean foods along with the Korean Wave.

Although the government has signed free trade agreements with various nations, it must raise self-sufficiency by expanding the domestic output of high-quality agricultural and livestock products. At the same time, it must focus on education to increase the FTA application for the nation's products exported to America.

Despite a rise in imports following FTA signing, high-quality product output will be effective in keeping up and increasing homegrown products' market share.

- As Korean farmers have produced high-quality fruits such as tangors, strawberries, and shine muscats, satisfying Korean consumers' taste, homegrown products have held strong competitive edges.
- Korea must use digitalized and smart farming to expand high-quality product output. Also, agricultural research centers and producers' organizations should enhance research and development to meet consumers' preferences.

The government needs to educate exporting firms and producers on related regulations and ways to manage papers for certificates of origin, in order to raise the application of FTA conventional rates for exports to the U.S.

- The application of FTA conventional tariffs for exports to the U.S. amounted to less than 50%, with low application in agricultural and forest items.
- It is necessary to look into the reason for low application for exports. The government should educate exporting firms and producers as to related regulations and procedures for obtaining certificates of origin.

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