Proposed U.S. – South Korea Free Trade Agreement: Potential National Sector-Specific and State Export Effects

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Summary

In February 2011, the United States and South Korea finalized negotiations on a bilateral free trade agreement. As a result, the Obama Administration is expected to submit implementing legislation to the 112th Congress on the proposed U.S.-South Korea Free Trade Agreement (KORUS FTA). This report addresses congressional interest in the effects of this agreement on exports by state to South Korea by using two sets of data. Data developed by the U.S. International Trade Commission (USITC) are used to identify the possible direction of trade change for 40 industries at the national level. These results are paired with lists of each state's top 10 exports which provide a guide to the possible direction of trade for various state industries as a result of tariff elimination and tariff rate quota reductions under the proposed KORUS FTA. Improved access for services, liberalized investment regimes, and elimination of non-tariff barriers for a few goods and agricultural products are not captured in this analysis.

Estimating the trade effects of a potential FTA, however, is highly sensitive to the assumptions used and to important limitations of the available data. Such estimates are especially problematic at the state level. As a result, the data in this report should be viewed as providing a general sense of the possible impact of the proposed FTA on state level exports. Over the full implementation period of the agreement, a broad range of economic factors can overwhelm the potential effects of tariff and tariff rate quota provisions. Whether a state's exports are higher as a result of the KORUS FTA will depend significantly on whether firms that now export take advantage of the market openings (e.g., declining or eliminated tariffs, expanding or phased out quotas) negotiated in this trade agreement. In addition, the extent to which state exports change in the same pattern as projected by the USITC estimates, will depend on the extent to which they echo the makeup of the respective industry at the national level.

While South Korea is the United States' seventh largest trading partner, it accounts for less than 3% of all U.S. trade. It has a population one-sixth that of the United States. By comparison, Canada and Mexico, the United States' first and third largest trading partners, with whom the United States also has a trade agreement (the North American Free Trade Agreement (NAFTA)), accounted for 16% and 12% respectively of total U.S. trade in 2010.

The impact of the KORUS FTA on the exports of individual states reflects both projected national effects on industrial sectors and the composition of industries within each state. Manufactured products currently dominate U.S.-South Korea trade, and the dollar value of exports in virtually all industries is expected to be higher than without a trade agreement. However, the greatest sectoral growth rate in trade is expected to come from agricultural exports, in states with large agricultural sectors. Higher imports in some industries, particularly auto and parts production, are not expected to affect gross exports, but could affect net exports.

The discussion in this report is limited to presenting the effects of the KORUS FTA on U.S. exports to South Korea on a national level with possible implications at the state level. It does not present data on U.S. imports from South Korea at the state level because of data issues. Nevertheless, increases in imports in some sectors and in some states could be higher than increases in exports as a consequence of the FTA.

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This report provides indications of the possible effects of the proposed U.S.-Korea Free Trade Agreement (KORUS FTA) on individual states.[1] For each state the indications result from pairing two sets of data. The first set is based on U.S. International Trade Commission (USITC)-estimated changes in U.S. exports and imports at the national level after full implementation of the KORUS FTA, compared to what trade with South Korea would be under a no-agreement scenario.[2] The second set, included in **Appendix A**, is Census Bureau data which tracks the annual movement of exports to their foreign destination—in this case South Korea—by state.

Whether a state's exports are higher as a result of the KORUS FTA will depend significantly on whether firms that now export take advantage of the market openings (e.g., declining or eliminated tariffs, expanding or phased out quotas) negotiated in this trade agreement. In addition, the extent to which a state's exports change in the same pattern as projected by the USITC estimates will depend on the extent to which the industry in a given state echoes the makeup of the respective industry at the national level. However, because the model upon which USTIC estimates were based uses only highly aggregated sectors, the extent of that similarity or difference cannot be determined. Therefore, the indication of industries for which net exports (exports minus imports) are projected to increase or decrease as listed in **Table 4** should be viewed as providing a general "compass" rather than serving as a precise global positioning system in projecting state industry export changes upon full implementation of the KORUS FTA.[3]

Estimating the trade effects of FTAs, including the proposed KORUS FTA, is imprecise and highly sensitive to the assumptions that are used.[4] For greater detail, see **Appendix C,** which discusses trade models used by the USITC and shortfalls associated with Census Bureau state-level trade data. As detailed in the appendix, such estimates are even more problematic at the state level for several reasons. One is the interplay between state industrial composition and problems inherent in the data to measure state exports to a foreign country. That is, the data tend to overestimate agricultural and/or manufacturing exports for some states, and underestimate them for others. In addition, the data capture the export value of the finished product and assign that entire value to the final state from which the product is exported. As a result, the data do not capture the value added by production that occurs in other states. Moreover, while trade agreements generally are comprehensive in nature and cover goods, services[5], and

[1] For a general discussion of the effects of the KORUS FTA, see CRS Report RL34330, *The Proposed U.S.-South Korea Free Trade Agreement (KORUS FTA): Provisions and Implications*, by William H. Cooper

[2] USITC, *U.S.-Korea Free Trade Agreement: Potential Economy-wide and Selected Sectoral Effects*, Publication 3949, September 2007. Seven chapters plus additional material.

[3] Full implementation will occur for many products within 10 years, with some provisions applicable to sensitive agricultural products to be phased in over 23 years.

[4] Thomas Hertel, David Hummels, Maros Ivanic, and Roman Keeney, *How Confident Can We Be in CGE-Based Assessments of Free Trade Agreements?*, GTAP Working Paper No. 26, March 2004; Martina A. Brockmeier, *A Graphical Exposition of the GTAP Model*, GTAP Technical Paper No. 8, March 2001. See also CRS Report R41660, *Proposed U.S.-South Korea Free Trade Agreement and Potential Employment Effects: Analysis of Studies*, by Mary Jane Bolle and James K. Jackson.

[5] This report does not attempt to estimate the value of trade in services by state. Services differ from manufactured goods in that they are intangible, cannot be stored and must be consumed at the point of production. Rapid changes in technology, however, are reducing even these restrictions on services. Illustrative examples of tradable services include information; banking and insurance; professional, scientific, and technical services; education; arts and entertainment; communication and health care. As a result of these and other complications, trade in services is difficult to value, (continued...)

investment, estimates of exports focus narrowly on the goods sector and do not adequately represent the total impact of the agreements. In addition to the national-level estimates featured in this report, states may experience a broad range of benefits from liberalizing trade in services and reducing or eliminating barriers to investment flows. Provisions that reduce barriers to trade in services potentially could have a large and positive effect on the U.S. economy, since the United States is highly competitive in a number of services sectors and U.S. direct investment abroad often spurs exports.

U.S.-South Korea Trade

South Korea is the seventh largest U.S. export partner, receiving nearly $39 billion in U.S. goods exports, or about 3% of all such U.S. exports of almost $1.3 trillion in 2010. Individual state shares of these exports varied from 21% (California) to 0.03% (South and North Dakota). When services exports are added, total combined U.S. exports to South Korea in 2010 totaled about $55 billion (**Table 1**).

In contrast, the United States imported nearly $60 billion in goods and services from South Korea in 2010. Goods accounted for $49 billion, or about 2.6% of total U.S. goods imports of $1.9 trillion. As a consequence, the United States experienced a merchandise trade deficit with South Korea in 2010 of $10 billion, or about 1.5% of the total U.S. merchandise trade deficit. Despite being the seventh largest U.S. trade partner, export opportunities for the United States are limited because of the size of the South Korean market, which consists of some 50 million consumers.

Table 1. U.S. Goods and Services Traded with South Korea and the World, 2010

	U.S. Trade (in $billions) with:		U.S. Trade with South Korea as % of Trade with World
	South Korea	World	
Exports			
Goods	$39	$1,278	3.1%
Goods and Services	55	1,834	3.0
Imports			
Goods	49	1,912	2.6
Goods and Services	60	2,330	2.6
Balance			
Goods	-10	-634	1.6
Goods and Services	-5	-496	1.0

Source: Data for trade in goods: Global Trade Atlas. For trade in services: U.S. Department of Commerce, Bureau of Economic Analysis.

Table 2 and **Table 3** list key U.S. exports to and imports from South Korea, respectively. The products in the tables represent 88% of all U.S. exports to and imports from South Korea. **Table 2** indicates that U.S. exports to South Korea are varied, with the top five such U.S. exports

(...continued)

especially at the state level where such data are not collected. See CRS Report RL33085, *Trade in Services,: The Doha Development Agenda Negotiations and U.S. Goals*, by William H. Cooper.

accounting for about 50% of all U.S. exports to South Korea. These categories are: machinery (e.g., for manufacturing semiconductor devices), electrical machinery (especially integrated circuits and semiconductor devices), medical instruments, civilian aircraft engines and parts, and organic chemicals. (For more export and import detail, see **Table B-1**.)

Table 2. Top 25 U.S. Exports to South Korea, 2010

HTS Chapter	Product	Export Value ($ millions)	Percent of Total
84	Machinery, Reactors, Boilers	6,946	18
85	Electrical Machinery	5,075	13
90	Optical, Medical Instruments	2,660	7
88	Aircraft, Spacecraft	2,431	6
29	Organic Chemicals	2,153	6
10	Cereals	1,847	5
27	Mineral Fuel, Oil	1,518	4
39	Plastic	1,236	3
72	Iron and Steel	1,146	3
98	Special Classification Provisions (Military equipment exported with the expectation of being returned to the U.S.)	1,025	3
87	Vehicles, Not Railway	814	2
38	Miscellaneous Chemical Products	809	2
02	Meat	783	2
28	Inorganic Chemicals; Rare Earth Metals	739	2
30	Pharmaceutical Products	644	2
93	Arms and Ammunition	586	2
12	Misc. Grain, Seed	560	1
71	Precious Stones	498	1
47	Woodpulp	423	1
41	Hides and Skins	410	1
76	Aluminum and Articles Thereof	376	1
08	Edible Fruit and Nuts	371	1
26	Ores, Slag, Ash	342	1
73	Iron and Steel Products	312	1
23	Food Waste	292	1
	SUB-TOTAL Top 25	**$33,994**	**88%**
	TOTAL All Products	**$38,844**	**100%**

Source: Global Trade Atlas (Census data). HTS: Harmonized Tariff Schedule.

Table 3 shows that U.S. imports from South Korea are narrowly focused and more concentrated than are U.S. exports. Nearly 70% of all import categories are concentrated in three broad sectors. These are: electrical machinery (especially telephone sets and other apparatus for voice/image/data transmission), non-electrical machinery (especially parts and accessories for office machines, refrigerators and freezers, and washing machines), and motor vehicles (primarily passenger cars, parts, and accessories). (For more detail, see **Table B-2**.)

Table 3. Top 10 U.S. Imports from South Korea, 2010

HTS Chapter	Product	Import Value ($ millions)	Percent of Total
85	Electrical Machinery	15,269	31
84	Machinery, Reactors, Boilers	9,346	19
87	Vehicles and Parts, Not Railway	9,258	19
27	Mineral Fuel, Oil	2,416	5
40	Rubber	1,572	3
73	Iron and Steel Products	1,540	3
39	Plastic	1,066	2
29	Organic Chemicals	946	2
72	Iron and Steel	893	2
90	Optical, Medical Instruments	845	2
	SUB-TOTAL Top 10	**$43,150**	**88%**
	TOTAL All Products	**$48,860**	**100%**

Source: Global Trade Atlas (Census data). HTS: Harmonized Tariff Schedule.

Potential National Sector-Specific Trade Effects of the KORUS FTA

According to studies conducted by the USITC, U.S. exports of goods to South Korea under the KORUS FTA could increase by more than imports from South Korea, in both percentage and value terms, slightly reducing, but not eliminating the U.S. trade deficit with South Korea. With this slight reduction in the U.S. trade deficit with South Korea, however, the overall U.S. trade deficit with the world would change almost imperceptibly. The USITC projects that, compared with a no KORUS FTA scenario, total U.S. merchandise exports to South Korea as a result of the FTA would grow over the 10-year implementation period, by about 24%[6] an average of about 2% per year, and merchandise imports would grow by about 10%,[7] or an average of about 1% per year, as indicated in **Figure 1**. For most products, major increases in exports could occur in the latter part of the phase-in period. The study cautions, however, that without a full quantitative analysis of services trade and international investment patterns, simulation results of the USITC study in general should not be interpreted as changes in *total* imports and exports, or as implying meaningful information about the balance of trade impact of the entire U.S.-Korea FTA.[8]

U.S. imports in some sectors could rise more than normally expected as a consequence of the KORUS FTA. According to the USITC, such imports as textiles, apparel, leather products, petroleum and coal products, metal products, and motor vehicles and parts could increase over the full implementation period of the agreement.

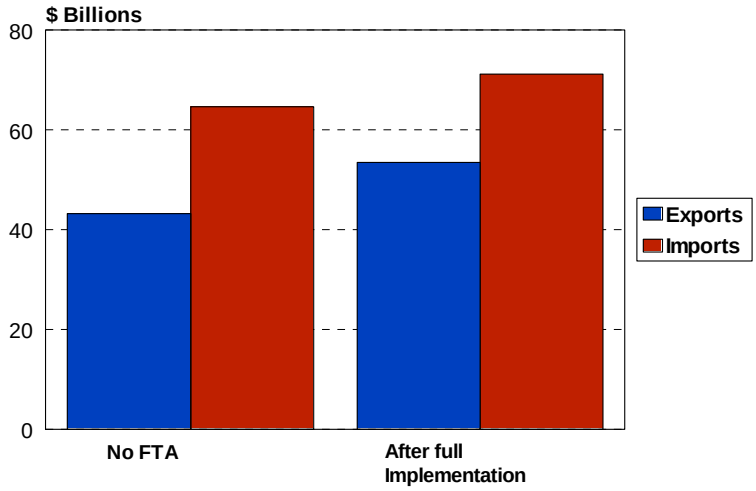
[6] By $9.7 billion to $10.9 billion on a 2001 model of the world economy projected to a 2008 export base of $43 billion (USITC report, chapter 2, Table 2.2).

[7] By $6.4 billion to $6.9 billion on a 2001 model of the world economy projected to a 2008 import base of $65 billion (USITC report, chapter 2, Table 2.2).

[8] See USITC report, chapter 2, table 2.3 data (USITC Executive Summary, p. xix).

Figure 1. Total Exports and Imports of Goods Traded with South Korea under No FTA, and Projected after Full Implementation of the Proposed KORUS FTA

(Based on Projected 2008 Economy)



Source: USITC, *Potential Economy-Wide and Selected Sectoral Effects*, Table 2.2

USITC Estimates of Total Sectoral Changes

The USITC used an economic model known as the Global Trade Atlas Project (GTAP), located at Purdue University[9] to estimate quantitative changes in trade (exports and imports) for 40 sectors. These estimations are based on KORUS FTA changes in tariff rates and tariff rate quotas at the end of the phase-in period of the agreement. The results are reported as a range of high and low proportional effects (percentage increases or decreases in trade) and high and low potential changes in trade values for various sectors, relative to trade flows that would have occurred in 2008 if there were no FTA with South Korea. **Table 4** lists these in three groups: (1) sectors for which increases in U.S. exports to South Korea are expected to exceed increases in U.S. imports from South Korea; (2) industries for which U.S. exports and imports are not expected to increase; and (3) sectors for which U.S. imports from South Korea are expected to exceed U.S. exports to South Korea.

Note that macroeconomic changes, such as changes in investment patterns, shifts in the relative values of foreign currencies, and changes in types of goods traded can overwhelm the impact on trade of changes in tariffs, such as would occur under the KORUS FTA.

[9] The databases are cooperatively produced and maintained by researchers and scholars. The model includes 57 sectors. Of these, 17 cover services, utilities, and construction, and 40 cover manufacturing, mining, and agriculture.

Table 4. Simulated (GTAP) Effects of the Proposed KORUS FTA on Net Exports for 40 Sectors Relative to the Projected 2008 Economy

Sectors for which U.S. Net Exports (Exports Minus Imports) are Expected to Increase
Cattle, sheep, goats, horses
Beef meat products
Other meat products
Dairy products
Other animal products
Wheat
Cereal grains other than wheat and rice
Oilseeds
Vegetable oils and fats
Plant-based fibers
Vegetables, fruits and nuts
Crops n.e.c.
Fishing
Forestry
Coal
Minerals n.e.c.
Mineral products n.e.c.
Beverages and tobacco products
Other food products
Wood products
Paper products and publishing
Chemical, rubber, and plastic products
Ferrous metals (iron and steel)
Metals other than iron and steel
Electronic equipment
Machinery and equipment n.e.c.
Transportation equipment other than motor vehicles and parts
Other sectors
Industries for which No Change is Expected
Paddy and processed rice
Raw milk
Wool, silkworm cocoons
Sugarcane, sugar beet, Sugar
Oil and gas
Industries for which U.S. Net Exports are Expected to Decline (New Imports Will Exceed New Exports)
Textiles
Motor vehicles and parts
Wearing apparel
Metal products
Petroleum and coal products
Leather products
Manufactures n.e.c.

Source: Based on USITC Report, chapter 2, table 2.2, results from the GTAP Model..

Notes: N.e.c. - not elsewhere classified.

Possible State Export Effects of the KORUS FTA

At the state level, tables are included for each state in **Appendix A**. Each state table lists: (1) the top-10 state exports to South Korea at the two-digit harmonized tariff schedule (HTS) level; (2) their dollar value for 2010; and (3) the state's share of total exports to South Korea that the sector's exports represent. These listings may be compared with the USITC-projected direction of trade estimated to result from the KORUS FTA upon full implementation for that highly-aggregated sector *at the national level*. At a disaggregated level, the composition of trade for any given state may differ considerably from that at the national level. However, because the GTAP model uses only highly-aggregated sectors, the extent of that difference cannot be determined. Exports in the state tables are reported at the two-digit level to correspond with similar categories in the GTAP model.

Census Data

The export data for the various states are from the Census Bureau's series showing the Origin of Movement (OM) of state-level exports, by foreign destination. The Census Bureau's OM Data Series is compiled from the Electronic Export Information (EEI) filed by exporters or their agents. The data represent a shipment of one or more kinds of merchandise from one exporter to one foreign importer on a single carrier. The state identified in the data is that from which the merchandise starts its journey. It represents the origin of *transportation*, not the origin of *production* of the exports. According to the Census Bureau, there are a number of known limitations to the data. In particular, whenever shipments represent a consolidation of goods, such as through warehouses, the state with the warehouse will be credited with the exports, rather than the state of origin of the exports. This caveat is particularly relevant to agricultural products shipped from inland states down the Mississippi River for export from the port of New Orleans. In this case, New Orleans would be credited as the state of origin of the exports. In addition, when goods are stored and then exported by central offices or intermediaries, export data would understate exports from the original production state and overstate exports from the office or consolidation point.

Generally speaking, OM data tend to *overestimate* exports from port states such as California and New York, and *underestimate* exports from such interior states as Iowa, Missouri, and South Dakota. For more details, see **Appendix C**.

Table 5 lists state exports to South Korea based on available OM data. It also includes: (1) information on state shares of all U.S. exports to South Korea, and (2) state exports to South Korea as a share of total state exports to the world. CRS did not attempt to rank the states by the OM data because of limitations explained above—namely that the data tend to overestimate or underestimate exports for various states.

Table 5. State Exports to South Korea, State Shares of All U.S. Exports to South Korea, and South Korea's Share of All State Exports to the World, 2010

(based on Census data)

State	State Exports to S. Korea in ($Mil.)	State Share of All U.S. Exports to S. Korea (%)	Exports to S. Korea as % of Total State Exports to the World (%)	State	State Exports to S. Korea in ($Mil.)	State Share of All U.S. Exports to S. Korea (%)	Exports to S. Korea as % of Total State Exports to the World (%)
All States	$38,844	100%	3.04%				
Alabama	574	1.5	3.7	*Montana*	$187	0.5%	13.1%
Alaska	477	1.2	11.5	*Nebraska*	271	0.71	4.7
Arizona	238	0.6	1.5	*Nevada*	41	0.1	0.7
Arkansas	145	0.4	2.8	*New Hampshire*	131	0.3	3.0
California	8,046	20.7	5.6	*New Jersey*	1,666	4.3	5.2
Colorado	201	0.5	3.0	*New Mexico*	28	0.1	1.8
Connecticut	475	1.2	3.0	*New York*	1,992	5.1	2.9
Delaware	120	0.3	2.4	*North Carolina*	606	1.6	2.4
Florida	467	1.2	0.8	*North Dakota*	11	0.03	0.4
Georgia	631	1.6	2.2	*Ohio*	640	1.6	1.5
Hawaii	15	0.04	2.2	*Oklahoma*	58	0.2	1.1
Idaho	502	1.3	9.7	*Oregon*	937	2.4	5.3
Illinois	788	2.0	1.6	*Pennsylvania*	792	2.0	2.3
Indiana	551	1.4	1.9	*Rhode Island*	17	0.04	0.9
Iowa	224	0.6	2.1	*South Carolina*	378	1.0	1.9
Kansas	228	0.6	2.3	*South Dakota*	13	0.03	1.0
Kentucky	482	1.2	2.5	*Tennessee*	557	1.4	2.1
Louisiana	1,644	4.2	4.0	*Texas*	6,447	16.6	3.1
Maine	99	0.3	3.1	*Utah*	273	0.7	2.0
Maryland	481	1.2	4.7	*Vermont*	130	0.3	3.0
Massachusetts	893	2.3	2.3	*Virginia*	379	1.0	2.2
Michigan	751	1.9	1.7	*Washington*	2,719	7.0	5.1
Minnesota	627	1.6	3.3	*West Virginia*	107	0.3	1.7
Mississippi	72	0.2	0.9	*Wisconsin*	361	1.0	1.8
Missouri	656	1.7	5.1	*Wyoming*	39	0.1	3.9

Source:
State Exports to South Korea: Global Trade Atlas (Census) data;
State Share of all U.S. exports to South Korea: Calculated by CRS from Global Trade Atlas data.
Exports to South Korea as Percent of Total State Exports to World: Calculated by CRS from Global Trade Atlas data.

State tables follow in **Appendix A**, listed alphabetically.

Appendix A. State Tables

Alabama

In 2010, Alabama shipped close to $600 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 4% of the state's total exports to the world. The top 10 products accounted for 90% of Alabama's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis (see table, below):

- Net exports (exports minus imports) could increase in: optical instruments (optical fiber); organic chemicals; plastic; machinery (including engines, motors, and office machine parts); iron and steel scrap; ores, Slag, Ash; paper and paperboard; miscellaneous chemical products; woodpulp; and cereals (corn).
- According to CRS estimates detailed in **Appendix C**, data underestimate manufacturing exports from Alabama by at least 25%.

Alabama's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$574**	**100%**
90	Optical/Medical Instruments *(Optical fiber – 95%)*	140	24
29	Organic Chemicals *(Phenols – 85%)*	117	20
39	Plastic *(Polyethers, epoxides & polyesters, primary forms – 82%)*	56	10
84	Machinery *(Engines and motors – 17%; Office machine parts – 15%)*	48	8
72	Iron and Steel *(Ferrous waste & scrap – 99%)*	48	8
26	Ores, Slag, Ash	40	7
48	Paper, Paperboard	20	4
38	Miscellaneous Chemical Products	18	3
47	Woodpulp	16	3
10	Cereals *(Corn – 100%)*	13	2
	Total for Top 10 Exports	**$516**	**90%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Alaska

In 2010, Alaska shipped nearly $500 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 12% of the state's total exports to the world. The top 10 products accounted for virtually 100% of Alaska's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: fish and seafood; ores, slag, ash; wood; powered aircraft; electrical machinery (electric motors and generators); prepared fish (fish sticks); fish meal for animal feed; fish/animal bait; machinery (engines and motors); and optical and medical instruments.

Alaska's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$477**	**100%**
03	Fish and Seafood (*Surimi and fish fillets – 51%, fish livers & roes – 24%*)	255	54
26	Ores, Slag, Ash (*Zinc ores and concentrates – 72%*)	170	36
44	Wood	31	6
88	Aircraft/Spacecraft (*Powered aircraft – 84%*)	9	2
85	Electrical Machinery (*Electric motors and generators – 91%*)	3	1
16	Prepared Meat, Fish (*Fish sticks – 73%*)	3	1
23	Food Waste; Animal Feed (*Fish meal for non-human use – 100%*)	2	0.5
05	Other Of Animal Origin (*Fish/animal bait – 100%*)	2	0.3
84	Machinery (*Engines and motors – 91%*)	1	0.2
90	Optical/Medical Instruments	1	0.1
	Total for Top 10 Exports	**$477**	**99.9%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Arizona

In 2010, Arizona shipped nearly $250 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 2% of the state's total exports to the world. The top 10 products accounted for 87% of Arizona's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: electrical machinery (integrated circuits); ores, slag, and ash; optical and medical instruments; cotton; machinery (including semiconductor manufacturing equipment and office machine parts); aircraft parts; copper; and woodpulp.
- Net exports could decline in: cattle hides and skins.
- Exports in one industry are not estimated in the USITC study: arms and ammunitions (bombs, grenades).
- According to CRS estimates detailed in **Appendix C**, data overestimate both manufactured and agricultural exports from Arizona by at least 25%.

Arizona's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$238**	**100%**
85	Electrical Machinery (*Integrated circuits – 75%*)	85	36
26	Ores, Slag, Ash	20	9
90	Optical/Medical Instruments	18	8
93	Arms and Ammunition (*Bombs, grenades – 95%*)	18	8
52	Cotton/Yarn, Fabric (*Cotton – 100%*)	18	7
84	Machinery (*Semiconductor manufacturing equipment – 45%; Office machine parts – 15%*)	18	7
88	Aircraft, Spacecraft (*Aircraft parts – 85%*)	9	4
41	Hides and Skins (*Cattle hides & skins – 100%*)	8	3
74	Copper (*Copper waste and scrap – 81%*)	7	3
47	Woodpulp	7	3
	Total for Top 10 Exports	**$208**	**87%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Arkansas

In 2010, Arkansas shipped $145 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and less than 3% of the state's total exports to the world. The top 10 products accounted for 97% of Arkansas' total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: organic chemicals; poultry; paper and paperboard; electrical machinery (especially electromechanical tools); machinery (especially hand tools); iron and steel; miscellaneous chemical products; inorganic chemicals; and plastic.
- Exports in one industry are not estimated in the USITC study: arms and ammunition.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Arkansas by at least 25%.

Arkansas' Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$145**	**100%**
29	Organic Chemicals	79	54
02	Meat (*Poultry – 100%*)	20	14
48	Paper, Paperboard	17	11
85	Electrical Machinery (*Electromechanical tools – 46%*)	6	4
84	Machinery (*Hand tools – 21%*)	5	4
72	Iron and Steel	7	3
38	Miscellaneous Chemical Products	3	2
28	Inorganic Chemicals; Rare Earth Metals	2	2
39	Plastic	2	1
93	Arms and Ammunition (*Bombs, grenades, cartridges and parts – 95%*)	2	1
	Total for Top 10 Exports	**$140**	**97%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

California

In 2010, California shipped $8 billion in goods to South Korea, according to the Census Bureau. This represented 21% of all U.S. exports to South Korea, and nearly 6% of the state's total exports to the world. The top 10 products accounted for 78% of California's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (semiconductors); electrical machinery (integrated circuits); medical instruments; iron and steel scrap; aircraft engines and parts; edible fruit and nuts; aluminum waste scrap; food preparations; and inorganic chemicals.
- Net exports could decline in: mineral fuel oil (from coal tar).
- According to CRS estimates detailed in **Appendix C**, data overestimate manufacturing exports from California by at least 25%.

California's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$8,046**	**100%**
84	Machinery (*Semiconductor manufacturing equipment – 64%; Computers and components – 8%; Office machine parts – 5%*)	1,854	23
85	Electrical Machinery (*Integrated circuits – 29%; Electric apparatus for line telephony and parts – 15%*)	1,461	18
90	Optical, medical instruments	940	11
72	Iron and Steel (*Ferrous waste and scrap – 97%*)	599	7
88	Aircraft, Spacecraft (*Civilian aircraft, engines and parts – 54%; Aircraft, spacecraft, and balloon parts – 46%*)	434	5
08	Edible Fruit and Nuts (*Oranges – 34%; Walnuts – 20%; Almonds – 19%*)	335	4
27	Mineral Fuel, Oil (*from Coal tar—63%*)	207	3
76	Aluminum (*Waste and scrap – 76%*)	169	2
21	Miscellaneous Food (*Food preparations – 87%*)	122	2
28	Inorganic Chemicals (*Hydrogen, rare gases and other nonmetals – 41%*)	103	1
	Total for 10 Exports	**$6,225**	**78%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Colorado

In 2010, Colorado shipped about $200 million in goods to South Korea, according to the Census Bureau. This represented 0.5% of all U.S. exports to South Korea, and 3% of the state's total exports to the world. The top 10 products accounted for 91% of Colorado's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: beef; optical and medical instruments; machinery (including computers and components); electrical machinery (including integrated circuits); aluminum; copper; plastic; iron and steel (rolled); and books, newspapers, and manuscripts.
- Net exports could decline in hides and skins.
- According to CRS estimates detailed in **Appendix C**, data underestimate manufactured exports from Colorado by at least 25%.

Colorado's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$201**	**100%**
02	Meat (*Beef – 94%; Beef offals – 6%*)	58	29
90	Optical/Medical Instruments	35	17
84	Machinery (*Computers and components – 40%*)	29	14
85	Electrical Machinery (*Integrated circuits – 23%*)	26	13
41	Hides and Skins (*Cattle & horse hides and skins – 100%*)	19	10
76	Aluminum	4	2
74	Copper	3	2
39	Plastic	3	2
72	Iron and Steel (*Rolled – 90%*)	3	1
49	Book/Newspaper/Manuscript	3	1
	Total for Top 10 Exports	**$183**	**91%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Connecticut

In 2010, Connecticut shipped nearly $500 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and 3% of the state's total exports to the world. The top 10 products accounted for 95% of Connecticut's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: powered aircraft; machinery (especially gas turbines and semiconductor manufacturing equipment); electrical machinery (especially that relating to generators); optical and medical instruments (including liquid crystal lasers); miscellaneous chemical products; inorganic chemicals; and plastic.
- Net exports could decline in: iron and steel products.
- According to CRS estimates detailed in **Appendix C**, data underestimate both manufacturing and agricultural exports from Connecticut by at least 25%.

Connecticut's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$475**	**100%**
88	Aircraft/Spacecraft *(Civilian aircraft, engines & parts – 99%)*	209	44
84	Machinery *(Gas turbines – 37%; Semiconductor manufacturing equipment – 17%)*	67	14
85	Electrical Machinery *(Electric generating sets and rotary converters – 39%; Parts of electric motors, generators & sets – 20%)*	62	13
90	Optical/Medical Instruments *(Liquid crystal devices, lasers – 33%; Compasses & navigational instruments – 12%)*	58	12
98	Special Other *(Repaired military products – 100%)*	17	4
72	Iron and Steel	13	3
38	Miscellaneous Chemical Products	9	2
28	Inorganic Chemicals; Rare Earth Metals	6	1
73	Iron/Steel Products	5	1
39	Plastic	5	1
	Total for Top 10 Exports	**$450**	**95%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Delaware

In 2010, Delaware shipped $120 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and less than 3% of the state's total exports to the world. The top 10 products accounted for 97% of Delaware's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: plastic; machinery (machine tool parts); medical instruments; soap, wax; civilian aircraft engines; miscellaneous chemical products; organic chemicals; pharmaceutical products; and inorganic chemicals.
- Net exports could decline in iron and steel products

Delaware's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$120**	**100%**
39	Plastic *(Plates, Sheets – 64%)*	43	36
84	Machinery *(Machine tools parts – 83%)*	35	29
90	Optical/Medical Instruments	20	17
34	Soap, Wax, Dental Preparations *(Polishes and creams – 56%)*	5	5
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 100%)*	4	3
38	Miscellaneous Chemical Products *(Finishing agents for textiles, paper, etc – 87%)*	2	2
29	Organic Chemicals	2	1
30	Pharmaceutical Products	2	1
73	Iron/Steel Products *(Tubes, Pipes, etc – 95%)*	2	1
28	Inorganic Chemicals; Rare Earth Metals	1	1
	Total for Top 10 Exports	**$116**	**97%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Florida

In 2010, Florida shipped nearly $500 million in goods to South Korea, according to the Census Bureau. This represented about 1% of all U.S. exports to South Korea, and nearly 1% of the state's total exports to the world. The top 10 products accounted for 80% of Florida's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: plastic; medical devices (including orthopedic appliances, artificial body parts, and hearing aids); machinery (including gas turbines); electrical machinery (including integrated circuits); civilian aircraft engines; tanks and other armored fight vehicles; and pharmaceuticals.
- Net exports could decline in motor vehicles and parts, leather articles and solid fuels from coal.
- Exports in one industry are not estimated in the USITC study: repaired military products.
- According to CRS estimates detailed in **Appendix C**, data overestimate both manufacturing and agricultural exports from Florida by at least 25%.

Florida's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$467**	**100%**
39	Plastic *(Polyamides – 89%)*	89	19
90	Optical/Medical Instruments *(Orthopedic appliances, artificial body parts, hearing aids, etc – 23%; Medical, surgical, dental, or veterinary instruments – 19%)*	73	16
84	Machinery *(Gas turbines – 41%; Taps, cocks, valves, etc, for pipes, – 8%); Computers and components – 8%I*	56	12
85	Electrical Machinery *(Integrated circuits – 16%)*	37	8
88	Aircraft/Spacecraft *(Civilian aircraft, engines, and parts – 59%)*	23	5
87	Vehicles, Not Railway *(Tanks and other armored fight vehicles and parts – 37%; Motor vehicle parts and accessories – 34%; Passenger vehicles – 25%)*	21	5
42	Leather Articles; Saddlery; Bags	21	4
98	Special Other *(Repaired military products – 94%)*	20	4
30	Pharmaceutical Products *(Human Blood/Animal Blood/Vaccines, etc – 92%)*	17	4
27	Mineral Fuel, Oil Etc *(Solid fuels from coal – 90%)*	14	31
	Total for Top 10 Exports	**$372**	**80%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Georgia

In 2010, Georgia shipped close to $650 million in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 78% of Georgia's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery; civilian aircraft engines and parts; woodpulp; plastic; medical instruments; electrical machinery; organic chemicals; salt, sulfur, earth, stone; iron and steel; and miscellaneous chemical products.

Georgia's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$631**	**100%**
84	Machinery *(Turbojets, turbopropellers & other gas turbines and parts – 57%; Metal-rolling mills – 4%)*	147	23
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 91%; aircraft, spacecraft, and balloon parts – 9%)*	85	13
47	Woodpulp	52	8
39	Plastic	41	6
90	Optical/Medical Instruments *(Medical, surgical, dental or veterinary instruments – 30%)*	33	5
85	Electrical Machinery *(Electrical apparatus for line telephony – 24%)*	33	5
29	Organic Chemicals	32	5
25	Salt; Sulfur; Earth, Stone (*Kaolinic clays – 81%)*	31	5
72	Iron and Steel *(Ferrous waste & scrap – 80%)*	25	4
38	Miscellaneous Chemical Products	17	3
	Total for Top 10 Exports	**$493**	**78%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Hawaii

In 2010, Hawaii shipped $15 million in goods to South Korea, according to the Census Bureau. This represented less than 0.04% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 86% of Hawaii's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: civilian aircraft engines and parts; cocoa products; edible fruit and nuts; aluminum waste and scrap; preserved nuts and seeds; machinery (especially computers and components); woodpulp; and fish and seafood (especially shrimp).
- Net exports could decrease in copper articles.
- Exports in one industry are not estimated in the USITC study: paintings and drawings.

Hawaii's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$15**	**100%**
88	Aircraft, Spacecraft *(Civilian aircraft, engines, and parts – 99.5%)*	3	21
18	Cocoa *(Cocoa powder – 40%; Chocolate products – 60%)*	3	20
97	Art and Antiques *(Paintings and drawings – 99%)*	2	11
08	Edible Fruit and Nuts *(Macademia nuts – 71%; Pears – 20%)*	1	8
74	Copper/Articles Thereof	1	7
76	Aluminum *(Waste and scrap – 100%)*	1	5
20	Preserved Food *(Nuts & seeds – 78%)*	1	4
84	Machinery *(Computers and components – 58%)*	1	4
47	Woodpulp *(Waste and scrap of paper and paperboard)*	0.5	3
03	Fish and Seafood *(Shrimp – 73%)*	0.5	3
	Total for Top 10 Exports	**$13**	**86%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Idaho

In 2010, Idaho shipped more than $500 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 10% of the state's total exports to the world. The top 10 products accounted for 99% of Idaho's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: electrical machinery (integrated circuits), cheese and nonfat dry milk; paper and paperboard; machinery (semiconductor manufacturing equipment); special purpose motor vehicles; beauty products; processed potato chips; vegetables; and woodpulp.
- Export change in one industry is not estimated in the USITC study: exports of arms and ammunition
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Idaho by at least 25%.

Idaho's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$502**	**100%**
85	Electrical Machinery *(Integrated circuits – 99.8%)*	468	93
04	Dairy, Eggs, Honey *(Cheese – 85%; Non-fat dry milk – 10%)*	12	2
48	Paper, Paperboard	6	1
84	Machinery *(Semiconductor manufacturing equipment – 78%)*	3	1
87	Vehicles, Not Railway *(Special purpose motor vehicles – 97%)*	2	0.4
33	Perfumery, Cosmetic, *Etc (Beauty products – 71%)*	1	0.2
20	Preserved Food *(Processed potato products – 77%)*	1	0.2
07	Vegetables *(Dried peas – 43%)*	1	0.2
93	Arms and Ammunition *(Bombs, grenades, cartridges and parts – 100%)*	1	0.2
47	Woodpulp	1	0.2
	Total for Top 10 Exports	**$497**	**99%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Illinois

In 2010, Illinois shipped close to $1 billion in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and nearly 2% of the state's total exports to the world. The top 10 products accounted for 70% of Illinois' total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: electrical machinery (especially electrical apparatus for telephone-related equipment); medical instruments; various types of machinery; animal feeds; tractors; chemical products; synthetic precious stones; iron and steel scrap; civilian aircraft engines and parts; and corn.
- Net exports could decline in: motor vehicles, including passenger cars, parts and accessories.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Illinois by at least 25%.

Illinois' Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$788**	**100%**
85	Electrical Machinery *(Electrical apparatus for line telephony – 33%; Electrical apparatus for switching – 7%)*	129	16
90	Optical/Medical Instruments *(Medical, surgical, dental or veterinary instruments – 58%)*	128	16
84	Machinery *(highly varied)*	101	13
23	Food Waste; Animal Feed *(Distillers' grains – 70%)*	46	6
87	Vehicles, Not Railway *(Passenger cars – 48%; motor vehicle parts and accessories – 39%; Tractors – 8%)*	39	5
38	Miscellaneous Chemical *Products (Antiknock preps & other additives for mineral oils – 40%)*	32	4
71	Precious Stones, Metal *(synthetic–99%)*	22	3
72	Iron and Steel *(Ferrous waste and scrap – 67%)*	21	3
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 87%)*	19	2
10	Cereals *(Corn – 91%)*	17	2
	Total for Top 10 Exports	**$554**	**70%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Indiana

In 2010, Indiana shipped more than $500 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 2% of the state's total exports to the world. The top 10 products accounted for 90% of Indiana's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: pharmaceutical products; machinery (especially computers and components); orthopedic appliances, artificial body parts, and medical instruments; tanks and other armored fight vehicles and parts; electrical machinery; plastic; miscellaneous chemical products; aluminum; books, newspapers and manuscripts; and stone plaster and cement.
- Net exports could decline in motor vehicles, parts, and accessories.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Indiana by at least 25%.

Indiana's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$551**	**100%**
30	Pharmaceutical Products	207	38
84	Machinery *(Computers and components – 21%; Compression ignition internal combustion piston engines – 20%)*	74	13
90	Optical/Medical Instruments *(Orthopedic appliance, artificial bodies parts, hearing aids – 43%; Medical, surgical, dental or veterinary instruments – 36%)*	53	10
87	Vehicles, Not Railway *(Tanks and other armored fight vehicles and parts – 75%; Motor vehicle parts & accessories – 21%)*	45	8
85	Electrical Machinery *(Unrecorded media for sound – 20%; Electrical apparatus for switching – 17%)*	43	8
39	Plastic *(Polyethers, epoxides & polyesters, primary forms – 40%)*	28	5
38	Miscellaneous Chemical Products *(Composite diagnostic/lab reagents – 43%)*	15	3
76	Aluminum *(Aluminum plates, sheets, and strips – 41%)*	10	2
49	Book, Newspaper, Manuscript	9	2
68	Stone, Plaster, Cement, Etc (*Millstones for grinding – 96%*)	89	2
	Total for Top 10 Exports	**$494**	**90%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Iowa

In 2010, Iowa shipped $224 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 82% of Iowa's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: pork; aluminum; machinery (including piston engines); optical and medical instruments; pharmaceutical products; animal feeds; electrical machinery (radar apparatus and navigational and remote control apparatus); prepared meat (sausages); civilian aircraft engines and parts; and paper and paperboard.
- According to CRS estimates detailed in **Appendix C**, data underestimate both manufactured and agricultural exports from Iowa by at least 25%.

Iowa's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$224**	**100%**
02	Meat *(Pork – 61%; Beef – 34%)*	96	43
76	Aluminum	19	8
84	Machinery *(Piston engines – 24%)*	16	7
90	Optical/Medical Instruments *(Oscilloscopes and spectrum analyzers – 32%)*	12	5
30	Pharmaceutical Products	9	4
23	Food Waste; Animal Feed *(Animal feeds – 64%)*	8	3
85	Electrical Machinery *(Radar apparatus, radio navigational aid and remote control apparatus – 23%)*	7	3
16	Prepared Meat, Fish *(Sausages – 86%)*	7	3
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 69%)*	6	3
48	Paper, Paperboard	6	3
	Total for Top 10 Exports	**$185**	**82%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Kansas

In 2010, Kansas shipped $228 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 94% of Kansas' total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: beef; inorganic chemicals; pet food; machinery (including self-propelled bulldozers; graders, and scrapers); civilian aircraft engines and parts; miscellaneous chemical products; and optical and medical instruments.
- Net exports could decline in: cattle and horse hides and skins, and synthetic filament yarn.
- Exports in one industry are not estimated in the USITC study: repaired military products.
- According to CRS estimates detailed in **Appendix C**, data underestimate both manufactured and agricultural exports from Kansas by at least 25%.

Kansas' Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$228**	**100%**
02	Meat *(Beef – 91%)*	80	35
41	Hides and Skins *(Cattle and horse hides & skins – 100%)*	77	34
28	Inorganic Chemicals; Rare Earth Metals *(Hydrogen, rare gases and other nonmetals – 97%)*	19	8
23	Food Waste; Animal Feed *(Pet food – 90%)*	12	5
84	Machinery *(Self-propelled bulldozers, graders, scrapers, – 34%)*	5	2
54	Manmade Filament, Fabric *(Synthetic filament yarn – 100%)*	5	2
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 99%)*	4	2
98	Special Other *(Repaired military products – 99.7%)*	4	2
38	Miscellaneous Chemical Products	4	2
90	Optical/Medical Instruments	3	1
	Total for Top 10 Exports	**$213**	**94%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Kentucky

In 2010 Kentucky shipped nearly $500 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 3% of the state's total exports to the world. The top 10 products accounted for 89% of Kentucky's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: inorganic chemicals; plastic (silicone); machinery (especially semiconductor manufacturing equipment); pharmaceutical products (blood and vaccines); miscellaneous chemical products; electrical machinery; optical and medical instruments, and organic chemicals.
- Net exports could decline in vehicle parts.
- Exports in one industry are not estimated in the USITC study: exports of arms and ammunition.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Kentucky by at least 25%.

Kentucky's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$482**	**100%**
28	Inorganic Chemicals; Rare Earth Metals	149	31
39	Plastic *(Silicone – 72%)*	84	17
84	Machinery *(Semiconductor manufacturing equipment – 54%)*	58	12
30	Pharmaceutical Products *(Human Blood/Animal Blood/Vaccines, etc – 99.8%)*	41	9
38	Misc. Chemical Products *(Binders for Found Molds – 52%)*	25	5
85	Electrical Machinery	22	5
90	Optical/Medical Instruments	15	3
87	Vehicles, Not Railway *(Vehicle parts – 99%)*	14	3
29	Organic Chemicals	12	3
93	Arms and Ammunition	9	2
	Total for Top 10 Exports	**$430**	**89%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Louisiana

In 2010, Louisiana shipped $2 billion in goods to South Korea, according to the Census Bureau. This represented 4% of all U.S. exports to South Korea, and 4% of the state's total exports to the world. The top 10 products accounted for 97% of Louisiana's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: corn; soybeans; organic chemicals; animal feed (soymeal and distillers' grains); machinery (hoists); iron and steel scrap; plastic; soybean oil; and miscellaneous chemical products.
- Net exports could decline in oils from high temperature coal tar.
- According to CRS estimates detailed in **Appendix C**, data overestimate agricultural exports from Louisiana by at least 25%.

Louisiana's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$1,644**	**100%**
10	Cereals *(Corn – 100%)*	570	35
12	Misc Grain, Seed, Fruit, *(Soybeans – 100%)*	293	18
27	Mineral Fuel, Oil *Etc (Oils from high temperature coal tar – 74%)*	271	16
29	Organic *Chemicals (Cyclic Hydrocarbons – 27%)*	208	13
23	Food Waste; Animal *Feed (Soymeal – 55%; Distillers' grains – 45%)*	77	5
84	Machinery (H*oists– 52%*)	48	3
72	Iron and Steel *(Scrap– 100%)*	43	3
39	Plastic *(Polymers of ethylene, in primary forms – 60%)*	39	2
15	Fats and Oils *(Soybean oil – 100%)*	27	2
38	Miscellaneous Chemical Products	21	1
	Total for Top 10 Exports	**$1,595**	**97%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Maine

In 2010, Maine shipped nearly $100 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and more than 3% of the state's total exports to the world. The top 10 products accounted for 98% of Maine's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: miscellaneous chemical products; woodpulp; civilian aircraft engines and parts; electrical machinery (integrated circuits); paper and paperboard; machinery (pumps and machine tools); fish and seafood (lobster and frozen eels); plastic; and pharmaceutical products.
- Exports in one industry are not estimated in the USITC study: arms and ammunition (parts and accessories).

Maine's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$99**	**100%**
38	Miscellaneous Chemical Products	31	31
47	Woodpulp *(Chemical woodpulp, soda or sulfate – 99%)*	29	30
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 100%)*	15	15
85	Electrical Machinery *(Integrated circuits – 99.6%)*	7	7
48	Paper, Paperboard *(Coated paper and paperboard – 100%)*	5	5
93	Arms and Ammunition *(Parts & accessories of arms – 99%)*	4	4
84	Machinery *(Pumps for liquids, liquid elevators, and parts – 73%; Machine tools for forging, bending, and stamping – 15%)*	3	3
03	Fish and Seafood *(Lobster – 77%; Frozen eels – 22%)*	1	1
39	Plastic	0.5	1
30	Pharmaceutical Products	0.3	0.3
	Total for 10 Exports	**$97**	**98%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Maryland

In 2010, Maryland shipped nearly $500 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 5% of the state's total exports to the world. The top 10 products accounted for 92% of Maryland's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: electrical machinery (television, radio, and radar apparatus parts); miscellaneous chemical products; optical and medical instruments; certain base metals; plastic; inorganic chemicals; machinery (especially centrifuges, computers, and components); and aluminum.
- Net exports could decline in solid fuels from coal.
- Exports in one industry are not estimated in the USITC study: exports of arms and ammunition.
- According to CRS estimates detailed in **Appendix C**, data overestimate manufacturing exports and underestimate agricultural exports from Maryland by at least 25%.

Maryland's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$481**	**100%**
27	Mineral Fuel, Oil Etc *(Solid fuels from coal – 100%)*	192	40
85	Electrical Machinery *(Television, radio, and radar apparatus parts – 84%)*	86	18
38	Miscellaneous Chemical Products	75	16
93	Arms and Ammunition *(Military weapons – 100%)*	41	9
90	Optical/Medical Instruments	10	2
81	Other Base Metals *(Titanium/Waste & Scrap – 100%)*	10	2
39	Plastic *(Polymers/Polyethers/Expoides & Polyesters – 57%)*	8,	2
28	Inorganic Chemicals; Rare Earth Metals	7	1
84	Machinery *(Centrifuge – 31%; Computers and components – 13%)*	6	1
76	Aluminum *(Aluminum bars, rods and profiles – 89%)*	5	1
	Total for Top 10 Exports	**$440**	**92%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Massachusetts

In 2010, Massachusetts shipped nearly $900 million in goods to South Korea, according to the Census Bureau, according to the Census Bureau This represented 2% of all U.S. exports to South Korea, and more than 3% of the state's total exports to the world. The top 10 products accounted for 91% of Massachusetts' total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (semiconductor manufacturing equipment and gas turbines); medical instruments; electrical machinery (especially integrated circuits and electronic apparatus for line telephones); pharmaceutical products; toys and equipment (swimming pools); miscellaneous chemical products; plastic; ferrous waste and scrap; silver; and organic chemicals.
- According to CRS estimates detailed in **Appendix C**, data overestimate both manufactured and agricultural exports from Massachusetts by at least 25%.

Massachusetts' Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$893**	**100%**
84	Machinery *(Semiconductor manufacturing equipment – 61%; Gas turbines – 17%)*	443	50
90	Optical/Medical Instruments *(Medical, surgical, dental or veterinary instruments – 31%)*	132	14
85	Electrical Machinery *(Integrated circuits – 27%; Electrical apparatus for line telephony – 13%)*	89	10
30	Pharmaceutical Products	37	4
95	Toys & Sports Equipment *(pools– 100%)*	28	3
38	Miscellaneous Chemical Products	21	2
39	Plastic	18	2
72	Iron and Steel *(Ferrous waste and scrap – 87%)*	17	2
71	Precious Stones, Metals *(Silver – 82%)*	14	26
29	Organic Chemicals	12	1
	Total for Top 10 Exports	**$811**	**91%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Michigan

In 2010, Michigan shipped more than $750 million in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and nearly 2% of the state's total exports to the world. The top 10 products accounted for 82% of Michigan's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: various types of motor vehicles and parts; machinery (centrifuges); inorganic chemicals (rare gasses); cosmetics; plastic; medical instruments; soap, wax and dental preparations; and tanning dyeing, painting and putty preparations.
- Net exports could decline in hides and skins.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Michigan by at least 25%.

Michigan's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$751**	**100%**
87	Vehicles, Not Railway *(Passenger cars – 65%; Motor vehicle parts and equipment – 26%; Tank and other armored fight vehicles and parts – 5%)*	204	27
84	Machinery *(Centrifuges – 38%)*	117	16
28	Inorganic Chemicals; Rare Earth Metals *(Hydrogen, rare gases, and other nonmetals – 99.5%)*	90	12
33	Perfumery, Cosmetic *(Beauty products – 66%; Preparations, oral dental hygiene; dental floss – 16%; hair preparations – 12%)*	41	5
70	Glass and Glassware *(Glass mirrors – 98%)*	39	5
39	Plastic *(Silicones – 42%)*	36	5
90	Optical/Medical Instruments	32	5
34	Soap, Wax; Dental Prep	24	3
32	Tanning, Dye, Paint, Putty	16	2
41	Hides and Skins *(Cattle & horse hides and skins – 99.9%)*	16	2
	Total for Top 10 Exports	**$614**	**82%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Minnesota

In 2010, Minnesota shipped more than $620 million in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and more than 3% of the state's total exports to the world. The top 10 products accounted for 81% of Minnesota's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: various types of machinery; medical instruments; plastic; electrical machinery (especially integrated circuits); meats; animal feeds; stone, plaster and cement; and organic chemicals.
- Net exports could decline in impregnated textile fabrics.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Minnesota by at least 25%.

Minnesota's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$627**	**100%**
84	Machinery *(Centrifuges — 18%; Semiconductor manufacturing equipment – 18%; Computers and components – 15%)*	129	21
90	Optical/Medical Instruments *(Optical fibers – 40%: Medical, surgical, dental or veterinary instruments – 14%)*	112	18
39	Plastic *(Self-adhesive plates, sheets, films of plastics – 42%)*	85	14
85	Electrical Machinery *(Integrated circuits – 31%; Printed circuits – 15%; Electric apparatus for line telephony – 10%)*	53	8
02	Meat *(Pork – 52%; Beef – 23%; Pork offals – 21%)*	42	7
59	Impregnated Text Fabrics *(Textile hosepiping and similar textile tubing – 91%)*	29	5
23	Food Waste; Animal Feed *(Beet pulp – 54%; Animal feed preparations – 25%)*	17	3
68	Stone, Plaster, Cement	15	2
38	Miscellaneous Chemical Products	14	2
29	Organic Chemicals	13	2
	Total for Top 10 Exports	**$507**	**81%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Mississippi

In 2010, Mississippi shipped about $70 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and less than 1% of the state's total exports to the world. The top 10 products accounted for 92% of Mississippi's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: tanning, dye, paint, putty; electrical machinery (including electrical apparatus for line telephony and integrated circuits; machinery (especially computers and components and pumps, fans, and hoods); poultry; rubber; optical and medical instruments; woodpulp; plastic; cotton; and miscellaneous chemical products.

Mississippi's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$72**	**100%**
32	Tanning, Dye, Paint, Putty	35	48
85	Electrical Machinery *(Electric apparatus for line telephony – 36%; Integrated circuits – 26%)*	11	16
84	Machinery *(Computers and components – 36%; Air or vacuum pumps, compressors, fans, and hoods – 33%)*	5	7
02	Meat *(Poultry – 97%)*	5	7
40	Rubber	4	5
90	Optical/Medical Instruments	2	3
47	Woodpulp	1	2
39	Plastic *(Polymers of styrene in primary forms – 75%)*	1	2
52	Cotton/Yarn/Fabric *(Cotton – 100%)*	1	2
38	Miscellaneous Chemical Products	1	1
	Total for 10 Exports	**$67**	**92%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Missouri

In 2010, Missouri shipped more than $650 million in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and 5% of the state's total exports to the world. The top 10 products accounted for 87% of Missouri's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: aircraft and spacecraft parts and vehicles; medical instruments; meat (especially pork); machinery; pharmaceutical products; ores; electrical machinery; and miscellaneous chemical products.
- Net exports could decline in solid fuels from coal.
- Export change in one industry is not estimated in the USITC study: military apparel and equipment.
- According to CRS estimates detailed in **Appendix C**, data underestimate both manufacturing and agricultural exports from Missouri by at least 25%.

Missouri's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$656**	**100%**
88	Aircraft, Spacecraft *(Aircraft, spacecraft and balloon parts – 53%; Powered aircraft, spacecraft and launch vehicles – 46%)*	354	54
98	Special Other *(Exports of military apparel and military equipment – 98%)*	53	8
90	Optical/Medical Instruments *(Oscilloscopes, spectrum analyzers and parts – 38%)*	32	5
02	*Meat (Pork – 92%; Beef – 4%)*	28	4
84	Machinery *(Hand tools – 20%; Air or vacuum pumps – 12%; Ship's derricks, cranes, and mobile lifting frames – 9%)*	26	4
30	Pharmaceutical *Products (Human blood, animal blood, and vaccines – 96%)*	19	3
26	Ores, Slag, Ash *(Zinc ores and concentrates – 99.8%)*	19	3
85	Electrical Machinery *(Parts for television, radio and radar apparatus – 29%; Electrical water, space & soil heaters – 13%)*	17	3
38	Miscellaneous Chemical Products *(Composite diagnostic/lab reagents – 64%)*	14	2
27	Mineral Fuel, Oil Etc. *(Solid fuels from coal–98%)*	12	2
	Total for Top 10 Exports	**$573**	**87%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Montana

In 2010, Montana shipped $187 million in goods to South Korea, according to the Census Bureau. This represented 0.5% of all U.S. exports to South Korea, and 13% of the state's total exports to the world. The top 10 products accounted for nearly 100% of Montana's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: inorganic chemicals; machinery (semiconductor manufacturing equipment); electrical machinery (insulated wire and optical sheath fiber cables); optical medical instruments (liquid crystal decides and lasers); civilian aircraft engines and parts; and salt, sulfur, earth, and stone; pharmaceutical products.
- Net exports could decline in solid fuels from coal.
- Exports in one industry are not estimated in the USITC study: repaired military products.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Montana by at least 25%. A substantial portion of the state's agricultural production is processed in neighboring states for export, or transported to port states (i.e., Oregon and Washington) which record them as exports.

Montana's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$187**	**100%**
27	Mineral Fuel, Oil *(Solid fuels from coal – 100%)*	81	43
28	Inorganic Chemicals; Rare Earth Metals	53	28
84	Machinery *(Semiconductor manufacturing equipment – 99%)*	44	24
85	Electrical Machinery *(Insulated wire, optical sheath fiber cables – 97%)*	6	3
90	Optical/Medical Instruments *(Liquid crystal devices and lasers – 55%)*	1	1
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 100%)*	0.5	0.3
25	Salt; Sulfur; Earth, Stone	0.5	0.3
30	Pharmaceutical Products	0.3	0.2
70	Glass and Glassware	0.2	0.1
98	Special Other *(Repaired military products – 100%)*	0.2	0.1
	Total for Top 10 Exports	**$187**	**99.9%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Nebraska

In 2010, Nebraska shipped nearly $300 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 5% of the state's total exports to the world. The top 10 products accounted for 96% of Nebraska's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: beef; aluminum; various optical and medical instruments; plastic; pharmaceutical products (blood and vaccines); machinery (including transmission products); tomato products; and electrical machinery (especially electrical apparatus.)
- Net exports could decline in cattle hides and skins and wadding, felt, twine, and rope.
- According to CRS estimates detailed in **Appendix C**, data underestimate both manufactured and agricultural exports from Nebraska by at least 25%.

Nebraska's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$271**	**100%**
02	Meat *(Beef – 86%: Pork – 8%)*	116	43
41	Hides and Skins *(Cattle hides & skins – 100%)*	102	38
76	Aluminum	14	5
90	Optical/Medical Instruments *(Medical, surgical, dental, or veterinary instruments – 32%)*	6	2
39	Plastic *(Polyethers, Expoxides and Polyesters – 96%)*	5	2
56	Wadding, Felt, Twine, Rope	5	2
30	Pharmaceutical Products *(Blood and vaccines – 88%)*	4	2
84	Machinery *(Transmission products – 43%)*	3	1
20	Preserved Food *(Tomato products – 95%)*	2	1
85	Electrical Machinery *(Electrical apparatus parts – 36%)*	2	1
	Total for Top 10 Exports	**$260**	**96%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Nevada

In 2010, Nevada shipped $40 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and nearly 1% of the state's total exports to the world. The top 10 products accounted for 88% of Nevada's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: medical instruments; machinery (especially pumps and parts); electrical machinery (especially integrated circuits); photographic or cinematographic goods; base metals (titanium); inorganic chemicals; mineral water, and civilian aircraft engine equipment and parts.
- Exports could decline in mineral fuel from coal tar..
- Exports in one industry are not estimated in the USITC study: repaired military products.
- According to CRS estimates detailed in **Appendix C**, data overestimate manufacturing exports from Nevada by at least 25%.

Nevada's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$41**	**100%**
90	Optical/Medical Instruments	11	27
84	Machinery *(Pumps for liquids, liquid elevators, and parts – 76%)*	9	22
85	Electrical Machinery *(Integrated circuits – 55%)*	9	21
37	Photographic Or Cinematographic Goods	2	5
81	Other Base Metals *(Titanium – 100%)*	1,	4
28	Inorganic Chemicals; Rare Earth Metals	1	3
98	Special Other *(Repaired military products – 100%)*	1	2
27	Mineral Fuel, Oil (*from coal tar)*	1	2
22	Beverages *(Mineral water – 100%)*	1	2
88	Aircraft, Spacecraft *(civilian aircraft engine equipment and parts)*	1	2
	Total for Top 10 Exports	**$36**	**88%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

New Hampshire

In 2010, New Hampshire shipped $131 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and 3% of the state's total exports to the world. The top 10 products accounted for 98% of New Hampshire's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase: machinery (including various types of pumps); electrical machinery (especially industrial furnaces); optical and medical instruments; civilian aircraft engines and parts; plastic; inorganic chemicals; tanning, dye, paint, and putty; and aluminum.
- Net exports could decline in iron and steel products.
- According to CRS estimates detailed in **Appendix C**, data overestimate agricultural exports from New Hampshire by at least 25%.

New Hampshire's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$131**	**100%**
84	Machinery *(Pumps for liquids, liquid elevators and parts – 40%)*	87	66
85	Electrical Machinery *(industrial furnaces–49%)*	28	22
90	Optical/Medical Instruments	5	4
70	Glass and Glassware *(Glass fibers – 79%)*	2	1
88	Aircraft, Spacecraft *(Civilian aircraft, engines, and parts – 79%)*	2	1
39	Plastic *(Self-adhesive plates, sheets, and film – 36%)*	1	1
28	Inorganic Chemicals; Rare Earth Metals	1	1
32	Tanning, Dye, Paint, Putty	1	1
73	Iron/Steel Products *(Screws, bolts, nuts and washers –81%)*	0.5	0.4
76	Aluminum	0.4	0.3
	Total for Top 10 Exports	**$128**	**98%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

New Jersey

In 2010, New Jersey shipped close to $1.7 billion in goods to South Korea, according to the Census Bureau. This represented 4% of all U.S. exports to South Korea, and 5% of the state's total exports to the world. The top 10 products accounted for 83% of New Jersey's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: precious metals (platinum); machinery (semiconductor manufacturing equipment); organic chemicals, electrical machinery (integrated circuits); pharmaceutical products; miscellaneous chemical products; medical instruments (orthopedic appliances and artificial body parts); inorganic chemicals and rare earth elements; and iron and steel scrap.
- Exports in one category: arms and ammunition, are not addressed in the USITC study.
- According to CRS estimates detailed in **Appendix C**, data overestimate both manufacturing and agricultural exports from New Jersey by at least 25%.

New Jersey's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$1,666**	***100%***
71	Precious Stones, Metals *(Platinum – 89%)*	369	*22*
84	Machinery *(Semiconductor manufacturing equipment – 68%)*	200	*12*
29	Organic Chemicals	189	*11*
93	Arms and Ammunition *(Parts and accessories for arms – 95%)*	180	*11*
85	Electrical Machinery *(Integrated circuits – 43%; Other electric machines and parts – 17%; Storage batteries – 6%)*	127	*8*
30	Pharmaceutical Products	100	*6*
38	Miscellaneous Chemical Products	71	*4*
90	Optical/Medical Instruments *(Orthopedic appliances and artificial body parts, hearing aids – 25%)*	68	*4*
28	Inorganic Chemicals; Rare Earth	50	*3*
72	Iron and Steel (*Scrap – 90%)*	37	*2*
	Total for Top 10 Exports	**$1,391**	**83%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

New Mexico

In 2010, New Mexico shipped $28 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and nearly 2% of the state's total exports to the world. The top 10 products accounted for 92% of New Mexico's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: civilian aircraft engines and parts; machinery (especially taps, cocks and valves for pipes and semiconductor manufacturing equipment); cotton; dairy products (cheese and whey); electrical machinery (especially semiconductor devices, electric apparatus for switching, and electric capacitors); cereal flour; miscellaneous chemical products; plastic; and optical and medical instruments.
- Exports could decline in articles of nickel.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from New Mexico by at least 25%.

New Mexico's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$28**	**100%**
88	Aircraft, Spacecraft *(Civilian aircraft engines and parts – 868%)*	6	20
84	Machinery *(Taps, cocks, values for pipes – 56%; Semiconductor manufacturing equipment – 26%)*	5	20
52	Cotton/Yarn/Fabric *(Cotton – 100%)*	5	17
04	Dairy, Eggs, Honey *(Cheese – 80%; Whey – 20%)*	4	14
85	Electrical *Machinery (Semiconductor devices – 26%; Electric apparatus for switching – 13%; Electric capacitors – 8%)*	2	7
75	Nickel/Articles Thereof	1	5
11	Milling; Malt; Starch *(Cereal flour – 100%)*	1	3
38	Miscellaneous Chemical Products	1	2
39	Plastic	1	2
90	Optical/Medical Instruments *(Optical fiber – 29%)*	1	2
	Total for Top 10 Exports	**$26**	**92%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

New York

In 2010, New York shipped nearly $2 billion in goods to South Korea, according to the Census Bureau. This represented 5% of all U.S. exports to South Korea, and nearly 3% of the state's total exports to the world. The top 10 products accounted for 82% of New York's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (semiconductor manufacturing equipment); civilian aircraft engines and parts; electrical machinery (integrated circuits); optical and medical instruments; miscellaneous chemical products; plastics; and wood pulp.
- Exports in three categories: repaired military products, arms and ammunition, and art and antiques, are not addressed in the USITC study.
- According to CRS estimates detailed in **Appendix C**, data overestimate both manufacturing and agricultural exports from New York by at least 25%.

New York's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$1,992**	**100%**
84	Machinery *(Semiconductor manufacturing equipment – 33%)*	451	23
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 63%)*	303	15
98	Special Other *(Repaired products – 23%)*	210	11
93	Arms and Ammunition *(Bombs, grenades, cartridges, and parts – 99.9%)*	189	9
85	Electrical Machinery *(Integrated circuits – 16%)*	152	8
97	Art and Antiques *(Paintings and drawings – 78%)*	137	7
90	Optical, Medical Instruments	90	5
38	Miscellaneous Chemical Products	45	2
39	Plastic *(Polyethers, Epoxides & Polyesters, Primary Forms – 25%)*	34	2
47	Woodpulp *(Waste and scrap of paper – 64%)*	33	2
	Total for Top 10 Exports	**$1,644**	**82%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

North Carolina

In 2010, North Carolina shipped more than $600 million in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 82% of North Carolina's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (including engines and air and vacuum pumps); electrical machinery (especially integrated circuits and semiconductor devices); plastic; precious stones with precious metals; pharmaceutical products; meat (especially pork); woodpulp; and tobacco.
- Net exports could decline in synthetic filament yarn and motor vehicles, parts and accessories.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from North Carolina by at least 25%.

North Carolina's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$606**	**100%**
84	Machinery *(Compression ignition internal combustion piston engines – 19%; Air and vacuum pumps – 6%)*	137	23
85	Electrical Machinery *(Integrated circuits – 42%; semiconductor devices – 32%; electric apparatus for line telephony – 10%)*	119	20
39	Plastic *(Polymers of vinyl acetate – 56%)*	51	8
71	Precious Stones, Metals *(with Precious metals – 98%)*	43	7
30	Pharmaceutical Products	32	5
02	Meat *(Pork – 64%; Poultry products – 36%)*	27	4
47	Woodpulp	26	4
54	Manmade Filament, Fabric *(Synthetic filament yarn – 88%)*	21	3
87	Vehicles, Not Railway *(Motor vehicle parts and accessories – 88%)*	19	3
24	Tobacco *(Unmanufactured – 99%)*	18	3
	Total for Top10 Exports	**$494**	**82%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

North Dakota

In 2010, North Dakota shipped $11 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and less than 1% of the state's total exports to the world. The top 10 products accounted for 97% of North Dakota's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (self-propelled bulldozers, graders, and scrapers); soybeans; edible fruit and nuts, electrical machinery (line telegraph equipment); organic chemicals, prepared sausage; and dried peas.
- Net exports could decline in passenger vehicles, possibly increase in tractors; and stay about the same in wheat and wheat flour.
- According to CRS estimates detailed in **Appendix C**, data underestimate manufacturing and agricultural exports from North Dakota by at least 25%.

North Dakota's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Share of Total State Exports to S. Korea
	Total Exports	**$11**	**100%**
84	Machinery *(Self-propelled bulldozers, graders, scrapers – 84%)*	9	80
10	Cereals *(Wheat – 95%)*	0.4	4
12	Misc Grain, Seed, Fruit *(Soybeans – 72%)*	0.4	4
11	Milling; Malt; Starch *(Wheat flour – 100%)*	0.4	3
87	Vehicles, Not Railway *(Tractors–65%, Passenger vehicles–10%)*	0.2	1
08	Edible Fruit and Nuts	0.1	1
85	Electrical Machinery *(Line telephone equipment–96%)*	0.1	1
29	Organic Chemicals	0.08	1
16	Prepared Meat, Fish *(Sausage – 100%)*	0.08	1
07	Vegetables *(Dried peas – 100%)*	0.07	1
	Total for 10 Exports	**$11**	**97%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Ohio

In 2010, Ohio shipped nearly $650 million in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and close to 2% of the state's total exports to the world. The top 10 products accounted for 76% of Ohio's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery; electrical machinery; medical instruments; base metals; chemical products; plastic; tanning, dye, painting and putty products, and organic chemicals.
- Net exports could decline in, passenger cars, parts, and accessories; and possibly increase in armored fight vehicles and parts;
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Ohio by at least 25%.

Ohio's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$640**	**100%**
84	Machinery *(Turbojets, turbopropellers & other gas turbines and parts – 26%; Air or vacuum pumps, compressors and fans – 16%)*	172	27
85	Electrical Machinery *(Miscellaneous parts– 29%)*	70	11
90	Optical/Medical Instruments *(X-ray apparatus, tubes, panels, screens, and parts – 34%; Oscilloscopes, spectrum analyzers and parts – 18%)*	65	10
70	Glass and Glassware	40	6
81	Other Base Metals *(Molybdenum – 97%)*	33	5
38	Miscellaneous. Chemical Products *(Antiknock preparations & other additives for mineral oils – 32%)*	29	5
39	Plastic	24	4
87	Vehicles, Not Railway *(Passenger cars – 69%; motor vehicle parts and accessories – 18%; Tanks and other armored fight vehicles and parts – 5%)*	18	3
32	Tanning, Dye, Paint, Putty	17	3
29	Organic Chemicals *(Phenols – 35%)*	17	3
	Total for Top 10 Exports	**$485**	**76%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Oklahoma

In 2010, Oklahoma shipped $58 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and about 1% of the state's total exports to the world. The top 10 products accounted for 93% of Oklahoma's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (especially gas turbines and pumps); cotton, medical instruments; civilian aircraft engines and parts; meat (pork); glue-like substances; miscellaneous chemical products; books, newspapers, and manuscripts;
- Net exports could decline in iron and steel products.
- According to CRS estimates detailed in **Appendix C**, data underestimate both manufacturing and agricultural exports from Oklahoma by at least 25%.

Oklahoma's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$58**	**100%**
84	Machinery *(Gas turbines – 35%; Pumps for liquids, liquid elevators, and parts -- 21%)*	15	26
85	Electrical Machinery *(Electric motors and generators – 39%)*	12	21
52	Cotton+Yarn, Fabric *(Uncarded Cotton – 100%)*	7	12
90	Optical/Medical Instruments *(Medical, surgical, dental or veterinary instruments – 58%)*	6	10
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 95%)*	4	6
02	Meat *(Pork – 100%)*	3	5
35	Albuminoidal Substances; Modified Starch; Glue; Enzymes	3	5
38	Miscellaneous Chemical Products	2	4
49	Book+Newspapers; Manuscript	1	2
73	Iron/Steel Products	1	2
	Total for Top 10 Exports	**$53**	**93%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Oregon

In 2010, Oregon shipped close to $1 billion in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and 5% of the state's total exports to the world. The top 10 products accounted for 89% of Oregon's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: fertilizers; machinery (semiconductor manufacturing equipment); electrical machinery (integrated circuits and semiconductor devices); forage products; ferrous waste and scrap; medical instruments; aluminum waste and scrap; preserved food (processed potato products); and paper and paperboard.
- Net exports could stay the same in wheat.
- According to CRS estimates detailed in **Appendix C**, data overestimate agricultural exports from Oregon by at least 25%.

Oregon's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$937**	**100%**
10	Cereals *(Wheat – 99.8%)*	289	31
31	Fertilizers	122	13
84	Machinery *(Semiconductor manufacturing equipment – 74%)*	100	11
85	Electrical *Machinery (Integrated circuits – 73%; Semiconductor devices – 13%)*	83	91
12	Misc Grain, Seed, Fruit *(Forage products, incl. hay and alfalfa – 73%; Seeds – 16%)*	75	8
72	Iron and *Steel (Ferrous waste and scrap – 99%)*	67	7
90	Optical/ Medical Instruments *(Oscilloscopes, spectrum analyzers and parts – 28%)*	40	4
76	Aluminum *(Waste & scrap – 99%)*	22	2
20	Preserved Food *(Processed potato products – 92%)*	17	2
48	Paper, Paperboard	17	2
	Total for Top 10 Exports	**$833**	**89%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Pennsylvania

In 2010, Pennsylvania shipped close to $1 billion in goods to South Korea, according to the Census Bureau. This represented 2% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 70% of Pennsylvania's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (especially metal rolling mills computers, and components); medical instruments; various types of electrical machinery; inorganic chemicals; iron and steel; plastic, soap wax; cocoa; and miscellaneous chemical products.
- Net exports could decline in solid fuels from coal.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Pennsylvania by at least 25%.

Pennsylvania's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$792**	**100%**
27	Mineral Fuel, Oil *(Solid fuels from coal – 97%)*	119	15
84	Machinery *(Metal rolling mills – 13%; Computers & components – 13%)*	101	13
90	Optical/Medical Instruments *(Hydrometers, thermometers, pyrometers – 18%)*	69	9
85	Electrical Machinery *(Semiconductor devices – 15%; Adaptive power supplies and parts – 15%; Electric motor/generators and parts – 10%)*	64	8
28	Inorganic Chemicals; Rare Earth Metals *(Halides & halide oxides of nonmetals – 68%)*	46	6
72	Iron and Steel *(Ferrous waste and scrap – 41%)*	39	5
39	Plastic	38	5
34	Soap, Wax, Dental Preparation	26	3
18	Cocoa *(Chocolate products – 99%)*	25	3
38	Miscellaneous Chemical Products	23	3
	Total for Top 10 Exports	**$550**	**70%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Rhode Island

In 2010, Rhode Island shipped $17 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and close to 1% of the state's total exports to the world. The top 10 products accounted for 93% of Rhode Island's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery; optical and medical instruments; articles of silver; plastic; electrical machinery; soap, wax; fish and seafood (especially frozen eels); and woodpulp.
- Net exports could decline in wadding, felt, twine, and rope; and iron and steel products.
- According to CRS estimates detailed in **Appendix C**, data underestimate both manufacturing and agricultural exports from Rhode Island by at least 25%.

Rhode Island's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$17**	**100%**
84	Machinery *(Ship's derricks, cranes, mobile lifting frames – 33%)*	4	26
90	Optical/Medical Instruments	4	26
71	Precious Stones, Metals *(Silver –92%)*	2	12
39	Plastic *(Plates, sheets, film – 49%)*	1	7
85	Electrical Machinery *(Electric, laser, or other light or photon beams – 26%)*	1	6
56	Wadding, Felt, Twine, Rope	1	5
34	Soap, Wax, Etc; Dental Preparations	1	4
03	Fish and Seafood *(Frozen eels – 66%)*	1	3
73	Iron/Steel Products	0.4	2
47	Woodpulp *(Waste and scrap of paper or paperboard – 100%)*	0.3	2
	Total for Top 10 Exports	**$15**	**93%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

South Carolina

In 2010, South Carolina shipped nearly $400 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 2% of the state's total exports to the world. The top 10 products accounted for 86% of South Carolina's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in; medical instruments (orthopedic appliances, artificial joints); woodpulp; machinery (especially roller bearings and parts and computers and components); paper and paperboard; plastic; pharmaceutical products; rubber (especially tires); organic chemicals; and miscellaneous chemical products.
- Net exports could decline in vehicles (motor vehicle parts and accessories; and passenger cars).
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from South Carolina by at least 25%.

South Carolina's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$379**	**100%**
87	Vehicles, Not Railway *(Motor vehicle parts and accessories – 57%; passenger cars – 40%)*	132	35
90	Optical/Medical Instruments *(Orthopedic appliances, especially artificial joints – 45%)*	65	17
47	Woodpulp	39	10
84	Machinery *(Ball or roller bearings and parts – 18%; Computers and components – 11%)*	27	7
48	Paper, Paperboard	13	4
39	Plastic	13	3
30	Pharmaceutical Products	11	3
40	Rubber *(New pneumatic tires – 84%)*	9	2
29	Organic Chemicals	9	2
38	Miscellaneous Chemical Products	8	2
	Total for Top 10 Exports	**$326**	**86%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

South Dakota

In 2010, South Dakota shipped $13 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and 1% of the state's total exports to the world. The top 10 products accounted for 98% of South Dakota's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: meat pork; toys and sports equipment (arcade tables); machinery (self-propelled bulldozers, graders, and scrapers); salt, sulfur, earth and stone; organic chemicals; dairy (cheese and curd); explosives (fireworks and signal flares); electrical machinery (especially semiconductors); and glazier's putty.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from South Dakota by at least 25%.

South Dakota's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Share of Total State Exports to S. Korea
	Total Exports	**$13**	**100%**
02	Meat *(Pork – 99.9%)*	4	29
95	Toys and Sports Equipment *(Arcade tables – 100%)*	3	21
84	Machinery *(Self-propelled bulldozers, graders, scrapers – 68%)*	2	15
25	Salt; Sulfur; Earth, Stone	1,	11
29	Organic Chemicals	1	8
04	Dairy, Eggs, Honey *(Whey–51%, Cheese and curd – 49%)*	1	5
94	Furniture and Bedding *(Medical/surgical furniture and bedding – 100%)*	0.5	4
36	Explosives *(Fireworks and signal flares – 100%)*	0.4	3
85	Electrical Machinery *(Semiconductors – 46%)*	0.2	2
32	Tanning, Dye, Paint, Putty *(Glazier's putty –100%)*	0.1	1
	Total for 10 Exports	**$13**	**98%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Tennessee

In 2010, Tennessee shipped over $550 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 81% of Tennessee's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: medical instruments; plastic, tanning, dye and putty; machinery (including computers, components, and parts for engines); woodpulp; electrical machinery; meat (chicken); and pig iron.
- Net exports could decline in vehicles (especially passenger cars and motor vehicle parts and accessories); and artificial filament yarn.
- According to CRS estimates detailed in **Appendix C**, data underestimate manufacturing exports from Tennessee by at least 25%.

Tennessee's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$557**	**100%**
87	Vehicles, Not Railway *(Passenger cars – 58%; motor vehicle parts and accessories – 41%)*	88	16
90	Optical/Medical Instruments *(Medical, surgical, dental or veterinary instruments – 64%; orthopedic appliance, artificial body parts, hearing aids – 29%)*	87	16
39	Plastic *(Cellulose and chemical derivatives – 78%)*	68	12
54	Manmade Filament, Fabric *(Artificial filament yarn – 90%)*	58	10
32	Tanning, Dye, Paint, Putty	44	8
84	Machinery *(Computers and components – 18%; Parts for engines – 14%)*	28	5
47	Woodpulp	21	4
85	Electrical Machinery *(Electrical apparatus for switching – 23%; electrical apparatus for line telephony – 20%)*	20	4
02	Meat *(Chicken products – 99%)*	19	3
72	Iron and Steel *(Pig iron – 99.8%)*	16	3
	Total for Top 10 Exports	**$449**	**81%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Texas

In 2010, Texas shipped more than $6.4 billion in goods to South Korea, according to the Census Bureau. This represented 17% of all U.S. exports to South Korea, and 3% of the state's total exports to the world. The top 10 products accounted for 91% of Texas's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (semiconductor manufacturing equipment and machinery parts); electrical machinery (semiconductor devices and integrated circuits); organic chemicals; plastic; miscellaneous chemical products; medical instruments; and cotton.
- Net exports could decline in mineral fuel oil (from coal tar); and iron and steel products.
- According to CRS estimates detailed in **Appendix C**, data overestimate both manufacturing and agricultural exports from Texas by at least 25%.

Texas' Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**6,447**	**100%**
84	Machinery *(Semiconductor manufacturing equipment – 39%; Machinery parts – 33%)*	2,041	32
85	Electrical Machinery *(Semiconductor devices – 71%; Integrated circuits – 8%)*	1,307	20
29	Organic Chemicals	1,257	20
27	Mineral Fuel, Oil *(Oils from high temperature coal tar – 81%; Oil (not crude) – 14%)*	414	6
39	Plastic *(Polyethers, epoxides & polyesters, primary forms – 41%)*	218	3
38	Miscellaneous Chemical Products	152	2
73	Iron/Steel Products *(Seamless tubes and pipes – 46%)*	135	2
02	Meat *(Beef – 93%; Beef offals – 4%; Pork – 2%)*	121	2
90	Medical Instruments *(Oscilloscopes, spectrum analyzers and parts – 18%)*	118	2
52	Cotton + Yarn, Fabric *(Cotton not carded – 99.8%)*	86	1
	Total for Top 10 Exports	**5,848**	**91%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Utah

In 2010, Utah shipped nearly $300 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and 2% of the state's total exports to the world. The top 10 products accounted for 86% of Utah's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: electrical machinery (integrated circuits); beauty products; miscellaneous food preparations; base metals (zirconium); optical/medical instruments including catheters and X-ray equipment); ores, fruit and vegetable juices; and soap, wax, and dental preparations.
- Net exports could decline in iron and steel products and motor vehicle parts and accessories.
- According to CRS estimates detailed in **Appendix C**, data overestimate manufactured exports from Utah by at least 25%.

Utah's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$273**	**100%**
85	Electrical Machinery *(Integrated circuits – 87%)*	93	34
33	Perfumery, Cosmetic *(Miscellaneous beauty products)*	48	17
73	Iron/Steel Products *(Pipes for oil gas pipelines)*	21	8
21	Miscellaneous Food *(Food preparations – 91%)*	19	7
81	Other Base Metals *(Zirconium – 100%)*	16	6
90	Optical/Medical Instruments *(including Catheters – 30%; X–ray apparatus – 27%)*	9	3
26	Ores, Slag, Ash *(Precious Metal Ores and Concentrates – 100%)*	9	3
20	Preserved Food *(Fruit and vegetable juices – 100%)*	7	3
87	Vehicles, Not Railway *(Motor vehicle parts and accessories – 97%)*	7	3
34	Soap, Wax; Dental Preparations	7	2
	Total for Top 10 Exports	**$236**	**86%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Vermont

In 2010, Vermont shipped $130 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and 3% of the state's total exports to the world. The top 10 products accounted for 99% of Vermont's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: electrical machinery (especially integrated circuits); paper and paperboard; optical and medical instruments; machinery (especially semiconductor manufacturing equipment); dairy products (cheese and whey); and copper.
- Net exports could decline in wadding felt, twine and rope; and iron and steel products (stove elements).
- Exports in one industry are not estimated in the USITC study: arms and ammunition.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Vermont by at least 25%.

Vermont's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$130**	**100%**
85	Electrical Machinery *(Integrated circuits – 50%)*	116	89
48	Paper, Paperboard	4	3
90	Optical/Medical Instruments	4	3
84	Machinery *(Semiconductor manufacturing equipment – 40%)*	2	1
56	Wadding, Felt, Twine, Rope	1	1
04	Dairy, Eggs, Honey *(Cheese – 90%; Whey – 9%)*	1	0.5
74	Copper	1	0.4
93	Arms and Ammunition *(Parts)*	0.4	0.3
73	Iron/Steel Products *(Stove elements –52%)*	0.3	0.3
95	Toys and Sports Equipment *(Pools – 78%)*	0.3	0.2
	Total for Top 10 Exports	**$129**	**99%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Virginia

in 2010, Virginia shipped nearly $400 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and more than 2% of the state's total exports to the world. The top 10 products accounted for 87% of Virginia's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: electrical machinery (especially integrated circuits, electric motors and generators); machinery (including machine tools); plastic; paper and paperboard; beauty products; optical and medical instruments; iron and steel (rolled), and meat (especially poultry).
- Net exports could decline in solid fuel from coal and manmade staple fibers.
- According to CRS estimates detailed in **Appendix C**, data overestimate agricultural exports from Virginia by at least 25%.

Virginia's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$379**	**100%**
85	Electrical Machinery *(Integrated circuits – 53%; Electric motors and generators – 21%; Insulated wire, optical sheath fiber cables – 10%)*	74	20
27	Mineral Fuel, Oil Etc *(Solid fuels from coal – 100%)*	65	17
84	Machinery *(Machine tools – 30%; Taps, cocks, valves, etc, for pipes – 12%)*	50	13
39	Plastic	41	11
48	Paper, Paperboard	34	9
55	Manmade Staple Fibers	24	6
33	Perfumery, Cosmetic *(Beauty products – 71%)*	16	4
90	Optical/Medical Instruments *(Oscilloscopes and spectrum analyzers – 17%; Liquid crystal devices – 12%)*	10	3
72	Iron and Steel *(rolled)*	9	2
02	Meat *(Poultry – 61%; Pork – 38%)*	8	2
	Total for Top 10 Exports	**$330**	**87%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Washington

In 2010, Washington shipped over $2.7 billion in goods to South Korea, according to the Census Bureau. This represented 7% of all U.S. exports to South Korea, and 5% of the state's total exports to the world. The top 10 products accounted for 82% of Washington's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: corn; aircraft (civilian aircraft engines and parts); wood; scrap iron; animal feed; forage products including hay and alfalfa; paper and paperboard; machinery (computers and components); and electrical machinery (integrated circuits).
- Net exports could decline in mineral fuel oil.
- According to CRS estimates detailed in **Appendix C**, data overestimate agricultural exports from Washington by at least 25%.

Washington's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$2,719**	**100%**
10	Cereals *(Corn – 94%; Wheat – 6%)*	832	31
88	Aircraft, Spacecraft *(Civilian aircraft, engines and parts – 89%)*	799	29
44	Wood	117	4
27	Mineral Fuel, Oil *(Oil (not crude) – 66%)*	101	4
72	Iron and Steel *(Ferrous waste & scrap – 96%)*	77	3
23	Food Waste; Animal Feed *(Soymeal – 62%; Distillers' grains – 34%)*	77	3
12	Misc. Grain, Seed, Fruit *(Forage products, incl. hay and alfalfa – 98%)*	72	3
48	Paper, Paperboard	54	2
84	Machinery *(Computers and components – 41%; Semiconductor manufacturing equipment – 14%)*	53	2
85	Electrical Machinery *(Integrated circuits – 27%)*	52	2
	Total for Top 10 Exports	**$2,232**	**82%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

West Virginia

In 2010, West Virginia shipped over $100 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and less than 2% of the state's total exports to the world. The top 10 products accounted for 91% of West Virginia's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: plastic; nickel (plates, sheets, strip and foil); organic chemicals; soap, wax; ceramic products; aluminum (aluminum plates sheets, and strip); woodpulp; and rubber.
- Net exports in one industry could decline in mineral fuel (from coal) and iron and steel products.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from West Virginia by at least 25%.

West Virginia's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$107**	**100%**
39	Plastic *(Primary forms of polyethers, expoxides and polyesters – 39%)*	40	38
75	Nickel/Articles Thereof *(Nickel Plates, Sheets, Strip and Foil – 78%)*	17	15
29	Organic Chemicals	12	12
27	Mineral Fuel, Oil *(Solid fuels from coal – 100%)*	9	9
34	Soap, Wax, Dental Preparations	6	5
69	Ceramic Products *(Refractory bricks – 53%)*	3	3
76	Aluminum *(Aluminum Plates, Sheets & Strip – 88%)*	3	3
47	Woodpulp *(Mechanical woodpulp – 100%)*	3	2
40	Rubber *(Synthetic rubber – 69%)*	2	2
73	Iron/Steel Products	2	2
	Total for Top 10 Exports	**$97**	**91%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Wisconsin

In 2010, Wisconsin shipped $360 million in goods to South Korea, according to the Census Bureau. This represented 1% of all U.S. exports to South Korea, and nearly 2% of the state's total exports to the world. The top 10 products accounted for 86% of Wisconsin's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: machinery (especially computers and components, refrigerators, freezers and heat pumps); medical instruments; electrical machinery (especially for line telephones and electrical light equipment); meat (frozen beef); preserved food (canned sweet corn); vehicles (parts and accessories for bicycles and wheel chairs); dairy (whey and cheese); soybeans; and plastic.
- Net exports could decline in raw cattle hides and skins and motor vehicle parts and accessories.
- According to CRS estimates detailed in **Appendix C**, data underestimate agricultural exports from Wisconsin by at least 25%.

Wisconsin's Top 10 Exports to South Korea, 2010

HTS Chapter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$360**	**100%**
84	Machinery *(Computers and components – 32%; Refrigerators, freezers, heat pumps – 13%)*	96	27
90	Optical/Medical Instruments *(Medical, surgical, dental, or veterinary instruments – 35%; X-ray apparatus – 25%)*	72	20
85	Electrical Machinery *(Electric apparatus for line telephony, parts – 29%; Electrical light equipment – 15%)*	45	12
41	Hides and Skins *(Raw cattle hides & skins – 97%)*	30	8
02	Meat *(Beef, frozen – 91%)*	23	6
20	Preserved Food *(Canned sweet corn – 98%)*	12	3
87	Vehicles, Not Railway *(Parts and accessories for bicycles and invalid carriages – 40%; Motor vehicle parts and accessories – 28%)*	12	3
04	Dairy, Eggs, Honey *(Whey – 62%; Cheese – 34%)*	9	3
12	Misc Grain, Seed, Fruit *(Soybeans – 94%)*	6	2
39	Plastic	5	1
	Total for Top 10 Exports	**$311**	**86%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Wyoming

In 2010, Wyoming shipped nearly $40 million in goods to South Korea, according to the Census Bureau. This represented less than 0.5% of all U.S. exports to South Korea, and nearly 4% of the state's total exports to the world. The top 10 products accounted for virtually 100% of Wyoming's total exports to South Korea. By the end of the KORUS FTA implementation period, based on USITC's analysis:

- Net exports could increase in: inorganic chemicals; miscellaneous chemical products; miscellaneous food (baking powders); optical instruments (optical telescopes); salt, sulfur, earth and stone; forage products; plastic (silicone); and machinery (pumps and fans).
- Net exports could decline in iron and steel products.
- According to CRS estimates detailed in **Appendix C**, data overestimate manufacturing exports and underestimate agricultural exports from Wyoming by at least 25%.

Wyoming's Top 10 Exports to South Korea, 2010

HTS Chap-ter	Product	Export Value (in $mil)	Product's Share of Total State Exports to S. Korea
	Total Exports	**$39**	**100%**
28	Inorganic Chemicals; Rare Earth Metals *(Carbonates – 99%)*	36	93
38	Miscellaneous Chemical Products	1	3
82	Tool, Cutlery, Of Base Metals	1	1
21	Miscellaneous Food *(Baking powders – 100%)*	0.5	1
90	Optical/Medical Instruments *(Optical telescopes – 66%)*	0.2	0.5
25	Salt; Sulfur; Earth, Stone	0.2	0.5
73	Iron/Steel Products	0.1	0.3
12	Misc Grain, Seed, Fruit *(Forage products – 100%)*	0.04	0.09
39	Plastic *(Silicone – 100%)*	0.02	0.05
84	Machinery *(Air or vacuum pumps, compressors, and fans – 100%)*	0.008	0.02
	Total for 10 Exports	**$39**	**99.9%**

Source: For export data: Census data and Global Trade Atlas. See USITC estimates summarized in **Table 4** for list of sectors for which net exports at the national level (exports minus imports) are expected to increase or decrease upon full implementation.

Appendix B. Detailed U.S.-South Korea Trade Data

Table B-1. Top 25 U.S. Exports to South Korea, 2010

HTS Chapter	Product	Export Value ($millions)	Percent of Total
	TOTAL All Products	**$38,844**	**100%**
84	Machinery; Reactors, Boilers (Machines and apparatus for the manufacture of semiconductor devices – 40%; Machinery parts – 12%; Turbojets, turbopropellers and other gas turbines and parts – 6%)	6,946	18
85	Electrical Machinery (Integrated circuits – 31%; Semiconductor devices – 22%)	5,075	13
90	Optical, Medical Instruments (Instruments and appliances used in veterinary, medical, dental, and other electro-medical apparatus – 18%; Oscilloscopes/spectrum analysers and other instruments – 15%)	2,660	7
88	Aircraft, Spacecraft (Civilian aircraft, engines and parts – 65%)	2,431	6
29	Organic Chemicals (Nitrile-function compounds – 23%; Cyclic Hydrocarbons – 16%; Phenols – 9%)	2,153	6
10	Cereals (Corn – 77%; Wheat – 19%; Rice – 4%)	1,847	5
27	Mineral Fuel, Oil (Oils and other products of the distillation of high temperature coal tar – 46%; Coal – 35%)	1,518	4
39	Plastic (Polyacetals, other polyethers, expoide resins, polycarbonates in primary form – 17.5%; polyamides in primary forms – 10%)	1,236	3
72	Iron and Steel (Ferrous waste and scrap – 90%)	1,146	3
98	Special Classification Provisions, Not elsewhere classified (Military articles exported with intent to reimport)	1,025	3
87	Vehicles, Not Railway (Passenger cars – 44%; motor vehicle parts and accessories – 35%; tank and other armored fighting vehicles and parts – 8%)	814	2
38	Miscellaneous Chemical Products (Reaction initiators and accelerators – 32%)	809	2
02	Meat (Beef – 63%; Pork – 21%; Poultry – 11%)	783	2
28	Inorganic Chemicals; Rare Earth Metals (Hydrogen, rare gases, and other non-metals – 30%; Radioactive chemical elements and isotopes, their compounds, mixtures and residues – 21%)	739	2
30	Pharmaceutical Products (Medicaments of mixed or unmixed products for therapeutic or prophylactic uses – 45%; Human blood/animal blood for therapeutic use – 42%)	644	2
93	Arms and Ammunition (Bombs, grenades, cartridges and parts – 59%; Parts and accessories of arms – 33%)	586	2
12	Miscellaneous Grain, Seed (Soybeans – 56%; Forage products – 34%; Seeds for sowing – 4%)	560	1
71	Precious Stones (Platinum – 68%;)	498	1

HTS Chapter	Product	Export Value ($millions)	Percent of Total
47	Woodpulp (Chemical woodpulp, soda or sulfate – 44%; Recovered (waste and scrap) paper or paperboard – 43%)	423	1
41	Hides and Skins (Raw hides and skins of bovine or equine animals – 95%; Bovine or equine leather – 8%)	410	1
76	Aluminum and Articles Thereof (Aluminum waste and scrap – 57%)	376	1
08	Edible Fruit and Nuts (Fresh oranges – 31%; Walnuts – 18%; Almonds – 17%; Fresh cherries – 7%)	371	1
26	Ores, Slag, Ash (Zinc ores and concentrates – 43%; Lead ores and concentrates – 24%; Precious metal ores and concentrates – 15%)	342	1
73	Iron and Steel Products (Tubes, pipes and hollow profiles – 23%; Screws, bolts, nuts, washers – 15%)	312	1
23	Food Waste *(Distillers grains for feed – 35%; Soybean meal – 31%)*	292	1
	SUB-TOTAL	**$33,994**	**88%**

Source: Global Trade Atlas (Census data).

Table B-2. Top 10 U.S. Imports from South Korea, 2010

HTS Chapter	Product	Import Value ($ millions)	Percent of Total
	TOTAL All Products	**$48,860**	**100%**
85	Electrical Machinery *(Telephone sets and other apparatus for transmitting and receiving of voice/ image/data – 57%; Integrated circuits – 18%)*	15,269	31
84	Machinery; Reactors, Boilers *(Parts and accessories for typewriters and other office machines – 28%; Refrigerators and freezers – 10%; Washing machines – 8%)*	9,346	19
87	Vehicles, Not Railway *(Passenger cars – 71%; Motor vehicle parts and accessories – 28%)*	9,258	19
27	Mineral Fuel, Oil *(Oil (not crude) – 96%)*	2,416	5
40	Rubber *(Tires – 75%)*	1,572	3
73	Iron and Steel Products *(Tubes, pipes and hollow profiles of iron or steel – 53%)*	1,540	3
39	Plastic *(Plates, sheets, film of plastic – 21%; Plastic containers – 13%)*	1,066	2
29	Organic Chemicals *(Cyclic Hydrocarbons – 63%; Acyclic Hydrocarbons – 7%)*	946	2
72	Iron and Steel *(Flat-rolled products of iron – 33%)*	893	2
90	Optical, Medical Instruments *(Instruments and appliances used in veterinary, medical, surgical, dental and other electro-medical apparatus – 24%; Liquid crystal devices/lasers – 11%)*	845	2
	SUB-TOTAL	**$43,150**	**88%**

Source: Global Trade Atlas (Census data).

Appendix C. Trade Models and Data Issues

Trade Models

Trade models of the type used in the analysis of the KORUS FTA are part of a class of economic models referred to as computable general equilibrium models (CGE) that incorporate data on trade and a range of domestic economic variables on nearly 100 countries. As a result of this large number of countries, and the vast amounts of data that are used, the models can provide important insights into the mechanisms by which changes in tariffs or other parameters can affect a range of countries. For practical reasons, however, the data in the models must be limited, so the models necessarily must sacrifice some level of precision in their estimating abilities. Since such trade models originally were developed with the intent of analyzing the economic effects of such multi-country trade agreements as the Uruguay Round, this lack of precision was not considered to be an important drawback. However, this lack of precision may be an issue when the models are used to estimate the effects of bilateral trade agreements, especially at the state level, where the overall amount of trade and, therefore, the impact of the agreement, is expected to be less than that of a comprehensive multilateral agreement. In addition, such models do not account for changes in exchange rates, since such effects were considered to be neutral in a large multi-country trade agreement. Movements in exchange rates, however, could have an important impact on trade patterns that involve countries that are parties to a bilateral trade agreement.

In addition, estimates derived from trade models represent a static analysis that does not represent the dynamic effects that likely arise from trade agreements. In particular, the estimates are based on the assumption that all other economic factors would remain constant during the time leading to full implementation. The estimates also are based on the assumption that the composition of trade between the United States and South Korea at the time the estimates were made, in this case 2001 data projected to 2008, would also remain constant. Considering the dynamic nature of both economies, however, these assumptions appear to be unrealistic and may limit the usefulness of the final results of the trade model. If the U.S. and South Korean economies continue to change over the next decade at the rate experienced during the past decade, both economies and the composition of trade between them likely will differ appreciably from what can be projected from current data.

In order to mitigate some of the limitations of the trade model, USITC industry analysts refined the estimates—that is, they prepared a qualitative assessment, of the potential impact of the agreement at the industry level. These estimates provide an analysis of the immediate impact of the agreement and of the phased elimination of tariffs and tariff rate quotas on 40 broadly-defined industrial sectors and on a group of 20 narrowly defined industrial sectors and their sub-sectors. Both of these groups of industries are used in this report to provide estimates of the impact of the KORUS FTA on state-level industries.

State Export Data Issues[10]

As mentioned, this report uses Census Bureau data on the origin of movement of commodities by state[11] to estimate exports to South Korea as a result of the KORUS FTA. The Census Bureau's Origin of Movement (OM) Data Series is compiled from the Electronic Export Information (EEI) filed by exporters or their agents. The OM data series tracks exports from the zip code where their documented *transportation* begins, not the origin of production, to the country of their foreign destination. The data represent a shipment of one or more kinds of merchandise from one exporter to one foreign importer on a single carrier. The state identified in the data is that from which the final merchandise starts its journey. According to the Census Bureau, there are a number of known limitations to the data.[1] In particular, whenever shipments represent a consolidation of goods, such as through warehouses, the state with the warehouse will be credited with the exports, rather than the state of origin of the exports. This caveat is particularly relevant to agricultural products shipped from inland states down the Mississippi River for export from the port of New Orleans. In this case, New Orleans would be credited as the state of origin of the exports. In addition, when goods are stored and then exported by central offices or intermediaries, export data would understate exports from the original production state and overstate exports from the office or consolidation point.

Generally speaking, the origin of movement (OM) data tend to *overestimate* exports from port states such as California and New York and *underestimate* exports from such interior states as Iowa, Missouri, and South Dakota. This miscounting is particularly prevalent when products are either consolidated or stored by central offices or intermediaries before entering official export channels. In such a case, the state-level export data do not provide a precise picture of the product composition of exports from each state to the world or to individual countries such as South Korea. Despite this limitation, these data provide the best available indication of what is produced and exported from each state.[12]

The issue of underestimation or overestimation is less of a problem among manufactured goods than among agricultural products. For manufactured products, the origin of movement and the origin of production often coincide. Typically, manufacturers ship their exports to a foreign destination directly from the factory gate or from a nearby distribution facility. In these instances, the state where the product is manufactured receives credit for the export. CRS estimates that OM data underestimates manufacturing exports by 25% or more in 10 states and overestimates them in 12 states, as shown in **Table C-1**. However, manufactured products from different states sometimes are consolidated for export before shipment.[13] When this occurs, the state-of-production-origin is lost. Instead, the state where these manufactured goods are consolidated receives credit for the entire value of the export, even though those products were manufactured in other states. In general, coastal states with large ports such as California, Texas, or New York

[10] Information on the Census Bureau data was taken from U.S. Census Bureau, Foreign Trade Statistics, State Data Series.

[11] The legal authority for such collection and publication of U.S. foreign commerce and trade statistics is established by Title 13, Chapter 9, and Title 18, Section 1905 of the U.S. Code, and by the regulatory mandate in Title 15, CFR, Part 30.90-30.91.

[12] See also discussion in Andrew Cassey, "State Export Data: Origin of Movement vs. Origin of Production," October 15, 2006, pp. 26-35, accessed at http://mpra.ub.uni-muenchen.de/3352/1/MPRA_paper_3352.pdf.

[13] Census defines a shipment as "all merchandise sent from one seller of the commodity, or the United States principal party of interest (USPPI) to one foreign consignee, to a single country of ultimate destination (the location of the receiving party of interest), on a single carrier (by truck, railcar, ship, or airplane), on the same day."

record higher exports because of these consolidated shipments, while inland states report lower exports.[14]

Several other issues affect state-level trade statistics for manufactured goods. Value-added considerations are not taken into account in recording state level exports. The OM data series only reports the sales price and the state from which the completed/finished product is exported. It does not capture value added by myriads of workers and businesses in states where intermediate steps were taken toward the completion of complex manufactured export goods, such as automobiles and aircraft –exports that are comprised of thousands of parts produced in many different locations. As a result, the OM data seriously underestimates value added in many states. See **Table C-1** for a list of states whose exports are overestimated or underestimated by the data series.

Accounting for agricultural exports by state, however, is particularly complicated. The Census Bureau explicitly warns that the OM state export data tend to understate agricultural exports from farm states and inflate agricultural exports from states with major ports that handle large volumes of bulk agricultural commodities (e.g., grains, soybeans) and high-value shipments of processed foods. By CRS calculations, OM data underestimate agricultural exports by at least 25% in more than 28 states, and overestimate such exports by the same extent in 12 states.

Bulk agricultural products in particular are overwhelmingly sold in many interior states to intermediaries,[15] who ship them by barge or rail to major coastal ports to await export. Other unprocessed agricultural products are produced in one state but sent to a warehouse in another state, or to a facility for processing into a food or beverage product, before being exported. When shipped, these products are not counted as exports of the state where the commodities were produced but rather as exports from the state where they began to move to foreign markets. For instance, corn and soybeans produced in Iowa, Missouri, and other Midwestern states are shipped down the Mississippi River for consolidation at the elevators located in New Orleans. Also, a food product produced in Idaho, and then shipped to a Washington wholesaler or freight forwarder for sale abroad, could be credited as an export of Washington state instead of as a export from Idaho under the OM state export data collection system.

[14] Casey, op. cit., p. 27.

[15] Intermediaries are also dominate in the exports of minerals and other bulk commodities.

Table C-1. CRS Estimates of States for which Census Origin of Manufacturing (OM) Trade Data Overestimate or Underestimate State Manufacturing or Agricultural Exports by 25% or More

Manufacturing		Agriculture	
Exports Overestimated (OM)	**Exports Underestimated (UM)**	**Exports Overestimated (OA)**	**Exports Underestimated (UA)**
Arizona	Alabama	Arizona	Arkansas
California	Arkansas	Connecticut	Idaho
Connecticut	Colorado	Florida	Illinois
Florida	Iowa	Louisiana	Indiana
Maryland	Kansas	Massachusetts	Iowa
Massachusetts	Missouri	New Hampshire	Kansas
Nevada	Nebraska	New Jersey	Kentucky
New Jersey	North Dakota	New York	Maryland
New York	Oklahoma	Oregon	Michigan
Texas	Rhode Island	Texas	Minnesota
Utah		Virginia	Missouri
Wyoming		Washington	Montana
			Nebraska
			New Mexico
			North Carolina
			North Dakota
			Ohio
			Oklahoma
			Pennsylvania
			Rhode Island
			South Carolina
			South Dakota
			Vermont
			West Virginia
			Wyoming
			Wisconsin

Source of Data: CRS calculations using methodology described below.

Notes on Agricultural Export Data: The overestimating and underestimating of U.S. agricultural exports by state are derived by a comparison of two U.S. Government data series. The U.S. Department of Agriculture's (USDA) Foreign Agricultural Service disaggregates the U.S. State Export Data series compiled by the U.S. Census Bureau to develop data showing agricultural exports by state (available at http://www.fas.usda.gov/gats/default.aspx). This data series shows origin of movement, not where agricultural products were harvested, raised, or processed. By contrast, USDA's Economic Research Service (ERS) estimates state agricultural exports using customs district-level export data compiled by the Census Bureau and State-level agricultural production data from USDA's National Agricultural Statistics Service. ERS derives state agricultural export data based on each state's share of the U.S. production of exported commodities. In other words, a state's share of the production of a commodity is applied to U.S. exports for the commodity to derive state export value. Because the ERS data series is published on a fiscal year basis, CRS modified two fiscal years' data to derive a calendar year 2008 estimate to compare to the FAS 2008 data series compiled by Census.

Notes on Manufacturing Export Data: The overestimating and underestimating of U.S. manufacturing exports by state are derived by comparing the exports from manufacturing establishments, widely considered to be the best, though also flawed, data for origin of production for manufactured goods with the OM data. The most recent exports as reported by manufacturers in the Census report are based on the 2008 Annual Survey of Manufacturers. These Census statistics are disaggregated by industry sector on a North American Industry Classification System (NAICS) basis, which is the preferred classification system for industry statistics, and state of the manufacturer. The NAICS industry breakdown also allows for a direct comparison between the OM data and the Exports from Manufacturing Establishments report. A comparison of 2008 data was undertaken to identify those states where OM manufactured exports might have been overestimated (OA) and those where they might have been underestimated (UA).

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