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Fact-checking of Unbalanced Korea-U.S. Trade and Countermeasures in the Agricultural Sector

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Contents

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Summary

○ U.S. President Donald Trump expressed his willingness to revise and amend the Korea-U.S. FTA, with his negative perspective on the trade imbalance between the two countries. Korea and the U.S. recently agreed to renegotiate the trade pact.

- At the request of U.S. President Trump, the first and second special joint committee meetings were conducted on the KORUS FTA. After the second meeting, the two countries decided to commence the amendment negotiation procedure.

○ In terms of BOP, Korea has recorded current account surplus with the U.S., but it has invested more in the U.S. than the counterpart did in Korea. And TSI varies depending on the global competitiveness of a country.

- Korea's average investment (financial account) in the U.S. improved from USD 3.1 billion of liabilities to assets worth USD 18.1 billion after the implementation of the FTA. The country's average current account surplus went up by 106.7% from USD 16.2 billion to USD 33.5 billion after the implementation of the FTA.
- Korea's TSI dropped in all industries where the country has higher competitiveness than the U.S. and the rest of the world. The U.S. TSI against the RoW worsened, while its TSI in trade with Korea improved.

○ The merchandise trade in the agri-food sector has an unbalanced trade structure in which Korea's imports are much larger than its exports to other countries. A deficit in the goods account of livestock products (including dairy products), fruits and nuts worsened after the FTA took effect.

- The TSI of more competitive product groups of Korea compared to the U.S. decreased from 0.68 in 2011 to 0.61 in 2016, which was lower than that of the U.S. (0.97). The TSI of less competitive product groups slightly increased from −0.96 to −0.94 during the same period, but it was still much lower than the U.S. (-0.66).
- The goods deficits increased in the categories of beef (USD 150 million in carcass, USD 200 million in boneless meat), fresh cheese (USD 10 million), skim milk powder (USD 8 million), orange (USD 50 million), grape (USD 9 million), and grapefruit (USD 6 million).

○ Trade imbalance between Korea and the U.S implies that a balanced, adequate view on it can be made when a macroscopic BOP including the current (goods) account is considered. The merchandise trade imbalance between the two countries should be addressed without going against the purpose of the free trade agreement.

- Korea's import-specialized structure in the agri-food sector can become permanent if the tariffs for agricultural products imported from the U.S. are immediately abolished, and this could affect the free trade agreements Korea concluded with other countries. Therefore, the resolution of goods deficit should be aimed at enhancing the domestic and global competitiveness, rather than readjusting the tariffs and the tariff elimination timing.

○ Korea needs to exert efforts to improve the structure of the agri-food sector that largely relies on imports, and set the direction of policies by considering the domestic agricultural industry structure and market conditions.

- The authorities should enhance the global competitiveness to improve the current import-specialized structure of the agri-food sector in trade with the U.S., and transform the framework of the industry and relevant policies with consideration for changing consumer demands and market conditions. To this end, a cooperative system at the level of governance is required.

01 Introduction

1.1. Overview of Unbalanced Korea-U.S. Trade

□ United States President Donald Trump has expressed a negative perspective on the Korea-U.S. FTA since his election campaign. The two countries have recently agreed to renegotiate the trade pact.

○ U.S. President Trump has officially expressed a negative view on the trade agreement between Korea and the U.S., particularly in his campaign speeches and presidential acceptance speech, defining the pact as a cause of unemployment in the States.

- In addition to the President, other political figures, including Terry Miller, Director of the Center for Trade and Economics at the Heritage Foundation, Vice President Mike Pence, and Commerce Secretary Wilbur Ross, have also expressed their will to renegotiate the agreement in various media interviews.

○ Washington, D.C. began to take specific actions for renegotiation this year.

- On March 31, the Department of Commerce and the United States Trade Representative (USTR) were ordered to report on 16 foreign trading partners with which the United States had a significant trade deficit and relevant trade structures.[1)]
- On April 29, the government was ordered to identify trade agreement violations and abuses.[2)]
- On June 30, U.S. President Trump officially requested negotiations to revise the Korea-U.S. FTA after the summit meeting with Korean President Moon.[3)]
- On August 7, the need to renegotiate the trade pact for addressing trade balance deficit and building a fair trade relationship was mentioned again in a phone call between the two Presidents.[4)]

1) The White House. Presidential Executive Order Regarding the Omnibus Report on Significant Trade Deficits. 31 Mar. 2017.

2) The White House. Presidential Executive Order Addressing Trade Agreement Violations and Abuses. 29 Apr. 2017.

3) Moon, Byeong-gi and Seung-heon Lee. “Trump Officially Requests Renegotiation of the Korea-U.S. FTA.” *Dong-A Ilbo*, 1 Jul. 2017.

4) Spokesperson’s Office. “Press Briefing by Spokesperson Su-hyeon Park.” *Cheong Wa Dae*, 7 Aug. 2017.

Table 1. United States' Remarks about the Unbalanced Korea-U.S. Trade Relationship

Date	Background	Key points
Jul 21, 2016	Trump's Republican nomination acceptance speech	KORUS FTA = job killing deal
Aug 3, 2016	Trump's campaign speech in Virginia	KORUS FTA = job killing deal, disaster
Feb 1, 2017	Director of the Center for Trade and Economics at the Heritage Foundation Terry Miller's remarks in the forum jointly organized by the Korea International Trade Association (KITA) and the Heritage Foundation	Partial improvement or update
Mar 31, 2017	An executive order from the White House (to the Department of Commerce and USTR)	Ordered to identify major trading partners with which the U.S. had a trade deficit and relevant trade structures
Apr 18, 2017	Vice President Mike Pence's speech at AMCHAM	Review, reform
Apr 25, 2017	WSJ interview with Commerce Secretary Wilbur Ross	Reopen
Apr 27, 2017	Reuters interview with Trump	Renegotiate, termination
Apr 29, 2017	The White House	Ordered to identify trade pact violations and abuses
Jun 30, 2017	Trump's remarks after the Korea-U.S. summit meeting	Officially requested to revise the KORUS FTA
Jul 12, 2017	USTR	Requested to hold a special joint committee on the KORUS FTA
Aug 7, 2017	A phone call between the two Presidents (Korea-U.S.)	Mentioned again about the need for revising the KORUS FTA

Source: Lee, Jin-myon and Ba-woo Kim. "Renegotiation of the Korea-U.S. FTA and Korea's Countermeasures," *I-KIET Industrial and Economic Issue*, no. 21, 2017. KIET. Supplemented by the authors.

○ The USTR requested that its South Korean counterpart hold a special joint committee on the Korea-U.S. FTA in Washington, D.C. within 30 days (July 12, 2017).[5)]

- With regard to the request by its U.S. counterpart, the Korean government stated that it was willing to discuss how to expand and keep a balance in the economic and trade relationship between the two countries,[6)] and suggested making concerted efforts to achieve more mutual benefits based on the outcome accomplished.[7)]
- In the reply under the name of the Minister of Trade, Industry and Energy on July 24, Korea proposed to convene a special joint meeting in Seoul in accordance with the written agreement[8)] after finalizing the administrative reshuffle for the new regime.

○ After the USTR announced on August 17, 2017 that it would have a special joint committee meeting on the Korea-U.S. FTA in Seoul, the first meeting was carried out on August 22. The

5) The Ministry of Trade, Industry and Energy (MOTIE). "The USTR Requests to Hold a Special Joint Meeting on the KORUS FTA." 3 Jul. 2017.

6) MOTIE. "MOTIE Replies to the Request by the USTR for a Special Joint Meeting." 21 Jul. 2017.

7) Spokesperson's Office. "Press Briefing by Spokesperson Su-hyeon Park." *Cheong Wa Dae*, 7 Aug. 2017.

8) A special joint meeting is stipulated to be held in the country that received the request, unless the two parties agree otherwise.

second meeting was conducted in Washington, D.C. on October 4 as suggested by the Korean government.

- In the first meeting, the U.S. government claimed that the Korea-U.S. FTA should be amended and revised, pointing out its doubled goods deficit with South Korea, whereas the Korean government requested to conduct a joint analysis of the causes of such goods deficit.
- As a result of the second meeting, the two countries decided to initiate the procedure of revising the agreement.[9)]

1.2. What is Trade Imbalance?

□ Trade imbalance signifies a structure where only one country has a significant trade deficit or surplus in a trade relationship of two countries.

○ Global imbalance is a concept used to encompass trade or financial imbalance and saving-investment imbalance in each country (Brender and Pisani, 2009[10)]; Aglietta and Berrebi, 2009[11)]; Jeon, 2010[12)]; Hahn, 2015[13)]). Trade imbalance is one of several phenomena of global imbalances.

- Global imbalance refers to the situation where the U.S. faces a significant current account deficit, while some countries, such as China, Germany, Japan, South Korea, and oil-producing countries in the Middle East, enjoy an enormous current account surplus (Hahn, 2015).
- For instance, the U.S. incurred USD 365.7 billion goods deficit with China in 2016, a 25.6% increase from USD 291.1 billion in 2010. The percentage of the U.S-China goods deficit jumped from 42.2% to 49.6% in its total global goods deficit during the same period.

9) In order to commence the renegotiation of the KORUS FTA, several procedures, including the economic feasibility assessment, a public hearing, and a report to the National Assembly, should be undergone in accordance with the Act on the Conclusion Procedure and Implementation of Commercial Treaties.

10) Brender, Anton and Florence Pisani. *Les Déséquilibres Financiers Internationaux*. Translated by Ik-jin Seo, Kyungnam University Publishing Department, 2009.

11) Aglietta, Michel and Laurent Berrebi. *Désordres Dans Le Capitalisme Mondial*. Translated by Ik-jin Seo et al., Gil, 2009.

12) Jeon, Yong-bok. "The Chinese Economy and Global Trade Imbalances: Could the Revaluation of the Yuan be a Panacea?" *The Journal of Northeast Asian Economic Studies*, vol. 22(3): 173-197, 2010.

13) Hahn, Young-bin. "Rebalancing the Global Imbalance: Through the Post-Keynesian Perspective," *Journal of Korean Politics*, vol. 24(2): 363- 386, 2015.

□ Various views on trade imbalances are found from the aspect of global political economics, and there are a range of measures to adjust trade imbalances.

○ The concept of trade imbalance can be explained by the declining U.S. hegemony theory and the structural monetary power (Lee, 2017[14]). Adjustment measures include fiscal austerity and exchange rate adjustment.

- Although the U.S. government requested China to revalue its currency, the Chinese yuan was gradually revalued after its rise by 2.1% against the dollar in July 2005. The yuan was fixed to be 6.83 to one US dollar in mid-2008.

○ The declining U.S. hegemony theory originates from the view that the material basis of a country's power is its economic power, which indicates its global competitiveness in production.

- When the share of products of a country in the global market is on the decline with continuous trade deficit, resulting in the growth in external debt, it means that the country's global competitiveness as well as its overall national power is weakening.

○ The structural monetary power is a country's capacity to achieve its policy goals without exerting direct and explicit pressure upon other nations. The global monetary system is one of the domains where this structural power works.

- Since the U.S. dollar is the world's foremost benchmark currency, the cost generated by a declining dollar can be largely shifted to other countries through changes in the prices of imports and exports and the valuation effect of debt burden.

1.3. The Need for and Purpose of Fact-checking of Trade Imbalance between Korea and the U.S.

□ Structural causes of the U.S. current account deficit are divided into internal and external factors and fundamentally attributed to internal issues within the States.[15]

14) Lee, Gyu-cheol. "U.S. Structural Monetary Power and the Political Economy of the Sino-American Imbalance," *The Journal of International Relations*, vol. 20(1): 55-75, 2017.

15) Kim, Kyong-hoon and Lee Jun-won. "U.S. Current Account Deficit: Structural Causes & Implications," *Trade Focus*, no. 35, KITA, 2017.

○ Internal factors that affected the current account deficit of the U.S. are as follows: i) low savings, ii) longstanding budget deficit, iii) changes in the industrial structure, and iv) a growth in overseas direct investment. External factors include i) a savings surplus in emerging countries, ii) the demand for risk-free asset, and iii) undervalued currencies of emerging countries.

○ Since the U.S. current account deficit has basically been caused by a gap between savings and investment in the country, the view that it is hard to blame it as a direct cause of weakening competitiveness in the manufacturing sector and the decrease in jobs represents the mainstream opinions.

□ It is essential to examine the validity of trade imbalance by checking the changes in each category of international balance of payments before and after the implementation of the trade pact, and explore measures to be taken in the agricultural sector in response to the renegotiation of the Korea-U.S. FTA.

○ Trade imbalance has to be seen from the macroscopic angle because it cannot be analyzed only based on current account, but relevant studies and data are insufficient.[16)]

○ It is urgent to come up with measures to minimize the impact of the renegotiation on the agricultural sector and improve its domestic and global competitiveness.

□ This study will find implications by identifying trade imbalance between the two countries and analyzing the competitiveness in each category of industry and commodity, and present the direction of measures for the agricultural sector in response to the amendment of the free trade agreement.

○ Based on the table of balance of payments released by the Bank of Korea (BOK), the trade imbalance between the two countries has been analyzed in three aspects: the current account, the capital account and the financial account.

○ The study analyzes the merchandise trade based on the MTI Code, an industry code established by MOTIE, and the trade competitiveness index of each industry and commodity based on the SITC Code, the Standard International Trade Classification set by the UN.

16) A country's balance of payments (BOP) consist of the current account, the capital account and the financial account. These are statistical data systematically recorded in accordance with the BOP Manual set by the International Monetary Fund (IMF).

02 Balance of Payments of Korea and the U.S.

2.1. Overview of the Balance of Payments of Korea and the U.S.[17)]

□ Korea's investment in the U.S. (financial account) is larger than the U.S. investment in Korea. Korea has also recorded the current account surplus with the U.S.

○ Korea's investment in the U.S. jumped from USD 28.8 billion in 2007 to USD 52.5 billion in 2016. The five-year average investment[18)] improved from USD 3.1 billion of liabilities to assets worth USD 18.1 billion after the implementation of the FTA.

○ Korea's current account surplus with the U.S. soared from USD 16.5 billion in 2007 to USD 31.1 billion in 2016. The five-year average current account surplus went up by 106.7% from USD 16.2 billion to USD 33.5 billion after the implementation of the FTA.

○ Korea's capital account surplus with the U.S. increased from USD 28.5 million in 2007 to USD 30.1 million in 2016, while the five-year average capital account dropped from USD 28.77 million to USD 13.3 million after the implementation of the FTA.

Table 2. Korea's Balance of Payment with the U.S.

Unit: USD million

Category	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average	
											2007-2011	2012-2016
Current account	16,496	16,920	15,167	13,680	19,773	19,038	36,227	40,986	33,032	31,148	16,194	33,469
Capital account	-29	-32	-26	9	-73	-30	2	-12	2	-30	-28.77	-13.30
Financial account	28,762	2,820	-4,188	-20,187	-7,996	5,876	11,881	25,022	17,509	52,503	-3,121	18,137

Source: The Bank of Korea, The Economic Statistics System.

17) The balance of payments can be classified into the current account, the capital account and the financial account. The current account shows the flows of goods, services, primary income and transfer income. The capital account measures capital transfer and transactions of non-produced, non-financial assets. The financial account includes direct investment, portfolio investment, financial derivatives, other investment, and reserve assets.

18) The average value hereinafter signifies the three-year average of 2007-2011 and 2012-2016 with the maximum and minimum values excluded. The average growth rate indicates the growth rate between these average values.

□ The percentage of the U.S. in Korea's balance of payments remarkably fell after the FTA took effect, while Korea takes up a meager share in the U.S. balance of payments both before and after the implementation of the FTA.

○ Most of Korea's current account surplus used to come from trades with the U.S. (97.8%) in the past, but the share of the U.S. significantly dropped to 37.9% after the agreement entered into force.

- In 2007, Korea's service trade deficit with the rest of the world was high due to the worsening service trade deficit with Japan and the EU. In 2008, the ratio of Korea's current account surplus with the U.S. to the country's total current account surplus was over 100% due to the country's increasing goods deficit with Japan and the Middle East.

○ The ratio of the U.S. in Korea's total financial account used to reach an average of 183.2% in the past, but it significantly declined to 24.1% after the FTA was implemented.

- In 2007, the ratio was over a whopping 1000% since the liabilities caused by the investment from the EU and Southeast Asia were higher than Korea's assets following its investment in the U.S. In 2010, the ratio was over 500% since Korea's liabilities to the U.S. were much higher than those to other countries.

○ In terms of Korea's ratio in the U.S. balance of payments, the ratio in the current account deficit is less than 5%, and the percentage in the financial account is less than 10%.

- The average ratio of Korea in the U.S. current account deficit increased from 1% in 2007-2011 to 3.8% in 2012-2016.
- The percentage of Korea in the U.S. financial account jumped from 0% to 6.5% during the same period (due to Korea's expanded investment in the U.S.).

Table 3. Changes in the Ratio of Korea and the U.S. in the Total Balance of Payments of Trading Country

Unit: %

Category		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average	
												2007-2011	2012-2016
U.S. ratio in Korea's BOP	Current account	139.9	530.4	45.1	47.4	106.0	37.5	44.6	48.6	31.2	31.6	97.8	37.9
	Capital account	-500.0	-121.2	37.1	-14.7	65.2	71.2	-7.4	137.1	-3.8	82.2	-33.0	49.9
	Financial account	1,215.9	5.7	10.1	534.0	-77.2	15.3	18.6	35.0	18.6	56.6	183.2	24.1
Korea's ratio in the U.S. BOP	Current account	1.5	0.9	1.2	0.7	1.0	1.7	3.0	4.3	4.6	4.2	1.0	3.8
	Capital account	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Financial account	2.4	-4.2	4.0	-2.5	-0.1	4.1	3.7	5.8	9.6	12.6	-0.0	6.5

Source: The Bank of Korea, The Economic Statistics System; The U.S. Bureau of Economic Analysis (BEA).

2.2. Current Account of Korea and the U.S.

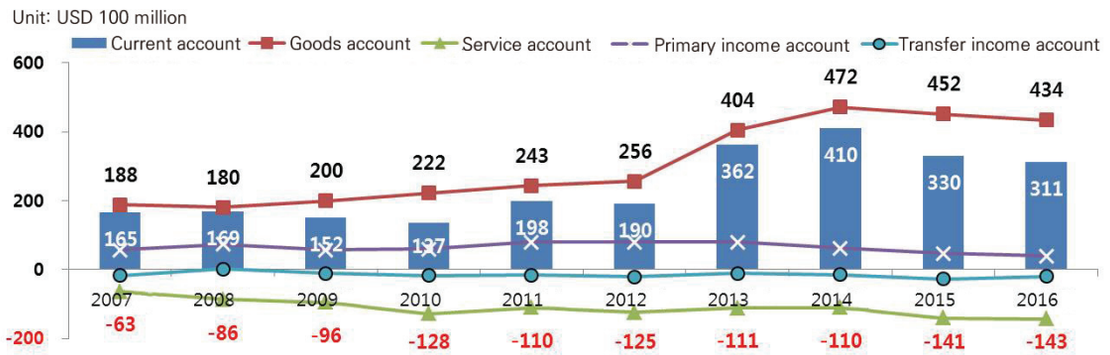
□ After the FTA entered into force, Korea's current account surplus with the U.S. mainly comes from goods trade,[19] which has been on the decline since 2014.

○ Korea's current account surplus with the U.S. went up by 148.5% from USD 16.5 billion in 2007 to USD 41 billion in 2014, but it declined to USD 31.1 billion in 2016.

- In the country's current account surplus with the U.S., the average goods surplus (based on FOB) increased by 111.6% from USD 20.3 billion to USD 43 billion after the implementation of the FTA.
- The country's service account deficit with the U.S. jumped from USD 6.3 billion in 2007 to USD 14.3 billion in 2016, and the average service deficit also increased by 29.1% from USD 9.7 billion to USD 12.5 billion after the agreement came into force.

19) Imports and exports of goods account in the BOP table (current account) are measured based on the FOB (free on board) price. The gap with the amount calculated based on the CIF (cost, insurance and freight) is counted up in the service balance (payment).

Figure 1. Changes in Korea's Current Account Surplus and Deficit with the U.S.



Source: The Bank of Korea, The Economic Statistics System.

□ In Korea's service deficit with the U.S., intellectual property rights royalties and tourism take up the largest proportions, and in particular, the former deficit significantly jumped after the implementation of the FTA.

○ The deficit of intellectual property rights royalties was on average of USD 3.1 billion in the past, and it increased by a whopping 69.9% to an average of USD 5.3 billion after the agreement entered into force.

- The proportion of intellectual property rights royalties in the country's service deficit with the U.S. increased from 32% to 42.1%.

○ The average tourism deficit was USD 4.1 billion, and it jumped by 19.4% to USD 4.8 billion after the implementation of the trade pact.

- The proportion of this category in the country's service deficit with the U.S. slightly declined from 41.8% to 38.6%.

Table 4. Changes in Korea's Service Surplus and Deficit with the U.S.

Unit: USD million

Category	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average	
											2007-2011	2012-2016
Subtotal	-6,315	-8,631	-9,555	-12,798	-10,971	-12,460	-11,096	-11,001	-14,087	-14,281	-9,719	-12,547
Processing services	555	532	421	551	510	486	397	332	190	280	531	336
Transportation	757	-564	-647	-675	-1,437	-267	-181	-54	-633	-1,451	-629	-360
Travel	-5,312	-4,165	-3,578	-3,890	-4,132	-4,590	-4,163	-4,619	-5,337	-5,725	-4,062	-4,848
Insurance services	-214	1	433	-519	11	-17	-40	39	-28	-47	-67	-28
Royalties and license fees	-2,581	-3,044	-3,301	-4,983	-2,992	-4,866	-5,590	-5,408	-5,885	-4,592	-3,113	-5,288
Communications, computer and information services	26	-101	-131	-18	-69	-74	19	132	-155	-360	-63	-70
Other business services	-220	-1,861	-2,682	-2,940	-2,777	-2,750	-1,303	-1,232	-2,383	-2,599	-2,440	-2,095
Government services	817	667	761	476	547	669	646	474	307	338	658	486
Other services	-143	-96	-829	-799	-633	-1,051	-880	-665	-163	-124	-525	-569

Source: The Bank of Korea, The Economic Statistics System.

2.3. Investment (Financial Account) of Korea and the U.S.

□ Korea's total assets for investment (financial account)[20] in the U.S. improved from the state of declining assets (increasing liabilities) to the state of growing assets with increasing portfolio investment in the U.S after the implementation of the FTA.

○ Korea used to have an average of USD 3.1 billion of liabilities to the U.S. in the past, but the country became to have an average of USD 18.1 billion assets for investment in the U.S. after the trade agreement entered into force.

- In the average investment scale from 2012 to 2016, portfolio investment took up the largest proportion (51.8%, USD 9.4 billion), followed by other investment (29.4%, USD 5.3 billion), direct investment (20.8%, USD 3.8 billion), and financial derivatives (10.9%, USD 2 billion).[21]

20) The new terminology and sign conventions for the BOP financial account were modified from "net money flow" to "changes in assets and liabilities" from February 2016. Assets cover equity investment and investment in kind by domestic financial institutions and enterprises for overseas direct investment enterprises, and overseas real estate investment by a resident entity, while liabilities indicate the opposite concepts.

21) Direct investment covers all transactions between direct investors and direct investment enterprises in a foreign direct investment relationship. Portfolio investment includes transactions of stocks and debt securities between a resident entity in one economy and an entity resident in another economy. Financial derivatives are financial instruments whose values are decided by the changing value of some other underlying assets, such as financial instruments, commodities, indicators and credit (BOK, 2016).

○ Right before the FTA came into effect, Korea used to have an average of USD 6 billion of liabilities to the U.S. since the country's portfolio investment in the U.S. was less than the U.S. portfolio investment in Korea. After the implementation of the FTA, however, Korea now has USD 9.4 billion of assets thanks to the country's increased amount of portfolio investment in the U.S.

- Korea's assets for portfolio investment in the U.S. have grown every year, while its liabilities in this category have been on the decline.
- The percentage of stocks in Korea's assets for portfolio investment in the U.S. dropped from 59.1% to 45.4% after the trade pact went into effect, while that of debt securities increased from 40.9% to 50.2% during the same period.
- In Korea's liabilities to the U.S. caused by portfolio investment, the percentage of stocks reaches 78.3%, while that of debt securities is a meager 9.3%.

Table 5. Changes in Korea's Investment in the U.S.

Unit: USD million

Category	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average	
											2007-2011	2012-2016
Subtotal	28,762	2,820	-4,188	-20,187	-7,996	5,876	11,881	25,022	17,509	52,503	-3,121	18,137
Direct investment	4,165	-462	1,289	2,683	7,372	1,671	-507	4,455	5,205	8,139	2,712	3,777
Assets	3,786	5,246	3,551	4,303	9,775	4,920	3,479	7,136	6,224	9,001	4,445	6,093
Liabilities	-378	5,708	2,262	1,620	2,403	3,249	3,986	2,681	1,019	863	2,095	2,317
Portfolio investment	25,749	7,422	-14,352	-21,062	-11,067	-5,480	6,457	15,240	6,489	33,657	-5,999	9,395
Assets	12,766	-10,165	568	1,275	602	3,939	10,264	19,759	15,311	33,925	815	15,111
Liabilities	-12,983	-17,587	14,920	22,337	11,670	9,418	3,807	4,519	8,822	268	4,535	5,716
Financial derivatives	896	3,068	-850	379	1,548	615	1,152	1,693	3,665	3,102	941	1,982
Assets	-535	-11,181	-13,868	-8,651	-7,244	-5,397	-5,964	-7,652	-10,138	-8,856	-9,025	-7,491
Liabilities	-1,432	-14,249	-13,018	-9,031	-8,792	-6,012	-7,116	-9,345	-13,803	-11,959	-10,280	-9,473
Other investment	-2,048	-7,208	9,725	-2,187	-5,849	9,070	4,779	3,634	2,150	7,605	-3,361	5,340
Assets	1,604	1,379	-2,259	450	4,584	2,273	6,875	4,342	1,083	6,671	1,145	4,428
Liabilities	3,652	8,588	-11,984	2,637	10,433	-6,797	2,096	707	-1,067	-935	4,959	-432

Source: The Bank of Korea, The Economic Statistics System.

○ Korea's direct investment in the U.S. went up by 39.3% from USD 2.7 billion to USD 3.8 billion after the implementation of the agreement. Assets increased more than liabilities did.

- In terms of Korea's direct investment in the U.S., assets soared by 37.1% from USD 4.4 billion to USD 6.1 billion, while liabilities increased by only 10.6% from USD 2.1 billion to USD 2.3 billion during the same period.

○ Korea's investment in the U.S. with financial derivatives skyrocketed by 110.6% from USD 0.9 billion to USD 2 billion after the trade pact entered into force. Liabilities decreased more than assets did.

- In terms of Korea's investment in the U.S. with financial derivatives, the amount of decrease in assets declined by 17% from USD 9 billion to USD 7.5 billion, while the amount of decrease in liabilities declined by 7.9% from USD 10.3 billion to USD 9.5 billion.

03 Korea-U.S. Merchandise Trade[22] by Industry and TSI Analysis

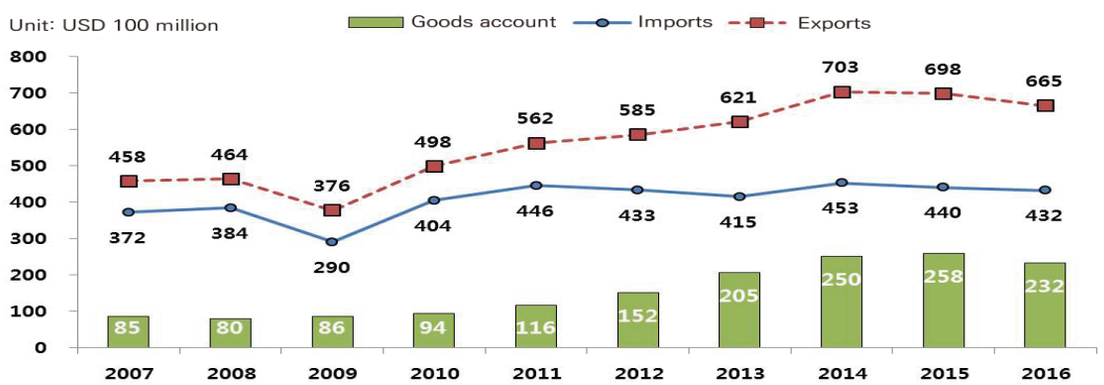
3.1. Trend in Korea-U.S. Merchandise Trade by Industry[23]

□ Korea's goods surplus with the U.S. has soared by 158.9% after the Korea-U.S. FTA took effect, while the percentage of the U.S. in Korea's total goods surplus has been on the decline.

○ Korea's goods surplus with the U.S. (imports based on CIF, exports based on FOB) was an average of USD 8.9 billion in the past, and it remarkably jumped to USD 22.9 billion after the implementation of the FTA.

- From 2009, the country's exports to the U.S. increased by 8.5% on annual average, but the growth of imports from the U.S. has been stagnant at 5.8% since 2011.

Figure 2. Korea's Total Merchandise Trade with the U.S.



Note: Imports are measured based on the CIF (cost, insurance and freight) price, while exports are measured based on the FOB (free on board) price.

Source: Korea Trade Statistics Promotion Institute (KTSPI).

○ The proportion of the U.S. in Korea's total goods surplus decreased every year except for 2008 and 2011.

- The proportion of the U.S. in Korea's total goods surplus (%, according to the statistics of BOK): 57.2 (2007) → 46.3 (2010) → 36.0 (2016)

□ The agricultural, forestry and fisheries industry recorded the goods deficit, while the

22) The statistical data of merchandise trade in this chapter were collected based on customs statistics, which can have differences in the organization and concepts with the current account (trade balance) in the BOP table released by the BOK.

23) The average value in this section signifies the three-year average, excluding the maximum and minimum values in the data of five years.

machinery, electronic/electric, and steel/metal industries showed a goods surplus.

○ Since the implementation of the FTA, the goods deficit with the U.S. in the agricultural, forestry and fisheries industry has increased by 14.8%, while the chemical industry has maintained the average level with no significant change.

- After the implementation of the FTA, the average goods deficit in the agricultural, forestry and fisheries industry jumped from USD 5.1 billion to USD 5.8 billion, while that of the chemical industry stayed at USD 4.3 billion.

○ The machinery and steel/metal industries recorded a remarkable growth in the goods surplus by 226.8% and 17,627%, respectively, while the goods surplus in the electronic/electric industry decreased by 7.8%.

- The goods surplus in the machinery industry increased from USD 5.6 billion to USD 18.3 billion after the implementation of the trade pact, while that of the steel/metal industry jumped from USD 12.42 million to USD 2.2 billion during the same period.
- The goods surplus in the electronic/electric industry dropped from USD 9.4 billion to USD 8.6 billion during the same period.

Table 6. Changes in Korea's Goods Surplus and Deficit with the U.S. by Industry (1-digit MTI)

Unit: USD million

Category	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average	
											2007-2011	2012-2016
Agriculture, forestry, fishing	-3,411	-6,103	-3,937	-5,226	-6,768	-5,641	-5,002	-6,879	-6,034	-5,846	-5,089	-5,841
Mining, quarrying	3,196	953	780	1,948	162	511	1,541	200	771	35	1,227	494
Chemicals	-4,385	-3,894	-3,729	-4,647	-4,857	-4,791	-4,980	-4,065	-3,991	-4,146	-4,309	-4,334
Plastics, rubber, leather	535	585	613	1,006	1,373	1,563	1,268	1,489	1,667	1,917	735	1,573
Textiles	1,481	1,244	881	854	930	1,052	1,058	1,066	1,026	990	1,018	1,045
Household items	232	161	146	161	172	288	327	294	317	345	165	313
Steel, metal	-76	169	-500	-56	738	1,858	1,649	3,757	2,428	2,319	12	2,202
Machinery	5,267	6,619	4,871	4,685	10,702	14,964	16,351	20,354	21,472	18,063	5,585	18,256
Electronic, electric components and equipment	6,335	8,750	9,812	11,122	9,488	5,560	8,528	8,959	8,378	10,027	9,350	8,622
Other manufacturing	-627	-473	-325	-434	-300	-180	-199	-173	-226	-458	-411	-201

Source: KTSPI.

□ In the agricultural, forestry and fisheries industry, the goods deficit of grains and feed has decreased, while that of root/tuber crops, fruit, nuts, livestock meats, honey/royal jelly, and

dairy products has significantly grown.

○ Since the FTA took effect, the goods deficit of grains has dropped by 18.5% from USD 0.81 billion to USD 0.66 billion, and that of feed has also declined by 30.3% from USD 1.58 billion to USD 1.1 billion.

- The goods account of grains and feed seems to have improved due to the decreased imports, with poor harvest caused by abnormal temperature and drought in the States and declining demand caused by GMO issues.

○ The average goods deficit in the categories largely affected by the lowered tariff, including root/tuber crops, fruit, nuts, livestock meats, honey/royal jelly, and dairy products, has been worsened by 115.5%, 134.0%, 185.4%, 117%, 187.6%, and 202.8% since the implementation of the FTA.

- Root/tuber crops: The goods deficit of potatoes increased by 115.6% from USD 53.61 million to USD 0.12 billion.
- Fruit: The goods deficit of cherries (USD 0.03 billion → USD 0.11 billion) and oranges (USD 0.11 billion → USD 0.19 billion) increased by 253.5% and 69.9%, respectively.
- Nuts: The goods deficit of walnuts (USD 0.01 billion → USD 0.11 billion) and almonds (USD 0.01 billion → USD 0.18 billion) increased by 116.9% and 247.9%, respectively.
- Livestock meats: The goods deficit of beef (USD 0.3 billion → USD 0.72 billion) and pork (USD 0.23 billion → USD 0.4 billion) increased by 137.7% and 76%, respectively.
- Dairy products: The goods deficit of royal jelly (USD 0.16 billion → USD 0.45 billion) and cheese (USD 0.01 billion → USD 0.2 billion) increased by 186.5% and 259.7%, respectively.

Table 7. Changes in Korea's Goods Surplus and Deficit with the U.S. in Agriculture (4-digit MTI)

Unit: USD million

Category		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average	
												2007-2011	2012-2016
Agricultural products		-2,538	-4,975	-2,909	-3,927	-4,644	-3,841	-3,067	-4,444	-3,721	-3,381	-3,827	-3,648
	Grains	-435	-1,249	-631	-778	-1,034	-868	-625	-747	-618	-528	-814	-664
	Root/tuber crops	-39	-44	-49	-67	-78	-93	-108	-118	-130	-120	-54	-115
	Pulse crops	-168	-286	-216	-358	-327	-312	-373	-382	-292	-296	-276	-327
	Fruit	-146	-151	-111	-200	-271	-370	-374	-386	-402	-426	-166	-388
	Nuts	-70	-84	-95	-132	-169	-234	-278	-343	-370	-268	-104	-296
	Feed	-1,184	-2,457	-1,284	-1,612	-1,831	-1,239	-421	-1,460	-1,013	-1,043	-1,576	-1,098
Livestock products		-633	-849	-831	-1,106	-1,943	-1,649	-1,744	-2,233	-2,177	-2,365	-22	-38
	Meat	-317	-447	-486	-605	-1,163	-914	-891	-1,168	-1,257	-1,428	-50	-89
	Honey, royal jelly	-103	-116	-148	-204	-286	-311	-378	-462	-507	-615	-929	-2,051
	Dairy products	-64	-79	-56	-106	-208	-199	-270	-379	-284	-192	-513	-1,113

Note: "Agricultural" and "livestock products" are 2-digit MTI categories.
Source: KTSPI.

3.2. Analysis of TSI[24] of Korea and the U.S.

□ The Trade Specialization Index (TSI), a variation on G-L Index (Grubel-Lloyd Index), an intra-industry trade index, was analyzed in this study to compare the trade competitiveness of each industry and commodity category.

○ TSI is an index to measure a relative competitiveness representing the specialization level of each commodity in the bilateral trade relationship. The index of a particular commodity is estimated by dividing the net exports of the commodity by the total trade volume.

- TSI 1 means complete specialization in export, -1 complete specialization in import, and 0 the equal volume of import and export.

24) The SITC code was employed in the TSI analysis to compare industries of the two countries with the same standards. The value in each cell was rounded off at three decimal places (the same rule applies hereinafter.)

Figure 3. TSI Estimation Formula

$$TSI_{ij}^{k} = \frac{X_{ij}^{k} - M_{ij}^{k}}{X_{ij}^{k} + M_{ij}^{k}}$$

TSI_{ij}^{k}: Country j's TSI of commodity k in comparison with country i
X_{ij}^{k}: Commodity k's exports from country i to country j
M_{ij}^{k}: Commodity k's imports from country j to country i

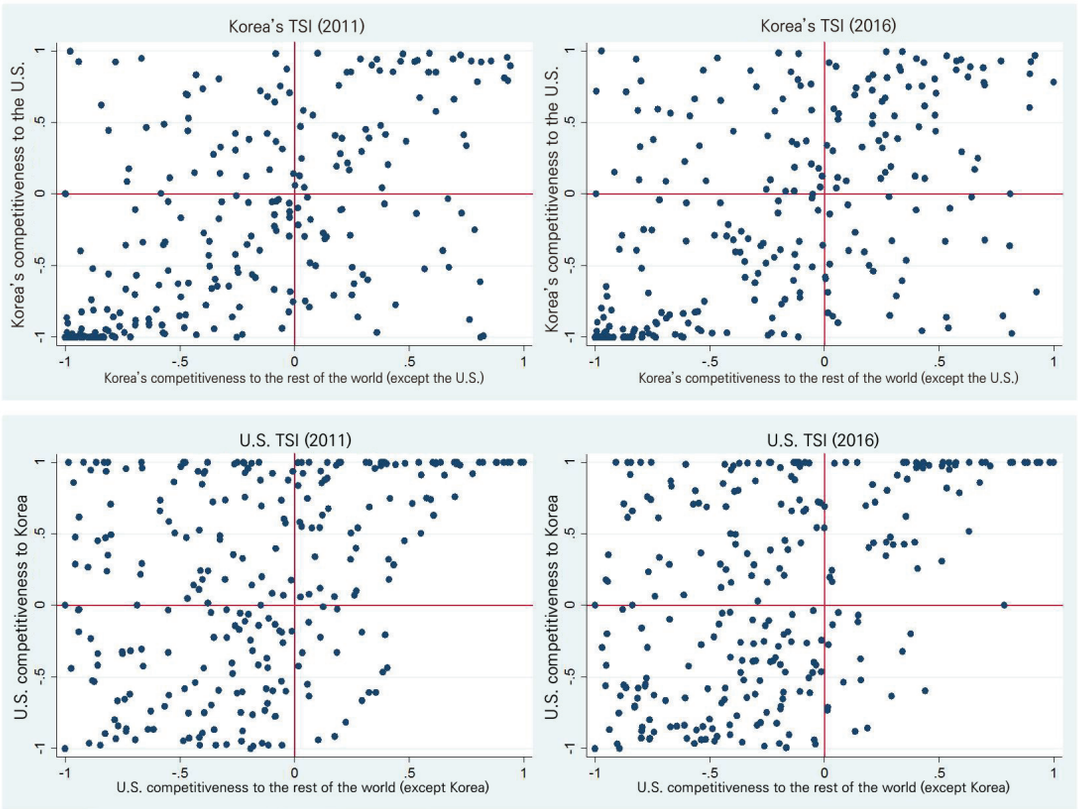
□ The study conducted by Lee and Kim (2017)[25] showed the complementary nature in the Korea-U.S. trade relationship by carrying out the TSI analysis using the 2016 trade statistics based on the 6-digit HS code.

○ Based on the 6-digit HS code, the volume of imports of 30 major commodities from Korea to the U.S. was USD 42.8 billion, which accounted for 61.2% in the country's total imports from Korea (USD 69.9 billion) in 2016.

- In the trade with the rest of the world, the U.S. total imports are larger than exports in 26 out of 30 commodity categories, meaning "being specialized in import." In 16 commodity categories, the export volume is less than a half of the import volume.
- In 25 out of 30 major commodities imported from the U.S. to Korea, Korea is specialized in imports from the rest of the world, proving the complementary nature in the trade relationship between the two countries.

25) Lee, Jin-myon and Ba-woo Kim. "Renegotiation of the Korea-U.S. FTA and Korea's Countermeasures," *I-KIET Industrial and Economic Issue*, no. 21, 2017. KIET.

Figure 4. Changes in TSI Distribution by Industry in Korea-U.S. Trade (3-digit SITC)



Note 1) Based on the 3-digit SITC, TSIs represent the competitiveness of 270 industries in the trade with other countries. TSI in the trade with the rest of the world (RoW) is the value calculated based on the volume of trade with the rest of the world except that between Korea and the U.S.

2) Quadrant I indicates that Korea is specialized in exports in all trade with the world including the U.S. Quadrant II indicates Korea is specialized in imports in trade with the rest of the world and in exports in trade with the U.S. Quadrant III indicates Korea is specialized in imports in all trade with the world including the U.S. Quadrant IV indicates Korea is specialized in exports in trade with the rest of the world and in imports with trade with the U.S.

Source: KTSPI; United States International Trade Commission (USITC).

□ After the Korea-U.S. FTA came into effect, the changes in the RoW competitiveness of both countries have been reflected in the merchandise trade between the two countries, although TSI is different in each group.

○ The number of industries in which Korea has higher competitiveness than the U.S. increased from 96 in 2011 to 115 in 2016. The goods surplus in these industries jumped from USD 40.3 billion (96 industries) to USD 46.7 billion (115 industries).

- The number of industries in which Korea has lower competitiveness than the U.S. dropped from 167 to 151 during the same period, and the goods deficit in these industries reduced from USD 28.7 billion (167 industries) to USD 23.5 billion (151 industries).
- The number of industries in which Korea has higher competitiveness than the rest of the world (RoW) except the U.S. increased from 93 to 101, while the goods surplus in these

industries dropped from USD 270.5 billion (93 industries) to USD 210.2 billion (101 industries).

○ The number of industries in which the U.S. has higher competitiveness than Korea decreased from 157 to 140, and the goods surplus in these industries also dropped from USD 23.8 billion (157 industries) to USD 21.4 billion (140 industries).

- The number of industries in which the U.S. has lower competitiveness than Korea increased from 110 to 126, and the goods deficit in these industries soared from USD 40.5 billion (110 industries) to USD 55.1 billion (126 industries).
- The number of industries in which the U.S. has higher competitiveness than the rest of the world (RoW) except Korea decreased from 99 to 78, while the goods surplus in these industries dropped from USD 313.8 billion (99 industries) to USD 282 billion (78 industries).

□ Korea has showed a steady TSI trend in trade with the rest of the world including the U.S. The U.S. TSI against the RoW has worsened, while its TSI in trade with Korea has improved.

○ The TSI in the industries where Korea has higher competitiveness than the U.S. dropped from 0.74 in 2011 to 0.7 in 2016, while that in the industries where Korea has lower competitiveness than the U.S. slightly increased from −0.7 to −0.67.

- The TSI in the industries where Korea has higher competitiveness than the rest of the world declined from 0.47 to 0.4, while that in the industries where Korea has lower competitiveness than the rest of the world improved from −0.62 to −0.54.

Table 8. Changes in TSI in the Distribution of Global Competitiveness of Korea and the U.S. and Goods Account

Category		Product frequency				TSI				Goods account (USD 100 million)			
		Korea		U.S.		Korea		U.S.		Korea		U.S.	
		2011	2016	2011	2016	2011	2016	2011	2016	2011	2016	2011	2016
Export specialized		57	69	80	62	0.76	0.73	0.77	0.74	378	436	173	151
Import specialized		131	119	91	110	-0.68	-0.66	-0.72	-0.68	-224	-185	-388	-501
Lower than the RoW and higher than the counterpart		39	46	77	78	0.49	0.45	0.35	0.59	25	31	65	63
Higher than the RoW and lower than the counterpart		36	32	19	16	-0.48	-0.34	-0.38	-0.55	-63	-50	-17	-50
Compared to the counterpart	Less competitive industry	167	151	110	126	-0.62	-0.55	-0.70	-0.67	-287	-235	-405	-551
	More competitive industry	96	115	157	140	0.74	0.70	0.58	0.69	403	467	238	214
Compared to the RoW	Less competitive industry	170	165	168	188	-0.62	-0.54	-0.47	-0.49	-2,513	-1,440	-12,271	-12,552
	More competitive industry	93	101	99	78	0.47	0.40	0.38	0.36	2,705	2,102	3,138	2,820

Note: TSI in the trade with the rest of the world (RoW) is the value calculated based on the volume of trade with the rest of the world except that between Korea and the U.S.
Source: KTSPI; USITC.

○ The U.S. recorded declining TSIs in all industries where the country has higher and lower RoW competitiveness, while its TSI in trade with Korea improved.

- The U.S. TSI in the industries where the country has higher RoW competitiveness slightly dropped from 0.38 to 0.36, and that in the industries where the country has lower RoW competitiveness also slightly decreased from −0.47 to −0.49.
- The U.S. TSI in the industries where the country has higher competitiveness in trade with Korea increased from 0.58 to 0.69, and that in the industries where the country has lower competitiveness in trade with Korea also went up from -0.7 to −0.67.

□ One-digit SITC: The U.S. has higher competitiveness in the categories of food and live animals, non-food raw materials, and vegetable/animal oils, fats and wax, while Korea has higher competitiveness in the categories of manufactured products, and machinery and transportation.

○ As of 2016, Korea is specialized in imports from the U.S. in the categories of food and live animals (-0.81), non-food raw materials (-0.78), and vegetable/animal oils, fats and wax (-0.94). In these industries, the country has lower RoW competitiveness as well.

- In these three industries, Korea's TSI in trade with the U.S. went up from 2011, and its RoW competitiveness also increased, resulting in a slight growth of the overall competitiveness of Korea, which is still low.

Table 9. Changes in TSI by Industry in Korea (1-digit SITC)

Category	Korea's trade competitiveness to the U.S.			Korea's RoW trade competitiveness		
	2011 (A)	2016 (B)	TSI changes (B-A)	2011 (C)	2016 (D)	TSI changes (D-C)
Food and live animals	-0.88	-0.81	0.06	-0.56	-0.58	-0.02
Beverages and tobacco	0.19	0.34	0.16	0.17	0.19	0.02
Non-food raw materials (except for fuel)	-0.81	-0.73	0.09	-0.66	-0.63	0.03
Mineral fuel, lubricant and relevant substances	0.00	0.11	0.11	-0.54	-0.52	0.02
Vegetable/animal oils, fats and wax	-0.97	-0.94	0.03	-0.88	-0.86	0.03
Chemicals and relevant products	-0.36	-0.35	0.01	0.16	0.22	0.06
Manufactured products by material	0.45	0.50	0.05	0.06	0.12	0.06
Machinery and transportation equipment	0.40	0.45	0.05	0.38	0.32	-0.06
Other manufactured products	-0.29	-0.16	0.12	0.16	-0.02	-0.18
Non-specified products and goods	0.24	0.28	0.04	0.35	0.21	-0.13

Source: KTSPI.

○ In the industries of manufactured products by material (0.5) and machinery and transportation equipment (0.45), Korea is specialized in exports, and it has higher RoW competitiveness.

- As Korea's TSI in the trade of manufactured products by material with the U.S. jumped from 2011 with the increase in its TSI against the RoW, Korea's RoW competitiveness seems to have affected the trade with the U.S.
- In the industry of machinery and transportation equipment, Korea's TSI in trade with the U.S. slightly increased during the same period, while its RoW competitiveness in this industry slightly dropped, implying that its relative competitiveness to the U.S. improved.

○ As of 2016, in the export-specialized industries, the U.S. competitiveness to Korea is much higher than its RoW competitiveness, which is an opposite picture to that of Korea.

- In the industry of food and live animals, the U.S. TSI against the RoW is −0.07, which is neutral, while its TSI in trade with Korea shows a strong export-specialized nature (0.81). In the industries of non-food raw materials and vegetable/animal oils, fats and wax, the U.S. TSI in trade with Korea is significantly higher than its TSI against the RoW.

Table 10. Changes in TSI by Industry in the U.S. (1-digit SITC)

Category	U.S. trade competitiveness to Korea			U.S. trade competitiveness to the RoW		
	2011 (A)	2016 (B)	TSI changes (B-A)	2011 (C)	2016 (D)	TSI changes (D-C)
Food and live animals	0.87	0.81	-0.06	0.03	-0.07	-0.11
Beverages and tobacco	-0.24	-0.36	-0.12	-0.54	-0.58	-0.04
Non-food raw materials (except for fuel)	0.79	0.67	-0.12	0.37	0.36	-0.00
Mineral fuel, lubricant and relevant substances	0.05	-0.11	-0.16	-0.54	-0.25	0.29
Vegetable/animal oils, fats and wax	0.95	0.94	-0.01	-0.22	-0.42	-0.20
Chemicals and relevant products	0.38	0.02	-0.36	-0.05	-0.09	-0.04
Manufactured products by material	-0.57	-0.62	-0.05	-0.35	-0.40	-0.05
Machinery and transportation equipment	-0.45	-0.48	-0.03	-0.25	-0.32	-0.06
Other manufactured products	0.15	-0.07	-0.22	-0.48	-0.53	-0.06
Non-specified products and goods	-0.11	-0.33	-0.22	-0.04	-0.29	-0.25

Source: USITC.

□ Korea is completely import-specialized in the industry of food and live animals due to its competitiveness much lower than that of the U.S.

○ Korea is fully import-specialized in the categories of beef, corn, livestock feed, other meat, and cheese/curd, where the country had lower competitiveness than the U.S. even before the implementation of the FTA.

- As of 2016, in terms of fruit and nuts, Korea's TSI against the RoW is −0.73, while its TSI in trade with the U.S. is −0.91, resulting a strong import-specialized nature. Likewise, in the categories of livestock feed, other meat, coffee and coffee substitute, the country's TSI in trade with the U.S. is lower than its TSI against the RoW.
- In the categories of milk and cream and vegetables, Korea's TSI to the U.S. is −0.33, while its TSI in trade with the RoW is −0.6, implying that Korea's import-specialized nature is stronger in trade with the rest of the world except the U.S.

Table 11. Changes in TSI in the Sector of Major Food and Live Animals in Korea (3-digit SITC)

Category	Korea's trade competitiveness to the U.S.			Korea's RoW trade competitiveness		
	2011 (A)	2016 (B)	TSI changes (B-A)	2011 (C)	2016 (D)	TSI changes (D-C)
Beef (fresh, chilled or frozen)	-1.00	-1.00	0.00	-0.97	-0.96	0.01
Corn	-1.00	-1.00	0.00	-1.00	-1.00	-0.00
Fruit and nuts (except nuts for oil; fresh or dried)	-0.88	-0.91	-0.02	-0.69	-0.73	-0.04
Livestock feed	-1.00	-1.00	-0.00	-0.84	-0.87	-0.03
Other meat and edible offal (fresh, chilled or frozen)	-1.00	-1.00	0.00	-0.96	-0.96	0.00
Wheat (including spelt wheat) and meslin (non-milled)	-1.00	-1.00	0.00	-1.00	-1.00	-0.00
Fish (fresh, chilled or frozen)	-0.42	-0.40	0.02	-0.26	-0.39	-0.13
Processed grain products and grain flour	-0.06	0.03	0.09	-0.20	-0.25	-0.05
Cheese and curd	-1.00	-1.00	0.00	-0.99	-0.98	0.01
Rice (including paddy rice)	-1.00	-0.97	0.02	-0.96	-0.96	0.00
Coffee and coffee substitute	-0.63	-0.75	-0.12	-0.51	-0.52	-0.02
Milk, cream and milk products (except butter and cheese)	-0.56	-0.29	0.27	-0.81	-0.48	0.33
Vegetables (fresh, chilled, frozen or simply stored)	-0.34	-0.33	0.01	-0.66	-0.60	0.06

Source: KTSPI.

○ As of 2016, the U.S. competitiveness to the RoW in the industry of major food and live animals dropped from 2011, implying a weakening competitiveness of the country.

- In terms of beef, the country's TSI in trade with the RoW was 0.14 with export-specialized nature in 2011, but it reduced to −0.08 with import-specialized nature in 2016.[26)]

26) As of 2016, the U.S. imports beef mainly from Australia (26.2%), Canada (25.5%), and New Zealand (20.8%), while the country exports beef mainly to Japan (25.0%), South Korea (20.5%), and Mexico (15.3%). The U.S. TSI in trade with the RoW shifted to the import-specialized nature from 2014 as Korea, a major trading partner for the export of beef, was excluded from TSI in trade with the RoW. When Korea is included, the country has been specialized in export in this category except the period from 2007 to 2008 and 2015.

Table 12. Changes in TSI in the Sector of Major Food and Live Animals in the U.S. (3-digit SITC)

Category	U.S. trade competitiveness to Korea			U.S. trade competitiveness to the RoW		
	2011 (A)	2016 (B)	TSI changes (B-A)	2011 (C)	2016 (D)	TSI changes (D-C)
Beef (fresh, chilled or frozen)	1.00	1.00	0.00	0.14	-0.08	-0.23
Corn	1.00	1.00	-0.00	0.93	0.89	-0.04
Fruit and nuts (except nuts for oil; fresh or dried)	0.88	0.90	0.02	-0.03	-0.14	-0.12
Livestock feed	1.00	1.00	-0.00	0.62	0.57	-0.04
Other meat and edible offal (fresh, chilled or frozen)	1.00	1.00	-0.00	0.64	0.52	-0.12
Wheat (including spelt wheat) and meslin (non-milled)	1.00	1.00	-0.00	0.88	0.82	-0.06
Fish (fresh, chilled or frozen)	0.72	0.69	-0.04	-0.36	-0.51	-0.16
Processed grain products and grain flour	-0.17	-0.10	0.06	-0.24	-0.31	-0.07
Cheese and curd	1.00	1.00	-0.00	-0.16	-0.12	0.03
Rice (including paddy rice)	0.99	0.98	-0.02	0.48	0.41	-0.07
Coffee and coffee substitute	0.71	0.74	0.03	-0.80	-0.76	0.04
Milk, cream and milk products (except butter and cheese)	0.76	0.52	-0.24	0.70	0.63	-0.07
Vegetables (fresh, chilled, frozen or simply stored)	0.52	0.29	-0.24	-0.42	-0.45	-0.04

Source: USITC.

□ Korea has much higher competitiveness than the U.S. in the industry of machinery and transportation equipment, implying a strong export-specialized nature.

○ As of 2016, Korea's competitiveness is higher than the rest of the world including the U.S. in the categories of passenger cars and other vehicles (0.81), parts and components of tractors and vehicles (0.89), parts and components of office/automatic data processing machines (0.92), civil engineering equipment (0.76), and fabric/leather processing machineries (0.97).

- Korea relies on imports with low RoW competitiveness in the categories of other machineries and equipment for special industries, aircraft and relevant equipment, and spacecraft, particularly in the trade with the U.S. than the rest of the world.

Table 13. Changes in Trade Competitiveness in the Sector of Major Machineries and Transportation Equipment in Korea (3-digit SITC)

Category	Korea's trade competitiveness to the U.S.			Korea's RoW trade competitiveness		
	2011 (A)	2016 (B)	TSI changes (B-A)	2011 (C)	2016 (D)	TSI changes (D-C)
Passenger cars and other vehicles	0.92	0.81	-0.12	0.82	0.48	-0.33
Parts and components of tractors, passenger cars, trucks and other vehicles	0.85	0.89	0.04	0.62	0.64	0.02
Thermionic, cold-cathode, or photo-cathode valves and tubes	-0.51	-0.32	0.19	0.25	0.30	0.04
Other machineries and equipment for special industries, and non-specified relevant parts and components	-0.52	-0.51	0.01	-0.25	-0.05	0.20
Aircraft and relevant equipment, spacecraft	-0.57	-0.51	0.06	-0.69	-0.12	0.57
Parts and components of office/automatic data processing machines	0.85	0.92	0.06	0.25	0.02	-0.22
Automatic data processing machines	0.42	0.58	0.16	-0.26	-0.21	0.04
Engines, motors, non-electric engines, non-specified engines	-0.56	-0.74	-0.17	-0.18	-0.17	0.01
Heating and cooling devices, non-specified relevant parts and components	0.05	0.47	0.42	0.38	0.41	0.03
Civil engineering equipment	0.78	0.76	-0.02	0.80	0.70	-0.10
Fabric and leather processing machineries, non-specified relevant parts and components	0.98	0.97	-0.01	0.47	0.53	0.06

Source: KTSPI.

○ In the industry of major machineries and transportation equipment, the U.S. TSI in trade with the RoW is a negative number in most subcategories with import-specialized nature. The country's RoW competitiveness declined from 2011.

- The country's competitiveness in the categories of civil engineering equipment and fabric/leather processing machineries weakened by 0.4 and 0.27, respectively.

Table 14. Changes in Trade Competitiveness in the Sector of Major Machineries and Transportation Equipment in the U.S. (3-digit SITC)

Category	U.S. trade competitiveness to Korea			U.S. trade competitiveness to the RoW		
	2011 (A)	2016 (B)	TSI changes (B-A)	2011 (C)	2016 (D)	TSI changes (D-C)
Passenger cars and other vehicles	-0.93	-0.85	0.08	-0.46	-0.53	-0.07
Parts and components of tractors, passenger cars, trucks and other vehicles	-0.73	-0.82	-0.09	-0.13	-0.21	-0.08
Thermionic, cold-cathode, or photo-cathode valves and tubes	0.00	-0.11	-0.11	-0.15	-0.24	-0.10
Other machineries and equipment for special industries, and non-specified relevant parts and components	0.58	0.69	0.11	-0.04	0.00	0.04
Aircraft and relevant equipment, spacecraft	0.32	0.48	0.16	0.58	0.59	0.01
Parts and components of office/automatic data processing machines	-0.95	-0.93	0.01	-0.48	-0.52	-0.03
Automatic data processing machines	-0.62	0.06	0.68	-0.72	-0.74	-0.02
Engines, motors, non-electric engines, non-specified engines	-0.03	0.16	0.19	-0.30	-0.41	-0.11
Heating and cooling devices, non-specified relevant parts and components	-0.13	-0.53	-0.39	-0.09	-0.28	-0.20
Civil engineering equipment	-0.19	-0.60	-0.41	0.30	-0.11	-0.40
Fabric and leather processing machineries, non-specified relevant parts and components	-0.97	-0.97	0.01	-0.30	-0.57	-0.27

Source: USITC.

3.3. Analysis of TSI of Korea and the U.S. in the Agri-food Sector[27)]

□ The merchandise trade in the agri-food sector has an unbalanced trade structure in which Korea's imports are much larger than its exports to other countries.

○ The number of more competitive commodities of Korea than the U.S. decreased from 122 in 2011 to 119 in 2016; however, a surplus in the goods account of these commodities rose from USD 200 million (122) to USD 400 million (119).

- The number of less competitive commodities of Korea than the U.S. increased from 217 to 224 in the same period, and a deficit in the goods account of these commodities was improved from USD 5.8 billion (217) to USD 5.4 billion (224).
- The number of competitive Korean commodities for the rest of world (RoW) except for the U.S. increased from 121 to 122, and a surplus in the goods account of these commodities was on the increase from USD 1.9 billion (121) to USD 2.4 billion (122).

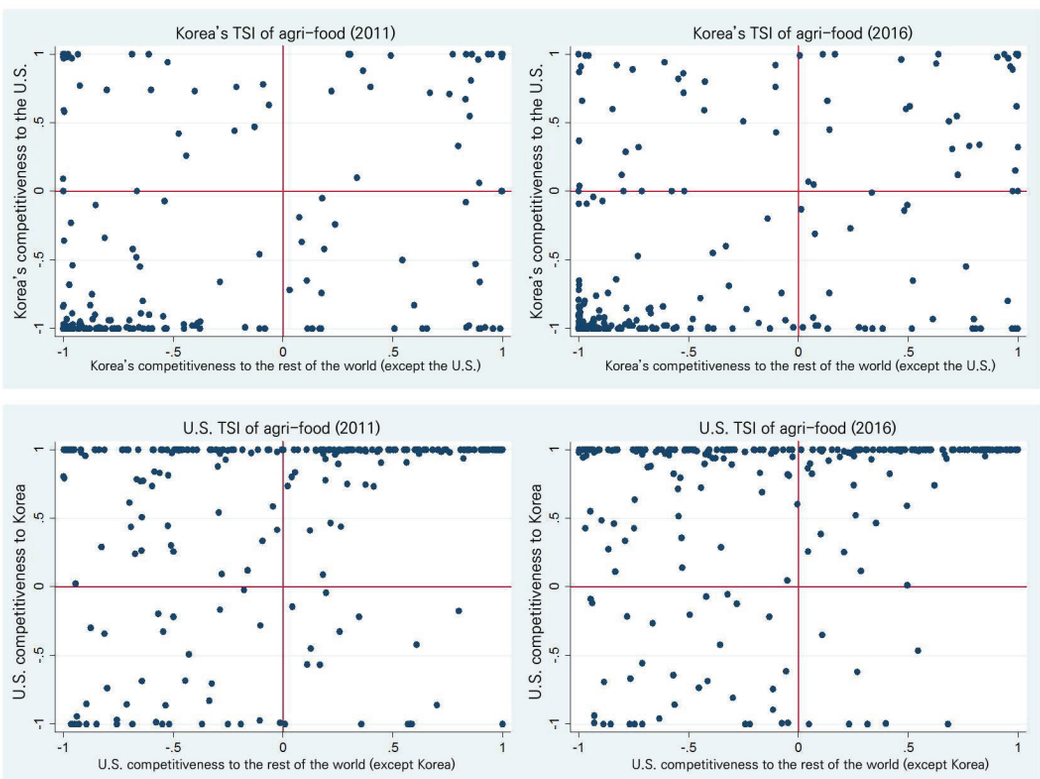
○ The number of more competitive commodities of the U.S. than Korea increased from 320 to

27) In the TSI analysis in the agri-food sector, 372 commodities of the 5-digit SITC were analyzed based on the "Food and Live Animals" and "Beverages and Tobacco" among the 1-digit SITC categories.

331, but a surplus in the goods account of these commodities dropped from USD 5.5 billion (320) to USD 5.1 billion (331).

- The number of less competitive commodities of the U.S. than Korea decreased from 52 to 41, and a deficit in the goods account of these commodities slightly increased from USD 200 million (52) to USD 400 million (41).
- The number of competitive commodities of the U.S. for the RoW except for Korea was on the decrease from 212 to 195, and a surplus in the goods account of these commodities decreased from USD 60 billion (212) to USD 52 billion (195).

Figure 5. Distribution of TSI by Commodity in the Agri-food Sector (5-digit SITC) in Korea and the U.S. (2016)



Note 1) TSI values were estimated in Categories 0 (food and live animals) and 1 (beverages and tobacco) among the 1-digit SITC, and there are a total of 372 SITC codes in these categories.
2) TSI in the trade with the rest of the world (RoW) is the value calculated based on the volume of trade with the rest of the world except that between Korea and the U.S.
Source: KTSPI; USITC.

□ The TSI of Korea in the agri-food sector is absolutely lower than that of the U.S.

○ As of 2016, the TSI of more competitive product groups of Korea than the U.S. is 0.61, which is lower than that of the U.S. (0.97). The TSI of less competitive product groups is much lower

(-0.94) than the U.S. (-0.66) as well.

- The TSI of more competitive product groups of Korea than the U.S. dropped from 0.68 in 2011 to 0.61 in 2016, while the TSI of less competitive product groups slightly increased from -0.96 to −0.94.

Table 15. Change in TSI and Goods Account in the Distribution of Trade Competitiveness of Agri-food Commodities (5-digit SITC)

Category		Product frequency				TSI				Goods account (USD 100 million)			
		Korea		U.S.		Korea		U.S.		Korea		U.S.	
		2011	2016	2011	2016	2011	2016	2011	2016	2011	2016	2011	2016
Export specialized		92	93	196	187	0.70	0.63	0.98	0.97	1	3	48	42
Import specialized		188	195	36	33	-0.99	-0.99	-0.57	-0.61	-54	-45	-2	-3
Lower than the RoW and higher than the counterpart		30	26	124	144	0.62	0.57	0.94	0.95	1	1	7	9
Higher than the RoW and lower than the counterpart		29	29	16	8	-0.66	-0.76	-0.67	-0.79	-4	-8	-1	-2
Compared to the counterpart	Less competitive industry	217	224	52	41	-0.96	-0.94	-0.60	-0.66	-58	-54	-2	-4
	More competitive industry	122	119	320	331	0.68	0.61	0.98	0.97	2	4	55	51
Compared to the RoW	Less competitive industry	218	221	160	177	-0.88	-0.86	-0.61	-0.62	-107	-113	-550	-684
	More competitive industry	121	122	212	195	0.47	0.50	0.66	0.58	19	24	600	520

Source: KTSPI; USITC.

○ The U.S has an absolutely higher TSI than Korea, but the competitiveness against the RoW and Korea has decreased.

- The TSI of U.S. industries with a higher competitive edge than the RoW slightly declined from 0.66 to 0.58, while the TSI of industries with a lower competitive edge decreased from -0.61 to -0.62 as well.
- The TSI of more competitive industries of the U.S. than Korea decreased from 0.98 to 0.97, and the TSI of less competitive industries of the U.S. worsened from -0.6 to -0.66.

□ Due to the reduced amount of trade, grain-related commodities improved a deficit in the goods account against the U.S., whereas a deficit in the goods account of livestock products (including dairy products), fruits and nuts worsened after the FTA took effect.

○ Grains: The TSI of corns for animal feeding, flour and brown rice of Korea against the U.S. has

no change at the level of −1 before and after the FTA took effect (TSI for the RoW is -1 as well). Along with the reduced total amount of trade with the U.S., a deficit in the goods account against the U.S. was improved to some extent.

- The total amount of trade in corns for animal feeding, flour and brown rice with the U.S. decreased by USD 1.1 billion, 200 million and 40 million, respectively. A deficit in the goods account was improved by the same amount.

○ Livestock products: A deficit in the goods account of the meat of bovine animals against the U.S. increased by USD 150 million in carcass and 200 million in boneless meat, but the meat of swine saw improvement by USD 80 million due to the decreased competitive edge of the U.S. against the RoW.

- The TSI of U.S. chilled and frozen meat of swine against the RoW dropped from 0.52 and 0.77 in 2011 to 0.47 and 0.58 in 2016, respectively.
- The TSI of Korea's meat of bovine animals and swine against the U.S. is -1, which is completely specialized in import. While the TSI of bovine carcass against the RoW dropped from -0.88 to -0.92, that of boneless meat was slightly improved from -0.99 to −0.97.
- Among dairy products, a deficit in the goods account of cheese (fresh) and skim milk powder increased by USD 10 million and 8 million, respectively, and has no change at the TSI level of −1.

○ Fruit: A deficit in the goods account of oranges, other stone fruits, lemons and grapes against the U.S. increased by USD 50 million, 60 million, 20 million, 8 million and 6 million, respectively. The total amount of trade with the U.S. rose by the same increase in the deficit of goods account.

- Korea is specialized in the export of pears both against the U.S. and RoW. A surplus in the goods account against the U.S. increased by USD 6 million.

○ Nuts: A deficit in the goods account of almonds and walnuts worsened by USD 90 million and 3 million, respectively.

- The total amount of trade in almonds with the U.S. significantly rose by 106.3% from USD 85 million in 2011 to 175 million in 2016.

Table 16. Changes in Korea's Goods Account and TSI against the U.S. in the Agri-food Sector

Category	Total trade volume with the U.S. (USD 100 million)		Goods account in trade with the U.S. (USD 100 million)		TSI against the U.S.		TSI against the RoW	
	2011	2016	2011	2016	2011	2016	2011	2016
Corn for feeding	19.34	8.29	-19.34	-8.29	-1.00	-1.00	-1.00	-1.00
Other food preparations	4.13	7.67	-2.98	-5.70	-0.72	-0.74	0.03	0.14
Beef (carcasses and half-carcasses)	2.59	4.06	-2.58	-4.06	-1.00	-1.00	-0.88	-0.92
Beef (boneless)	3.31	5.34	-3.31	-5.33	-1.00	-1.00	-0.99	-0.97
Pork (frozen)	4.09	3.33	-4.09	-3.33	-1.00	-1.00	-1.00	-1.00
Wheat	5.06	2.91	-5.06	-2.91	-1.00	-1.00	-1.00	-1.00
Roots vegetables for feeding	2.30	2.31	-2.30	-2.31	-1.00	-1.00	-1.00	-1.00
Orange	1.62	2.10	-1.62	-2.10	-1.00	-1.00	-1.00	-0.99
Animal feed (brewing or distilling dregs)	1.31	1.85	-1.31	-1.85	-1.00	-1.00	-1.00	-1.00
Almond (with shell)	0.85	1.75	-0.85	-1.74	-1.00	-0.99	-0.08	0.02
Cheese (fresh)	1.28	1.38	-1.28	-1.38	-1.00	-1.00	-1.00	-0.99
Other stone fruits (fresh)	0.45	1.10	-0.45	-1.10	-1.00	-1.00	-0.88	-0.87
Potato (prepared or preserved)	0.63	1.08	-0.63	-1.08	-1.00	-1.00	-1.00	-1.00
Bread (others)	0.75	1.05	-0.15	0.05	-0.19	0.05	0.08	0.07
Filter tip cigarettes	0.29	1.04	0.29	1.04	1.00	1.00	0.86	0.94
Water and other non-alcoholic beverages	0.56	0.93	0.18	0.51	0.33	0.55	0.80	0.72
Walnut (with shell)	0.82	0.85	-0.81	-0.84	-0.99	-0.99	0.84	-0.93
Animal feed (other feed preparations)	0.32	0.71	-0.30	-0.70	-0.95	-0.98	-0.37	-0.60
Coffee and coffee substitutes (containing caffeine)	0.26	0.61	-0.26	-0.60	-1.00	-0.99	-0.97	-0.94
Mixed seasonings	0.37	0.57	0.17	0.24	0.47	0.43	-0.13	-0.10
Husked (brown) rice	0.91	0.57	-0.91	-0.56	-1.00	-0.99	-1.00	-1.00
Stuffed pasta	0.34	0.54	0.33	0.53	0.96	0.98	0.89	0.91
Tongues (of cow, frozen)	0.49	0.50	-0.49	-0.50	-1.00	-1.00	-1.00	-0.99
Chocolate and chocolate confectionery (2kg and over)	0.52	0.48	-0.51	-0.47	-0.99	-0.98	-0.66	-0.85
Dog or cat food (for retail sale)	0.27	0.42	-0.27	-0.42	-0.99	-0.99	-0.71	-0.81
Sausage	0.22	0.33	-0.22	-0.33	-0.98	-1.00	-0.41	0.13
Lemon (fresh, dried)	0.09	0.31	-0.09	-0.31	-1.00	-1.00	-1.00	-1.00
Semi-milled or wholly milled rice (except broken rice)	0.34	0.31	-0.34	-0.29	-0.99	-0.94	-0.84	-0.74
Of rice flour	0.23	0.30	-0.12	-0.09	-0.50	-0.31	0.54	0.08
Margarine and shortening (others)	0.30	0.30	-0.30	-0.29	-0.98	-0.98	-0.40	-0.77
Pear (fresh)	0.24	0.29	0.24	0.29	1.00	1.00	1.00	1.00
Unmanufactured tobacco, tobacco refuse (flue-cured)	0.11	0.28	-0.11	-0.28	-1.00	-1.00	-0.83	-0.92

(Continued)

Category	Total trade volume with the U.S. (USD 100 million)		Goods account in trade with the U.S. (USD 100 million)		TSI against the U.S.		TSI against the RoW	
	2011	2016	2011	2016	2011	2016	2011	2016
Beef (with bone)	0.09	0.27	-0.09	-0.27	-1.00	-1.00	-1.00	-0.96
Preserved fruit and fruit preparations (others)	0.15	0.26	-0.12	-0.22	-0.80	-0.85	-0.64	-0.67
Sugar confectionery (others)	0.13	0.25	-0.10	-0.22	-0.74	-0.86	0.18	-0.24
Grape (fresh)	0.15	0.24	-0.14	-0.22	-0.93	-0.93	-0.98	-0.93
Red wine	0.12	0.21	-0.12	-0.21	-1.00	-0.99	-0.96	-1.00
Coffee extract (extracts and essences, etc.)	0.12	0.20	0.01	-0.02	0.10	-0.10	0.34	0.50
Cheese (processed)	0.13	0.31	-0.13	-0.30	-1.00	-0.98	-0.99	-0.95
Other nuts (prepared, preserved)	0.16	0.20	-0.15	-0.17	-0.95	-0.86	-0.92	-0.68
Pork (fresh, chilled)	0.52	0.19	-0.52	-0.19	-1.00	-1.00	-1.00	-1.00
Sweet corn	0.19	0.19	-0.19	-0.19	-1.00	-1.00	-1.00	-0.98
Cornflake	0.15	0.18	-0.04	-0.05	-0.24	-0.27	0.24	0.24
Spaghetti, macaroni	0.18	0.18	0.17	0.17	0.94	0.94	-0.52	-0.61
Horse (for farm breeding)	0.10	0.18	-0.10	-0.18	-1.00	-1.00	-0.93	-0.97
Other beef (fresh, chilled)	0.04	0.18	-0.04	-0.18	-1.00	-1.00	-1.00	-1.00
Chocolate and chocolate confectionery (others)	0.10	0.17	-0.09	-0.17	-0.90	-0.99	-0.86	-0.92
Grapefruit (fresh, dried)	0.11	0.16	-0.11	-0.16	-1.00	-1.00	-1.00	-1.00
Malt extract, preparations of malt extract	0.10	0.16	0.03	0.08	0.26	0.51	-0.44	-0.25
Other nuts	0.17	0.16	-0.17	-0.16	-0.99	-0.99	-0.98	-0.96
Pork (prepared, preserved)	0.05	0.16	-0.05	-0.16	-1.00	-1.00	-0.95	-0.49
Fruit juice (frozen)	0.17	0.16	-0.17	-0.16	-1.00	-1.00	-0.98	-0.99
Other alcoholic distilled beverages	0.10	0.15	0.07	0.09	0.72	0.60	0.67	0.49
Lactose and lactose syrup	0.13	0.15	-0.13	-0.15	-0.99	-1.00	-1.00	-0.99
Chocolate and chocolate confectionery (others)	0.17	0.15	-0.17	-0.14	-1.00	-0.98	-0.90	-0.75
Beer	0.08	0.14	-0.03	-0.06	-0.37	-0.40	0.09	-0.33
Ice cream and other edible ice	0.14	0.13	-0.01	0.06	-0.05	0.45	0.18	0.14
Pork (others)	0.32	0.13	-0.32	-0.13	-1.00	-1.00	-0.99	-0.97
Juice of any other single fruit or vegetable	0.13	0.12	-0.12	-0.11	-0.91	-0.92	-0.54	-0.88
Skim milk powder	0.03	0.12	-0.03	-0.12	-1.00	-1.00	-1.00	-0.98
Other tomato (prepared, processed)	0.10	0.12	-0.10	-0.12	-1.00	-1.00	-1.00	-1.00
Other vegetable (prepared, processed)	0.06	0.11	0.05	0.09	0.76	0.80	-0.21	-0.43
Mushrooms and truffles	0.06	0.10	0.06	0.10	1.00	1.00	0.31	0.11
Other fruit (fresh)	0.14	0.10	-0.14	-0.10	-1.00	-0.99	-0.75	-0.67
Sweet biscuits; waffles and wafers	0.01	0.10	-0.01	-0.09	-0.83	-0.89	-0.88	-0.67
Grape (dried)	0.09	0.10	-0.09	-0.10	-1.00	-1.00	-1.00	-0.87
Pork; bellies (streaky) and cuts thereof	0.06	0.10	-0.06	-0.10	-1.00	-1.00	-1.00	-0.99

Note: Major commodities are the ones with over USD 10 million of the total volume of trade with the U.S. as of 2016.
Source: KTSPI.

04 Summary and Implications

□ U.S. President Donald Trump expressed his willingness to revise and amend the Korea-U.S. FTA, with his negative perspective on the trade imbalance between the two countries. Korea and the U.S. recently agreed to renegotiate the trade pact.

○ President Trump expressed a negative view on the KORUS FTA in his Republican nomination acceptance speech and other campaign speeches, while other political figures also claimed in major media interviews that the trade agreement should be renegotiated.

○ The USTR requested that its South Korean counterpart hold a special joint committee on the Korea-U.S. FTA in Washington, D.C. (July 12, 2017). As a result of the first meeting (on August 22, 2017) and the second meeting requested by the Korean government (on October 4, 2017), the two governments decided to initiate the renegotiation procedure for the FTA.

□ In terms of BOP, Korea has recorded current account surplus, but it has invested more in the U.S. than the counterpart did in Korea.

○ Korea's average investment (financial account) in the U.S. improved from USD 3.1 billion of liabilities to assets worth USD 18.1 billion after the implementation of the FTA. The country's average current account surplus went up by 106.7% from USD 16.2 billion to USD 33.5 billion after the implementation of the FTA.

○ Most of Korea's current account surplus used to come from trades with the U.S. (97.8%) in the past, but the share of the U.S. significantly dropped to 37.9% after the agreement entered into force. In terms of Korea's ratio in the U.S. balance of payments, the ratio in the current account deficit is less than 5%, and the percentage in the financial account is less than 10%.

○ Korea's current account surplus with the U.S. has recently been on the decline. The deficit of intellectual property rights royalties in the service account was on average of USD 3.1 billion in the past, and it increased by a whopping 69.9% to an average of USD 5.3 billion after the agreement entered into force.

□ The agricultural, forestry and fisheries industry and the chemical industry recorded the goods deficit with the U.S., while the machinery, electronic/electric, and steel/metal industries

showed a goods surplus.

○ After the implementation of the FTA, the average goods deficit in the agricultural, forestry and fisheries industry jumped from USD 5.1 billion to USD 5.8 billion.

○ The goods deficit of grains and feed has decreased, while that of root/tuber crops, fruit, nuts, livestock meats, honey/royal jelly, and dairy products has significantly grown.

○ The goods surplus in the machinery industry increased from USD 5.6 billion to USD 18.3 billion after the implementation of the trade pact, while that in the electronic/electric industry dropped from USD 9.4 billion to USD 8.6 billion during the same period.

□ Korea and the U.S. is in a complementary trade relationship in that each country exports commodities with high competitiveness and imports those with low competitiveness, but the trade in the agri-food sector is in an unbalanced structure.

○ One-digit SITC: The U.S. has higher competitiveness in the categories of food and live animals, non-food raw materials, and vegetable/animal oils, fats and wax, while Korea has higher competitiveness in the categories of manufactured products, and machinery and transportation equipment.

○ Five-digit SITC: In the agri-food sector in Korea, 119 commodities with higher competitiveness than the U.S. recorded a goods surplus of USD 0.4 billion, while 224 commodities with lower competitiveness than the U.S. showed a goods deficit of USD 5.4 billion.

○ In trades with the U.S., the goods deficit of grain-related commodities dropped due to the decline in trade volume, while that of livestock products (including dairy products), fruit and nuts grew after the FTA entered into force.

□ Trade imbalance between Korea and the U.S implies that a balanced, adequate view on it can be made when a macroscopic BOP including the current (goods) account is considered.

○ The Korea-U.S. trade of goods and services has expanded after the trade pact was implemented, but the proportion of the U.S. in Korea’s total trade volume has been on the decline, while Korea’s investment in the U.S. has been on the increase.

○ In the industries where U.S. goods deficit with Korea has increased, the country’s competitiveness to the rest of the world is also low.

○ In the agri-food sector, where Korea largely relies on imports from the U.S., Korea's goods deficit with the U.S. went up due to the expanded trade volume after the implementation of the FTA. This led to a growing number of commodities designated to be subject to the direct payment policy designed for compensating revenue loss incurred by the FTA and the support policy for those who go out of business due to the FTA.

□ The merchandise trade imbalance between the two countries should be addressed without going against the purpose of the free trade agreement.

○ For the renegotiation of the FTA in the agricultural sector, the U.S. government claimed that the tariffs should be immediately abolished for 545 items produced in the U.S. that still have import tariffs, and that it needs five to ten more years to eliminate the tariffs on 337 items produced in Korea (Maeil Business Newspaper, 9 Oct 2017).

○ Since Korea is strongly import-specialized in the agri-food sector, the current unbalanced structure can become permanent if the tariffs for agricultural products imported from the U.S. are immediately abolished, and this could affect the free trade agreements Korea concluded with other countries. Therefore, both countries should be careful in adjusting the tariffs and the tariff elimination timing for agricultural and livestock products produced in the U.S.

○ The resolution of goods deficit should be aimed at enhancing the domestic and global competitiveness, rather than readjusting the tariff elimination timing. Recent studies also point out that the current account deficit of the U.S. cannot be addressed by protective trade policies and that the country needs national adjustment policies that can facilitate the flow of labor and capital.

□ Korea needs to exert efforts to improve the structure of the agri-food sector that largely relies on imports, and set the direction of policies by considering the domestic agricultural industry structure and market conditions.

○ In order to improve the current import-specialized structure of the agri-food sector in trade with the U.S. and the rest of the world, the authorities should explore promising new items for export, analyze the characteristics of overseas markets, strengthen the support system for the export of agricultural products, and organize the overseas marketing board, thereby improving the competitiveness of the country.

○ The authorities should also consider the changing consumer demand and market conditions to reorganize the production and distribution structure for the supply of safe and quality agri-food, strengthen R&D projects, improve breeds, and nurture new agricultural human resources. Furthermore, the awareness of the government and agricultural sector for the industry and agricultural policies should be improved, which requires a cooperative system at the level of governance.