United States International Trade Commission

U.S.-Korea FTA:

The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea

Investigation No. 332-425
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September 2001

U.S. International Trade Commission

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PREFACE

On December 18, 2000, the U.S. International Trade Commission received a letter from the Senate Committee on Finance (the Committee) requesting that the Commission conduct a fact-finding investigation under section 332(g) of the Tariff Act of 1930 of the economic effects of a free trade agreement between the Republic of Korea and the United States. In response to the request, the Commission instituted investigation 332-425 on January 9, 2001.

The Committee requested that the Commission's report include:

- an overview of the Korean economy;
- an overview of the current economic relationship between the United States and the Republic of Korea, including a discussion of the important industry sectors in both countries;
- an inventory and analysis of the main tariff and nontariff barriers to trade between the United States and Republic of Korea;
- to the extent that data are available, the estimated effects of eliminating all quantifiable tariff and non-tariff trade barriers on the volume of trade in goods (with special attention paid to agricultural goods) and services between the two countries, sectoral output and gross domestic product for each country, wages and employment across industry sectors for each country, and final prices paid by the consumers in each country; and,
- a qualitative assessment of the economic effects of removing non-quantifiable trade barriers.

The Committee requested that the Commission conduct its analysis of the contemplated free trade agreement (FTA) in a static, as well as dynamic, analytical framework.

Copies of the notice of the investigation were posted at the Office of the Secretary, U.S. International Trade Commission, Washington, DC 20436, and the notice was published in the Federal Register (66 F.R. 4859) on January 18, 2001.

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EXECUTIVE SUMMARY

Background and Analytical Approach

On December 18, 2000, the U.S. International Trade Commission (the Commission, or the USITC) received a letter from the Senate Committee on Finance (the Committee) requesting that the Commission conduct a fact-finding investigation under section 332(g) of the Tariff Act of 1930 of the economic effects of a free trade agreement between the United States and the Republic of Korea (referred to hereafter as Korea). The Committee requested that the Commission's report include:

- an overview of the Korean economy;
- an overview of the current economic relationship between the United States and the Republic of Korea, including a discussion of the important industry sectors in both countries;
- an inventory and analysis of the main tariff and nontariff barriers to trade between the United States and Republic of Korea;
- to the extent that data are available, the estimated effects of eliminating all quantifiable tariff and non-tariff trade barriers on the volume of trade in goods (with special attention paid to agricultural goods) and services between the two countries, sectoral output and gross domestic product for each country, wages and employment across industry sectors for each country, and final prices paid by the consumers in each country; and,
- a qualitative assessment of the economic effects of removing non-quantifiable trade barriers.

Principal Findings

The Commission found that, four years following the implementation of a U.S.-Korea FTA, total U.S. exports and imports are estimated to be approximately 0.8 percent and 1.0 percent higher, respectively, than if the FTA had not been implemented. At the bilateral level, U.S. exports to Korea would likely increase by 54 percent, while U.S. imports from Korea would be 21 percent higher. The largest gains from an FTA for U.S. exports to Korea are expected in agriculture. The largest gains for Korean exports to the United States are anticipated in textiles, apparel, and leather goods, and other manufacturing (e.g., chemicals and allied products, electronics, and transportation).

At the national level, the effects of the FTA on gross domestic product (GDP) are expected to be quite small. This is not unexpected given that total trade as a share of GDP in the United States was 26 percent in 2000, and U.S.-Korea trade represents less than three percent of total U.S. trade.

Analytical Results

- An index to measure comparative advantage suggests that the United States has a comparative advantage in a wide range of agricultural products, and that Korea has a comparative advantage in textiles, apparel, travel goods, and rubber products. Given that each country faces relatively high tariffs on goods in which they have a comparative advantage, bilateral trade liberalization is expected to increase trade particularly in these sectors. Computable general equilibrium modeling (CGE) results support this. The results suggest that the largest gains (in percentage terms) in U.S. exports to Korea are expected in agricultural products (rice, dairy, meat products, and fruits and vegetables). The largest gains in Korean exports to the United States are expected in textiles, apparel and leather goods, and other manufacturing (e.g., chemicals and allied products, electronics, and transportation). The trade flows in each of these sectors are expected to at least double.

- The Commission estimates that, four years following the implementation of a U.S.-Korea FTA, total U.S. exports could be 0.8 percent ($7 billion) higher than if the FTA had not been implemented, while total U.S. imports could rise by 1 percent ($13 billion).[1] Effects on bilateral trade would be more noticeable: U.S. exports to Korea are estimated to be 54 percent ($19 billion) higher than if the FTA had not been implemented, and U.S. imports from Korea are estimated to be 21 percent ($10 billion) higher.[2] The increase in U.S. exports to Korea occurs at the expense of exports to other trading partners.

- At the sectoral level, the estimated effects on trade are relatively large for those sectors with high initial trade barriers. The largest gains from an FTA for U.S. exports to Korea are expected in agriculture (particularly meat products) and manufacturing. The largest gains for Korean exports to the United States are anticipated in textiles, apparel, and leather goods and other manufacturing.

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[1] Eight years following the FTA implementation, the corresponding numbers are 0.83 percent ($7.6 billion) and 0.98 percent ($12.8 billion), respectively.

[2] The CGE analytical results do not fully account for the removal of all nontariff barriers. Modifications to Korea's import clearance and customs procedures, and tax and regulatory regime, and greater enforcement of intellectual property rights would likely lead to greater increases in U.S. exports to Korea than the quantitative results suggest (see chapter 5).

- Results from a more detailed commodity-level partial equilibrium analysis suggest that the removal of double-digit tariffs on certain agricultural products would result in substantial percentage increases in the volume of U.S. exports to Korea in these products. U.S. exports of beef and cheese could possibly increase by 60 percent each, and U.S. exports of beer could increase by roughly 100 percent.[3]

- The FTA is expected to have small effects on the sectoral output of the United States. The greatest impact is anticipated in the textiles, apparel, and leather goods sector, where output is estimated to decline by 1.4 percent as a result of the FTA. Agricultural output, on the other hand, is estimated to increase by about 0.9 percent.

- The estimated effects of the FTA on GDP in the United States and Korea are very small. Four years following the implementation of the FTA, U.S. GDP is estimated to increase by 0.2 percent and Korean GDP by 0.7 percent as a result of the FTA.

- The removal of nontariff barriers, not explicitly accounted for in the above estimates, would likely increase U.S. exports to Korea. The removal or modification of tariff rate quotas, import clearance and customs procedures, and restrictions on media, would likely increase opportunities for U.S. exporters. The modification of Korea's tax system and regulatory regime could facilitate trade, and stricter enforcement of Korea's IPR laws would likely increase U.S. exports of IPR-sensitive products, including software, audio and video recordings, pharmaceuticals, and cosmetics products (tables ES-1 and ES-2).

Korean Economy

- Korea's economic development strategy, established in the 1960s, had three major aspects: (1) emphasis on industrialization, (2) strong participation of the state in economic decisions, and (3) focus on exports as the measure of progress. The result has been rapid industrialization, an enormous increase in exports, and rapid GDP growth. The Asian financial crisis brought Korea's only year of falling GDP in 1998 since the second oil shock at the end of the 1970s; within one year of the crisis, Korea's GDP growth had returned to an annual rate of 10.9 percent.

- Almost 53 percent of the Korean economy is in the services sector, while manufacturing and agriculture constitute 33 percent and 6 percent, respectively. The manufacturing and services sectors are strongly influenced by the presence of corporate conglomerates, or *chaebols*. The largest service sector is business and financial services, while major manufacturing sectors include electrical components; chemical products; motor vehicles and other transport equipment; computers and electrical machinery; and steel and basic metals.

[3] These estimates do not take into account existing nontariff barriers.

Table ES-1
Qualitative assessment of the effects on U.S. trade of removing certain Korean nontariff barriers as a result of a U.S.-Korea FTA

Korean nontariff barrier	Sectors affected	Effects
Agricultural tariff rate quotas Certain agricultural tariff rate quotas are administered by agricultural cooperatives in Korea. Others are administered by Korean government agencies.	Oranges, corn, soybeans, vegetables, and other fruits	Increased U.S. export opportunities. In certain products, the scope of benefits also depends on the future role of state trading organizations.
Import clearance and customs procedures Lengthy and unpredictable procedures of inspection, certification, and quarantine. Strict labeling requirements.	Food products, agricultural goods, pharmaceuticals	Increased U.S. export opportunities due to the decreased risk of spoilage in transit, lowered costs in testing, and time savings.
Restrictions on motion pictures and television programming The screen quota requires that Korean films be shown a minimum of 106-146 days in Korean theaters. There are also other restrictions on the maximum foreign content of television broadcasts.	Motion pictures and television programming	Increased U.S. export opportunities due to the removal of quotas on exhibition and broadcast of foreign media. The magnitude of potential opportunities depends on whether the current quotas are binding.

Source: USITC compilation.

Table ES-2
Qualitative assessment of the effects on U.S. trade of modifying certain Korean rules and regulations as a result of a U.S.-Korea FTA

Korean nontariff barrier	Sectors affected	Effects
Tax system Korea's tax system taxes autos based on engine size, with large-displacement engines facing a relatively heavier tax burden.	Automobiles	Increased U.S. export opportunities in luxury auto exports due to reduced cost of ownership.
Regulatory regime Vague and arbitrary rules and regulations regarding standards, testing, and certification; sanitary and phytosanitary rules; conformity assessment; labeling; and pricing and distribution.	Agricultural and food products, pharmaceuticals, medical equipment, cosmetics, automobiles, and professional and financial services	Increased U.S. export opportunities due to streamlined implementation and more transparent enforcement of rules and regulations.
Protection of intellectual property Lax enforcement of existing intellectual property laws and lack of confidentiality in the regulatory process.	Pharmaceuticals, cosmetics, "cosmeceuticals", software, audio and video recordings	Increased U.S. export opportunities due to reductions in counterfeiting and piracy and the introduction of more IPR-sensitive products to the Korean market.

Source: USITC compilation.

- Since the Asian financial crisis in 1997-98, Korea has implemented major economic market-based reforms backed by the International Monetary Fund (IMF). These reforms have been directed at restructuring the financial system, corporate governance, labor markets, and the public sector. These efforts have opened Korea's markets, reduced the role of government in investment allocation and economic decisions, and increased financial market efficiency.

- Following the Asian financial crisis, Korea's trade balance, which traditionally had been in deficit, turned into a substantial surplus. Exports in 2000 totaled $175.8 billion, while imports totaled $159.2 billion. Major trading partners include the European Union, the United States, China, and Japan. Korea's principal exports include electrical machinery, road vehicles, textiles and fabrics, and other transport equipment. Major imports include electrical machinery, petroleum-related products, organic chemicals, industrial machinery, and other transport equipment. Korea is completely dependent on imported oil, and its manufacturing sector uses significant quantities of imported intermediate inputs.

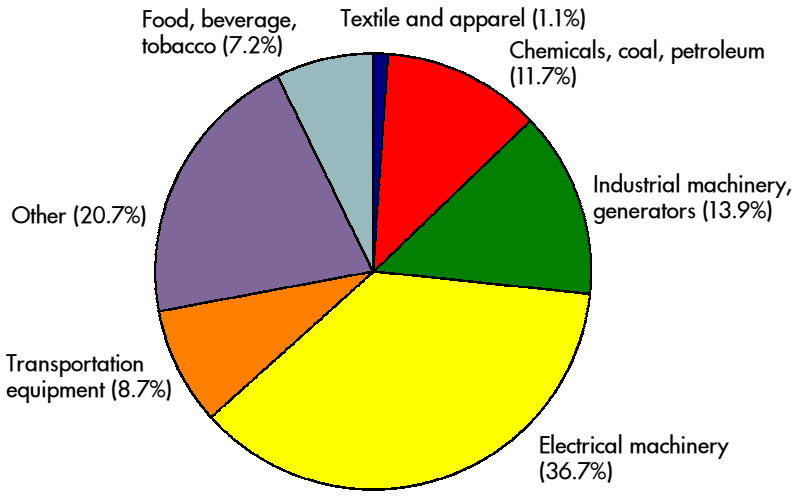
Bilateral Trade

- In 2000, U.S.-Korea bilateral trade totaled $69 billion. Korea was the United States' eighth largest export market and sixth largest import source, while the United States was Korea's largest export market and second largest import source. The United States ran a trade surplus with Korea in the mid-1990s, but the balance turned sharply negative during the aftermath of the Asian financial crisis.

- Major U.S. exports to Korea include electronics, machinery, chemicals, transportation equipment, and agricultural products (figure ES-1). Major U.S. imports from Korea are electronics, machinery, transportation equipment, and apparel (figure ES-2). Manufacturing accounted for 81 percent of total bilateral trade. Electronics alone accounted for one-third of U.S. exports to Korea.

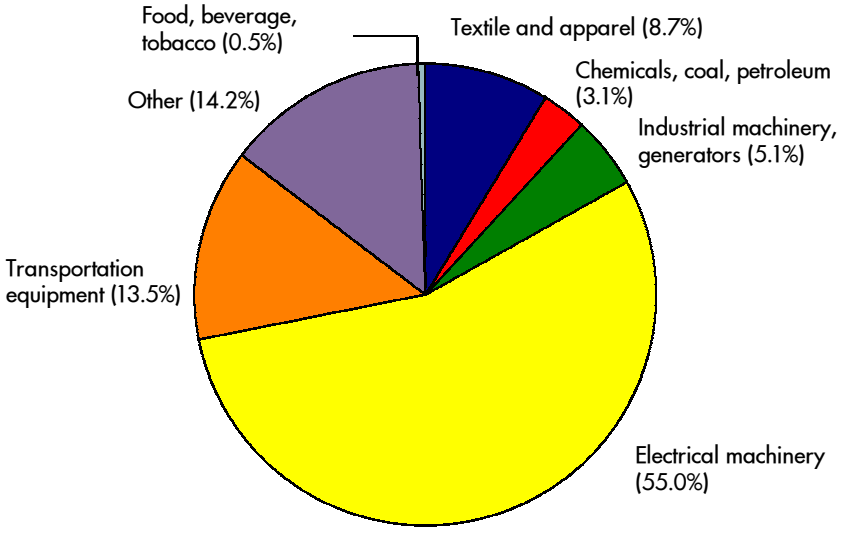
- Although U.S. trade relations with Korea improved in many sectors during 1995-2000, a number of disputes surfaced involving key industries. Disputes during this period centered largely on U.S. initiatives to improve market access in Korea as well as from the use of U.S. trade remedy laws against the importation of certain Korean products (primarily steel). Market opening initiatives were often precipitated by Section 301 investigations and involved goods such as automobiles and agricultural products. While many disputes were resolved in bilateral fora, certain complaints were ultimately settled by World Trade Organization (WTO) dispute settlement panels.

Figure ES-1
U.S. exports to Korea, by sector, 2000



Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure ES-2
U.S. imports from Korea, by sector, 2000



Source: Compiled from official statistics of the U.S. Department of Commerce.

Sectoral Industry and Trade

Agriculture

- Trade in the agricultural sector accounted for nearly 7 percent of total U.S.-Korean bilateral trade. Korea is the fourth largest market for U.S. agricultural products. In 2000, approximately 44 percent of Korea's agricultural imports were from the United States, consisting principally of cereals; fruits and vegetables; meat and edible offal; oil seeds and other seeds; tobacco; raw hides and skins; and wood pulp products. Korea supplied less than 1 percent of U.S. agricultural imports, primarily dairy products, and cereals.

Textiles, Apparel, and Leather Goods

- The U.S. trade deficit with Korea in textiles, apparel, and leather goods has widened since 1996, reaching $3.4 billion in 2000, with U.S. imports of $3.7 billion and U.S. exports of $0.3 billion. The increased U.S. import levels and reduced U.S. export levels largely reflected the effects of the 1997-98 financial crisis and the accompanying devaluation of the won. Prior to the crisis, Korea's share of the U.S. import market had been declining because of rising costs, labor shortages, and the relocation of Korean production to, and increased competition from, lower cost countries. Korea still ranks among the world's largest producers and exporters of textiles, however. U.S. production of textiles and apparel fell by 12 percent during 1995-2000, a period of strong U.S. economic growth. The value of U.S. imports of such goods rose by 62 percent and will likely continue to grow as U.S. quotas are phased out by 2005.

Other Manufacturing

- Electronics products are the most heavily traded goods in the U.S.-Korea trade relationship, accounting for more than one-half of U.S. imports from Korea and one-third of U.S. exports to Korea. Much of this trade is a result of production sharing and outsourcing. Transportation equipment is also an important trade category; the United States exports primarily aircraft and aircraft equipment to Korea, while Korea predominantly exports motor vehicles to the United States.

Services

- During 1995-99, total U.S. service sector exports to Korea registered a 6-percent decline, to $5.3 billion, primarily as a result of the Asian financial crisis. Exports of freight transportation, travel, and education services accounted for the largest shares of sector exports. During 1995-99, U.S. service imports from Korea increased by 24 percent to $4.5 billion. Within the

service sector, freight transportation services, passenger fares, and travel services accounted for the largest shares of U.S. imports. Since the crisis, Korea has eliminated many restrictions on foreign participation in its banking and securities industry. Restrictions on foreign investment in the telecommunication services industry have also been eased.

Barriers to U.S.-Korea Trade

- The simple average applied tariff in Korea in 2000 was approximately 8.9 percent[4] ad valorem compared with approximately 5.5 percent for the United States. However, Korea's low average tariff masks high rates imposed on many agricultural and fisheries products. Approximately 8 percent of Korea's tariff categories have no set maximum (bound) rates. These categories include forestry and fisheries products, buses, television receivers, and computers. Quotas on rice restrict U.S. export opportunities.

- U.S. industry has identified the Korean regulatory regime as the most significant trade barrier for nearly every product sector. U.S. firms allege that Korean regulations, such as product and safety standards, pharmaceutical testing requirements, and labeling, negatively affect foreign firms' ability to sell goods and services in Korea. A major concern of U.S. firms is the lack of transparency in the Korean regulatory process.

- Korea was placed on the Special 301 priority watch list in 2000 because of its failure to protect intellectual property rights. Industry reports that losses to U.S. companies as a result of copyright infringement in Korea totaled $325 million in 2000. Counterfeit merchandise is readily available in Korea and Korean exports of infringing products are a concern. One of the most common violations is unauthorized use of a protected trademark. Industry sources report that business confidential information has not been given sufficient protection by government officials and, in some cases, has been made available to Korean competitors.

- Most U.S. tariffs are low or have been eliminated, resulting in a trade-weighted average duty on total imports of 1.6 percent ad valorem in 2000. However, Korean companies have cited tariffs in several product categories, especially textiles and apparel, as impediments to Korean exports. Other products identified as having high tariffs are footwear, leather goods, ceramic and glass ware, rolling stock, trucks, television picture tubes, and jewelry.

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[4] The simple average tariff rate is generally higher than the trade weighted average tariff rate, which was 5.9 percent for Korea in 1999 (latest available) and 1.6 percent for the United States in 2000. See USITC, "Value of U.S. Imports for Consumption, Duties Collected, and Ratio of Duties to Values, 1891-2000," retrieved from *www.usitc.gov/ave.pdf* on July 10, 2001, and The World Bank *World Development Indicators 2001.*

- Korean industry representatives contend that U.S. trade laws, such as antidumping, countervailing duty, and safeguard statutes, act as a disincentive to many Korean firms that fear being subject to measures under those laws. Korean companies assert that the U.S. antidumping law is administered in an arbitrary manner and that it is used to restrict imports to the United States.

- Korean companies find the standards, testing, and certification system in the United States complex and nontransparent and claim that the lack of a centralized source of information makes it difficult and expensive for foreign firms to obtain the necessary certifications. In general, Korean firms believe U.S. standards and testing regulations are not based solely on safety issues and result in unnecessary modifications of products to meet the requirements for sale in the United States.

CHAPTER 1
Introduction

Background

Over the past 35 years, both the United States and the Republic of Korea (Korea) have pursued multilateral reduction of trade barriers under the auspices of the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO). The United States was a founding member of the GATT, and Korea joined in 1967. As GATT contracting parties, both became members of the WTO in 1995. In the years since the conclusion of the Uruguay Round negotiations, multilateral negotiations have slowed. In reaction, many countries have turned to negotiating bilateral trade agreements. The United States and Korea have begun to consider such bilateral agreements in order to advance trade liberalization. The United States signed a free trade agreement (FTA) with Jordan[1] and is exploring options with Chile and Singapore. The United States also signed a bilateral trade agreement with Vietnam that fulfills the first condition necessary to grant Vietnam Normal Trade Relations status. Korea has been exploring bilateral options with Chile and Japan. In light of these developments, the Senate Committee on Finance has requested that the Commission explore the probable economic effects of an FTA between the United States and Korea.[2]

Several criteria have been used to identify the sources of and evaluate the biggest potential gains from establishing an FTA. For each economy these are the existing trade relationship, the current barriers to trade, and the complementarity of the structure of trade in each economy. Total U.S.-Korea merchandise trade has grown sevenfold since 1980 (figure 1-1). Because the United States economy is substantially larger than that of Korea, U.S.-Korea trade has always been more important to Korea's economy than to the United States' economy. In 2000, total trade as a percent of GDP was 26 percent for United States and 73 percent for Korea. At the outset, the complementary structure of U.S.-Korea trade coupled with the fact that each country's barriers are generally in sectors where the other country is relatively competitive suggests that an FTA would increase bilateral trade. This report examines these issues and the probable economic effects of a U.S.-Korea FTA in detail.

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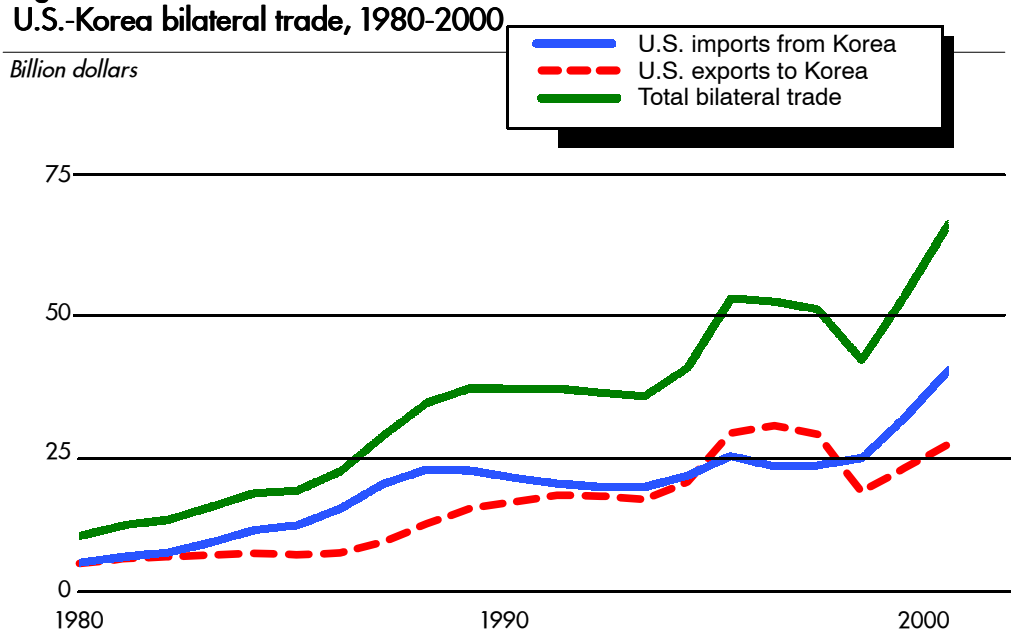
[1] At the time of this report, neither the U.S. Congress nor the Jordanian Parliament had ratified the proposed U.S.-Jordan free trade agreement, which was signed by the United States and Jordan on October 24, 2000.

[2] Letter from the U.S. Senate Committee on Finance to the U.S. International Trade Commission, dated December 14, 2000 (see appendix A).

Figure 1-1
U.S.-Korea bilateral trade, 1980-2000



Sources: Statistics Canada and U.S. Department of Commerce.

Purpose of the Report

In a letter dated December 14, 1999, the Senate Committee on Finance requested that the Commission conduct a study of the economic effects of an FTA between the United States and Republic of Korea. Specifically, the Committee requested that the Commission's report include the following:

- An overview of the Korean economy;
- An overview of the current economic relationship between the United States and the Republic of Korea, including a discussion of the important industry sectors in both countries;
- An inventory and analysis of the main barriers (tariff and nontariff) to trade between the United States and Republic of Korea;
- To the extent the data are available, the estimated effects of eliminating all quantifiable trade barriers (tariff and nontariff), with special attention to agricultural goods, on
  - the volume of trade in goods and services between the two countries,
  - sectoral output and gross domestic product for each country,
  - wages and employment across industry sectors for each country, and
  - final prices paid by the consumers in each country;
- A qualitative assessment of the economic effects of removing nonquantifiable trade barriers.

Approach of the Report

Information for this report was collected through a public hearing and through Commission staff interviews with U.S. and Korean government and industry officials in Washington, D.C., and foreign travel in Seoul, Korea. The results in this report are based on this information and partial and general equilibrium analyses.

Organization of the Report

The remainder of this chapter discusses the quantitative approach taken by the Commission to assess the economic effects of a U.S.-Korea free trade agreement. Chapter 2 presents an overview of the Korean economy, with a focus on trends in the country's industrial structure, natural resources, and economic policies. The 1997 Asian financial crisis, international trade and the changing role of foreign investment are all reviewed in relation to the Korean economy.

Chapter 3 provides an overview of the trade and investment aspects of the U.S.-Korean economic relationship. Given the request to pay special attention to agriculture, this chapter expands that discussion.

Chapter 4 reviews the principal tariff and nontariff barriers to U.S.-Korea trade. Government and industry sources from both countries were consulted in order to provide as broad a discussion as possible, especially with respect to nontariff barriers. Tariff peaks that each partner country would likely consider significant in the trading relationship are also highlighted.

Chapter 5 reports estimates of the likely economic effects of a U.S.-Korea FTA on a number of measures of economic activity with special attention to agriculture. The Committee requested static and dynamic analyses of the effect of bilateral trade liberalization. The analysis conducted by the Commission incorporates both approaches in a single analysis, employing a static framework with a dynamic element. The effects of the FTA are examined by means of a series of comparative static analyses with multiple sequential simulations extending out to 2009. In response to the request letter, partial equilibrium analysis is used to estimate the likely impact of bilateral trade liberalization on U.S. exports to Korea and Korean domestic production for a number of agricultural products at a detailed commodity level. Finally, a qualitative assessment is offered on the likely impact of removing nonquantifiable barriers to trade between the two countries.

Following the text of the report, there are four appendices: (A) request letter from the Senate Committee on Finance, (B) Federal Register notice, (C) list of submissions and public hearing participants, and (D) technical appendix.

Overview of the Quantitative Approach

A U.S.-Korea FTA would involve removing trade barriers between these countries in all industrial, agricultural, and service sectors. An analysis of such broad-based liberalization requires a model with comprehensive coverage of the sectors of the economy, as well as the linkages between those sectors. A number of factors will affect each economy as a result of the FTA. Each country's trading patterns with other countries, the current allocation of labor and capital across sectors, and the relative competitiveness of trading partners will determine the economic response to the liberalization. How the effects of the FTA are distributed across countries will depend on the size of existing bilateral trade flows, the corresponding tariff levels, and the restrictiveness of the nontariff barriers. Therefore, not only are the United States and Korea explicitly modeled, but also the other countries of the world. Modeling all trading countries allows us to assess the impact of the FTA more appropriately, by taking into account how world markets will respond to the liberalization.

Accordingly, this study employs the Global Trade Analysis Project (GTAP) model, a multi-country and multisector CGE model with economywide coverage of merchandise and service sectors.[3] The GTAP model has been applied extensively in research analyzing changes in trade policy.[4] As with other global CGE models, the GTAP model is structured to estimate the impact of various types of trade policy changes. The model provides extensive detail on various commodity and factor prices across sectors and regions. It follows standard assumptions common to other CGE models regarding perfect competition, constant returns to scale, intersectoral mobility of capital and labor, and national product differentiation in traded goods. Additional information on the specification of the GTAP model can be found in chapter 5 and appendix D.

The basic GTAP model is a single-period comparative static model based on a snapshot of the economy as represented by the GTAP database.[5] The model can also be used as a multiperiod model where a baseline over time is developed by projecting labor, capital, and productivity in the model to a later year and then performing a comparative static analysis of policy changes at given intervals. The Commission evaluated the effects of the FTA on the U.S. and Korean economies over time using a 12-year horizon and the effects are analyzed at 2005 and 2009 during this course.[6]

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[3] For the purpose of this analysis, the world economy is divided into five regions: the United States, Korea, rest of East Asia (including China and Japan), European Union, and rest of the world. Production and trade flows for each model region are presented for 10 sectors: rice, meat products, fruits and vegetables, dairy products, rest of agriculture, mineral and metal products, natural extractive resources, textiles and apparel, other manufacturing, and services. See chapter 5 and appendix D for more detail.

[4] For other recent applications of this model, see ITC, *The Impact on the U.S. Economy of Including the United Kingdom in a Free Trade Arrangement with the United States, Canada, and Mexico*, Inv. No. 332-409, USITC publication 3339, August 2000.

[5] The standard GTAP database (Version 4) is based on 1995 measures.

[6] The Commission conducted similar analyses in *The Impact on the U.S. Economy of Including the United Kingdom in a Free Trade Arrangement with the United States, Canada, and Mexico*, USITC Publication 3339, August 2000.

For each period, growth in the labor force, population, capital and GDP are included. The points are four years apart, about the regular length of the business cycle. The first point in time, 2005, allows for full adjustment to the FTA tariff liberalization to take place. The second point, 2009, takes into account the remainder of the WTO tariff liberalization.

The static analysis involves a comparison between two economic states: before the policy change occurs, and after the policy is fully implemented. The analysis compares the projected baseline, which extends out to 2009, and the projected baseline with the policy change. The modeling exercise examines how the U.S. and Korean economies might look in a given period without the FTA in effect, compared with the projected states of the economies with the FTA in effect over the same period. The purpose of using a formal model is to simulate this alternative state in a consistent manner by allowing markets to adjust to the new policy environment (see chapter 5 and appendix D).

The nature of CGE modeling limits the level of disaggregation of the sectoral analysis. Therefore, to obtain detailed insight into the effects of an FTA at the detailed level, partial equilibrium modeling is employed for selected agricultural products, including beef, beer, cheese, wheat flour, and industrial corn.

CHAPTER 2
Overview of the Korean Economy

Introduction

During the Japanese occupation of Korea (1910-1945), the economy on the Korean peninsula exhibited a strong regional pattern: mining and industry were heavily concentrated in the North, while agriculture was concentrated in the South. At the end of World War II, the Korean peninsula was partitioned into separate zones of U.S. and Soviet occupation. The withdrawal of the Japanese from Korea meant the loss of much technical expertise and infrastructure, but post-war Korea managed to maintain some production in all sectors of its economy.[1] With no agreement on a method of reunification, in 1948 the Republic of Korea was founded in the U.S. zone in the South, and the Democratic People's Republic of Korea was formed under the Soviet sphere in the North. Between 1950 and 1953, U.S. and other United Nations forces intervened in the conflict between North and South, and an armistice was signed in 1953. Since that time, Korea has experienced rapid growth, with per capita income rising to 13 times the level of North Korea.[2] This growth has been characterized by industrialization and export promotion, and little use of foreign direct investment.[3] The Korean economy suffered from the 1997 Asian financial crisis, but has implemented a series of reforms that have contributed to a rapid recovery.

This chapter provides an overview of the Korean economy, including Korea's resource endowment, economic structure, economic policy and performance, and trade and investment with the world. Figure 2-1 provides data on several Korean economic indicators such as, trade, GDP, and production by sector.

Resources and Infrastructure

Korea is one of the most densely populated countries in the world. Korea's land mass of 98,190 km^2 is roughly the size of the State of Indiana, while its estimated population of 47.3 million people is over eight times that of Indiana.[4] The population is ethnically

[1] Noland, *Avoiding the Apocalypse: The Future of the Two Koreas*, Institute for International Economics, Washington D.C., 2000, p. 2.

[2] Central Intelligence Agency, *The World Factbook 2001*, found at Internet address *www.cia.gov*, retrieved May 30, 2001.

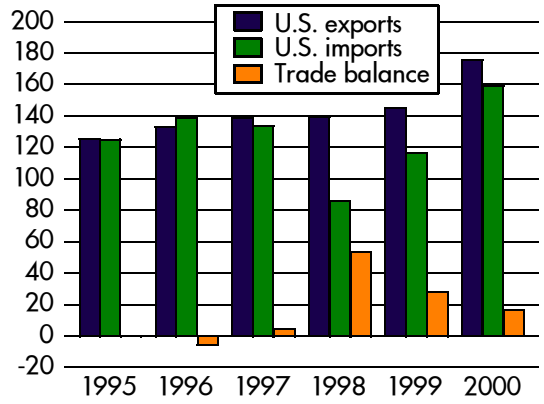
[3] As discussed later in this chapter, Korea has recently opened its economy to foreign direct investment, starting in 1996.

[4] *Economist Intelligence Unit*, "Country Report: South Korea, North Korea," generated from CD ROM database, Northeast Asia, 1993-2000, and *Statistical Abstract of the United States*, U.S. Census Bureau, 2000.

Figure 2-1
Korean economic indicators

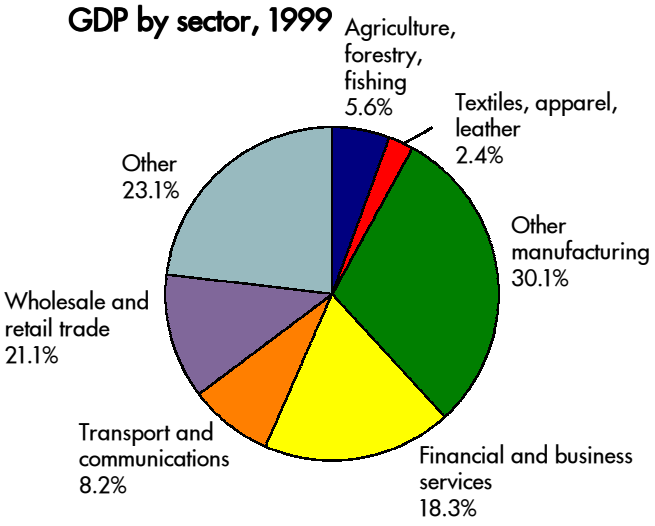
Korean trade with the world, 1996-2000

Billions of U.S. dollars



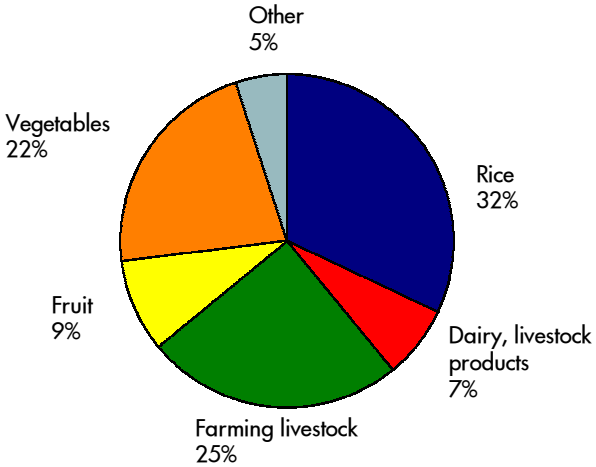
Sources: Statistics Canada and Economic Intelligence Unit.

GDP by sector, 1999



Source: Korean National Statistical Bureau.

Korean agricultural production, 1999



Source: Korean Agricultural Information and Statistics Bureau.

Economic statistics and indicators of the Korean economy

Economic Indicators	1996	1997	1998	1999	2000
GDP at mkt prices (Won, trn)	418.5	453.3	444.4	482.7	517.1
GDP (US$ bln)	520.2	476.5	317.1	406.1	457.2
Real GDP growth	6.8%	5.0%	-6.7%	10.9%	8.8%
CPI inflation (annual average)	4.9%	4.4%	7.5%	0.8%	2.3%
Population (mln persons)	45.6	46.0	46.4	46.9	47.3
Exports of goods (US$ bln)	133.1	138.7	139.9	145.2	175.8
Imports of goods (US$ bln)	138.7	133.9	86.1	116.8	159.2
Trade balance (US$ bln)	-5.6	4.8	53.8	28.4	16.6
Total external debt (US$ bln)	120.3	145.6	141.3	135.5	138.4
Debt service ratio, paid	9.0%	9.0%	13.4%	24.9%	8.5%
Exchange rate (Won/US$)	804.5	951.3	1401.4	1188.8	1131.0
FDI (US$ bln)	2.3	3.1	5.2	10.6	[1]8.7

[1] Through November 2000.

Sources: *Economist Intelligence Unit*, Statistics Canada, and U.S. State Department.

Key trade commodities, US$ billion, 1998

Exports		Imports	
Electrical machinery	25.0	Electrical machinery	14.5
Road vehicles	12.0	Petroleum-related	13.9
Textiles, yarn, fabric	11.6	Organic chemicals	3.1
Other transport equipment	9.2	Industrial machinery	2.9
Petroleum-related	9.0	Other transport equipment	2.7

Source: Compiled from Statistics Canada data.

Key trade partners, US$ billion, 1998

Exports		Imports	
United States	23.9	United States	17.7
Europe	26.5	Europe	10.9
Japan	13.2	Japan	16.2
China	14.1	China	6.4
Hong Kong	9.7	Hong Kong	1.8
Taiwan	5.3	Taiwan	1.7
Australia	2.9	Saudi Arabia	4.4

[1] Includes all countries of Europe, both EU and non-EU.

Source: Compiled from Statistics Canada data.

homogeneous and very urbanized. More than one half of the total population lives in urban centers of 1 million or more people, and almost one quarter of Koreans live in the capital city, Seoul. Education is a priority–17.4 percent of total government spending in 1995-99 was on education, a level higher than in either the United States or Japan. The literacy rate in Korea is approximately 98 percent.[5]

Except for some coal and mineral deposits in North Korea, the Korean peninsula has few natural resources.[6] Korea once produced commercial tungsten, but extraction ended in 1993. There are also small amounts of lead, zinc, and copper, but these supply only a fraction of domestic needs. The Korean government enacted conservation policies after the second world oil shock in 1979, but with no domestic supply, the Korean economy remains totally dependent on imported petroleum.[7] Only 21 percent of the total land area is arable, and this supply has gradually been reduced by urbanization and the construction of roads.

Korea has an extensive highway system that includes several North-South and East-West routes. However, worsening traffic congestion increasingly strains the network;[8] in response, Korea has launched a multibillion dollar expansion of the nation's transportation network. This program includes national highways, the subway system in Seoul, and a train and bus system. Korea also is expanding its airports, with the newly constructed Inchon International Airport replacing Seoul's Kimpo International Airport as the country's main international hub.[9]

Korea has an advanced information and communications infrastructure. Private industry is rapidly expanding the system to meet market needs, while the government's policy goal is to become one of the world's leading information and knowledge-based economies. Currently, the government is promoting and providing significant monetary support for an infrastructure development program that it calls "Cyber Korea 21."

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[5] *Economist Intelligence Unit*, "Country Report: South Korea, North Korea."

[6] Noland, *Avoiding the Apocalypse: The Future of the Two Koreas*, p. 1.

[7] *Economist Intelligence Unit*, "Country Report: South Korea, North Korea."

[8] For many years, the Korean Government's policy limited the use of private automobiles through taxation and incentive programs. Hoping to support an export-oriented motor industry, the government abandoned this policy in the 1980s. See *Economist Intelligence Unit*, "Country Report: South Korea, North Korea."

[9] U.S. Department of State, "FY 2001 Country Commercial Guide: Korea," p. 14, found at *www.state.gov*, retrieved May 17, 2001.

Figure 2-2
Chaebols

While often identified as contributors to the economic crisis of 1997, Korea's large commercial conglomerates, or *chaebols,* are also generally credited with leading Korea's export drive and acting as the central engine of Korean economic growth. The *chaebol* can be generally defined as a grouping of corporate affiliates clustered around a single controlling company. In most cases, *chaebols* were founded and continue to be controlled by a single family.[1] They are typically diversified in their operations and engaged in a variety of industrial sectors (see table 2-1). The significance of *chaebols* in the Korean economy is evident: in 1995, the top four *chaebols* reportedly accounted for 9 percent of total Korean GDP.[2]

Chaebols first arose in Korea in the 1920s and 1930s under Japanese colonial rule. At that time, Japan planned Korea's economy to support its own and organized a series of privately owned but government-controlled companies based on the Japanese *zaibatsu*. Following its independence, Korea continued to foster and develop this system while generally modeling its economy after that of Japan.[3] Essentially, the Korean government targeted specific industries believed to be conducive to growth and provided assistance to certain companies involved in those industries as well as others seeking market entry.[4] Although many of the *chaebols* existed prior to the Korean War, the period of significant growth and diversification for the *chaebols* began during the 1960s.

The Korean conglomerates are also notable for the use of cross-ownership and cross-payment guarantees, as well as reliance on preferential access to capital. Cross-ownership refers to a *chaebol's* members maintaining ownership in one another through a series of mutual equity stakes. Cross-payment guarantees allow for the endorsement of payment of corporate debt among the *chaebol's* affiliates. Effectively, the affiliates collectively guarantee the payment of debt incurred by individual members.[5] These practices tended to consolidate ownership and control of the group companies as well as leave strong group members vulnerable to the performance of their weaker affiliates. The Korean government has largely controlled the banking sector in Korea and has assisted the *chaebols* by directing to them a large share of the domestically available capital.[6] The *chaebols* have used this preferential access to capital to finance the expansion of their existing businesses as well as to develop new ones. At the end of 1997, the top five *chaebols* reportedly accounted for roughly one-third of the country's outstanding corporate debt.[7]

In the wake of the 1997 financial crisis and ensuing recession, the government of Korea undertook a number of economic reforms, including many that affected the *chaebol* system. Among these measures were the elimination of cross-payment guarantees between *chaebol* subsidiaries, changes in the tax law that previously had encouraged excessive corporate borrowing, and increased rights for minority shareholders.[8] The government also encouraged the largest *chaebols* to significantly reduce their debt burdens, often accomplished through selling off certain operations or in debt for equity swaps. The government prompted the *chaebols* to narrow the breadth of their business activities, and as part of this effort, facilitated several deals in which *chaebols* sold operations to one another, thereby reducing the number of *chaebols* operating in specific business areas.[9] Although the Korean government has acknowledged that additional progress is necessary in corporate reform, existing reforms have already placed in question the future structure and importance of the *chaebol* system in the Korea economy.

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[1] Peter M. Beck, "Are Korea's Chaebol Serious About Restructuring?" Korea Economic Institute of America, found at *www.keia.org*, retrieved Jan. 16, 2001.

[2] National University of Singapore, Business School, "The Chaebol Economy," found at *www.fba.nus.edu.sg*, retrieved Jan. 12, 2001.

[3] Ibid.

[4] Richard Steers, "The Chaebol, Korea's New Industrial Might," (Ballinger Publishing Co., 1989), p. 19.

[5] Chung-in Moon and Jongryn Mo, *Economic Crisis and Structural Reforms in South Korea: Assessments and Implications* (Washington, D.C.: Economic Strategy Institute, 2000), p. 29.

[6] Steers, "The Chaebol, Korea's New Industrial Might."

[7] Carl-Johan Lindgren, *Financial Sector Crisis and Restructuring: Lessons From Asia* (Washington, D.C.: International Monetary Fund, 1999), p. 69.

[8] Korean Government officials, interview by USITC staff, Seoul, Korea, April 25, 2001.

[9] Organization for Economic Cooperation Development, "OECD Economic Surveys 1999-Korea" (OECD: Paris, France, 1999).

Almost 53 percent of the Korean economy is in the services sector,[10] roughly 6 percent is in agriculture, and 33 percent is in manufacturing. As these sectors have been greatly influenced by the prominent role of corporate conglomerates (Figure 2-1) in Korea, it is useful to consider the overall role of *chaebols* in the development of both manufacturing and services in the Korean economy (Table 2-1). This section also describes major sectors of the Korean economy, such as manufacturing, services, and agriculture, with a focus on Korea's growing information technology sector.

Table 2-1
Selected data for four of the largest Korean *chaebols*

Chaebol	Year established	Business areas
Hyundai[1]	1946	**Manufacturing**: automobiles, chemicals, electronics, industrial machinery, marine engines, military equipment, power generation and distribution equipment, shipbuilding, shipping containers, steel **Services**: construction, environmental, financial, shipping
Samsung[2]	1938	**Manufacturing**: aircraft engines, chemicals, electronics, industrial machinery, military equipment, plastics, shipbuilding, textiles **Services**: advertising, construction, distribution, engineering, financial, health care, hotel/resort management, shipping
LG	1947	**Manufacturing**: chemicals, communications cable, cosmetics, electronics, military equipment, oil refining, pharmaceuticals **Services**: advertising, construction, electricity generation, engineering, financial, information technology consulting, retail, telecommunications
SK	1953	**Manufacturing**: chemicals, natural gas production, pharmaceuticals, plastics, textiles **Services**: construction, financial, information technology consulting, natural gas and petroleum distribution, shipping, telecommunications

[1] Hyundai Motors has separated from the Hyundai group *chaebol*. Hyundai Electronics recently changed its name to Hynix and is currently separating from the Hyundai group.

[2] Renault purchased a majority stake in Samsung Motors. However, the Samsung group continues to hold a substantial minority position in Samsung Motors.

Source: Compiled from the Internet websites of the above-mentioned companies.

Manufacturing

The growth of *chaebol*s in the 1970s and 1980s coincided with a growing dependence on the manufacturing sector in Korea. In 1999, the manufacturing sector in Korea accounted for 32.5 percent of GDP.[11] While many other countries adopted various import substitution programs to industrialization, Korea, Taiwan, Singapore, and Hong Kong emphasized the expansion of labor-intensive manufactures for export to western Europe and North America. Korea's development plan included the

[10] Services are defined as wholesale and retail trade; transportation and communication; financial and business services; construction; and electricity, gas, and water.

[11] Korea National Statistical Office, *Korea Statistical Yearbook 2000*, p. 563.

expansion of production of fabrics made from manmade fibers, and later, labor-intensive assembly operations for consumer goods–including radios, black and white (later color) televisions, electronic calculators, refrigerators, video cassette recorders, and microwave ovens.

Two characteristics of Korean manufacturing include a dependence on imported inputs and a shift towards knowledge-based industrial development. The manufacturing sector has become heavily dependent on imported energy and imported capital goods. A result of this dependence is that Korean manufacturing of both domestic and export goods is significantly affected by changes in international prices of intermediate inputs and capital goods. A shift towards knowledge-based industrial development in Korea has meant a greater emphasis on goods such as consumer electronics and communications equipment, automotive products, chemicals, and machinery and equipment. Major manufacturing sectors in Korea today include electrical components; chemical products; motor vehicles; basic metals; machinery and equipment; and coke, refined petroleum, and nuclear fuel. Korean manufacturing output by sector is presented in table 2-2.

Table 2-2
Korean manufacturing output, by sector, 1999

Sector	Value *(million dollars)*[1]
Electrical components	52,804.7
Chemical products	38,928.8
Motor vehicles	38,500.3
Basic metals	33,033.6
Food and beverages	30,470.2
Machinery and equipment	27,654.1
Coke, refined petroleum, nuclear fuel	25,684.5
Textiles	20,975.4
Rubber, plastics	16,314.8
Electrical machinery	15,888.7
Computers and office machinery	15,758.8
Fabricated metal products	15,282.7
Other transport equipment	15,172.8
Non-metallic mineral products	13,092.8
Paper, pulp products	9,881.4
Publishing, printing	7,038.7
Wearing apparel	6,594.1
Furniture	6,199.2
Leather products	4,523.6
Precision instruments	3,731.8
Tobacco products	2,787.6
Wood products	2,598.5
Recycling	627.0
Total Manufacturing	403,543.8

[1] Dollar values were calculated using the 1999 average won/dollar exchange rate of 1188.1.

Source: Korean National Statistics Office.

While *chaebols* and state general trading companies continue to dominate manufacturing, market access in this sector is improving. Korea has reduced or eliminated import prohibitions on many industrial products from Japan, many of which are used as intermediate inputs for Korean production and exports. It has also reduced trade barriers in the markets for cars, car parts, and consumer electronics.[12]

Two major achievements in Korea's development of heavy industry have been the establishment of steel and automotive industries. Korea ignored the advice of The World Bank and other institutions when, in the 1970s, it founded Pohang Iron and Steel (POSCO). Japan contributed funds to the construction of the first steel plant, reflecting its concerns for regional security and economic stability in Korea. Japan's Nippon Steel also provided technical assistance.[13] Today, POSCO is one of the world's largest and most efficient steel companies, and Korea's steel output now compares to that of Japan, China, and the United States.

Export orientation and government intervention influenced the development of the automotive industry in Korea. To foster growth and development in the industry, the government imposed many restrictions on car manufacturers to limit competition. For most of the 1980s, the only car producer in Korea was Hyundai. Kia Motors and Daewoo came into the industry at the end of the decade. Road vehicles are now Korea's second largest export commodity, and the domestic market in Korea continues to expand. Domestic production of motor vehicles exceeded $38.5 billion in 1999, including 2.2 million passenger cars, 256,000 trucks, and 427,000 buses.[14]

Another feature of manufacturing development in Korea is the increase in wages. As labor costs in Korea continue to rise, certain labor-intensive industries are shifting production to lower-wage neighbor countries, including Indonesia, Philippines, Malaysia, Thailand, Vietnam, and China.[15]

Services

In recent years, manufacturing's share of Korean GDP has leveled off, while that of services has significantly increased, currently accounting for almost 53 percent of Korean GDP. The largest service industries are business services and finance, both of which have gone through changes in the last five years.

In 2000, financial and business services accounted for 19.1 percent of GDP.[16] The financial sector in Korea is characterized by tight government control and weak commercial bank independence, though there have been significant reform initiatives since the Asian financial crisis. Prior to the crisis, the financial system in Korea had long

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[12] World Trade Organization, "Korea Trade Policy Review Summary," Sept. 18, 2000, found at *www.mac.doc.gov/TCC/DATA/index_reports.html*, retrieved Jan. 11, 2001.

[13] *Economics Intelligence Unit,* "Country Profile: South Korea, North Korea."

[14] Ibid.

[15] Ibid.

[16] *Economist Intelligence Unit,* "Country Report: South Korea, North Korea."

been an instrument of industrial policy, with government rules and incentives designed to direct credit to sectors it deemed important. This role is now being diminished in response to the crisis.[17]

From the founding of the republic to the period of the Asian crisis, Korea strictly regulated and controlled its financial markets, focusing on a system of indirect finance for companies, channeled through a state-dominated banking system that was isolated from world financial markets by the use of capital controls. An internal debate in Korea centered on whether or not to liberalize this sector. On the one side, liberalization was said to offer relief for domestic firms, who saw themselves as disadvantaged internationally by artificially high domestic interest rates. Liberalization also offered firms more financing options, outside of the state banking system. In contrast, those against liberalization cited the potentially destabilizing macroeconomic effects it might bring. Another factor might have been self-interest, because liberalization would erode the privileged position of those within the Korean financial system. In the end, a compromise was reached which introduced gradual and uneven liberalization of financial services. This trend of slow liberalization continued from the late 1980s to the 1997 crisis.[18]

At the end of 1997, several different types of financial institutions operated in Korea, including 26 domestic commercial banks and trust account businesses that accounted for 51 percent of total financial system assets; and 52 foreign commercial banks, whose market share was about 3 percent of the system's assets, with activity mostly limited to wholesale banking.[19] In addition, four specialized banks and two development banks were in operation. The specialized and development banks accounted for 16 percent of financial assets and directed funds into financial support for certain underdeveloped industrial and agricultural sectors chosen by the government. A variety of other financial institutions were operating, and many became important sources of financing for the *chaebols*.[20]

The International Monetary Fund (IMF) identified several key weaknesses of the Korean financial system, all of which contributed to the impact of the Asian financial crisis in Korea:[21]

- Structural weakness in the financial and corporate sectors,[22]
- Government intervention in financial and business decision-making,[23]

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[17] Ibid.

[18] Noland, *Avoiding the Apocalypse: The Future of the Two Koreas*, pp. 51-52.

[19] International Monetary Fund, *IMF Staff Country Report, Republic of Korea: Economic and Policy Developments*, Feb. 2000, pp. 67-68.

[20] Ibid.

[21] Ibid.

[22] The government used its controls of the financial sector to direct funds into preferred sectors. Such measures protected corporations from competition and distorted the price and allocation of credit. The government limited interest rates charged to selected *chaebols*, and directly participated in bank management. Such an environment resulted in banks that were not properly skilled in assessing risk or allocating credit to productive investment.

[23] This intervention interfered with the role of banks as financial intermediary that can connect savers to borrowers with productive investment projects. Central management dominated lending decisions, with loans backed up by collateral or intercompany arrangements, and not by projected returns on the investments.

- Lax prudential regulations,
- Fragmented financial sector supervision,
- Competition from non-bank sector (financing *chaebols*) diminished profitability of commercial banks, and
- A rise in lending to risky borrowers.

In response to the Asian financial crisis, Korea implemented significant reforms to its financial system.[24] In cooperation with the IMF, Korea established a financial restructuring program with several main goals.[25] The first goal was to quickly restore stability to the financial system through liquidity support, deposit guarantees, and the closure of unviable institutions. Second, the plan aimed to restructure the financial system with government intervention in bank management, the purchase of nonperforming loans, and recapitalization of surviving banks. Finally, the IMF-backed plan sought to strengthen the institutional framework by improving bank supervision and prudential regulations.

The IMF deemed Korea's initial reform efforts successful. IMF First Deputy Managing Director Stanley Fischer said IMF directors "commend the Korean authorities on the impressive recovery from the financial crisis and the deep recession that ensued."[26] Fischer cited the significant reforms in the financial services sector, and proposed further reforms, including changes to deposit insurance, further government divestment of commercial banks, and an improvement of financial institutions' balance sheets. Recent statements from the IMF echo the need to restructure the banking sector, namely a greater distinction between the government's role as supervisor and owner.[27]

Korea has significantly opened the services sector to foreign participation and investment since 1996 and the WTO has characterized the effort as "remarkable."[28] This is especially the case in the financial sector. *Chaebols* remain an important part of the service sector, and the government's role increased temporarily during the aftermath of the financial crisis.

Agriculture

As the population continues to move to urban areas, and the manufacturing and services sectors continue to grow, the agriculture sector has gone from 45 percent of Korea's GDP in 1964 to just 5.4 percent in 1999.[29] Korea imports about 70 percent of

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[24] Korea's post-crisis reform program as a whole will be discussed in a later section of this chapter.

[25] IMF, *IMF Staff Country Report, Republic of Korea*, pp. 68-69.

[26] IMF, "IMF Completes Final Review of Korea Program," News Brief No. 00/72, Aug. 23, 2000.

[27] Don Kirk, "Seoul Defends Itself Against IMF Criticism," *The New York Times,* July 11, 2001, and The World Bank, "IMF May Modify Loan Terms in Asia," Press Review, July 12, 2001.

[28] WTO, "Korea Trade Policy Review Summary," Sept. 18, 2000.

[29] *Economist Intelligence Unit*, "Country Report: South Korea, North Korea. Forestry and fishing accounted for 0.2 percent of GDP.

its agricultural needs and that percentage is expected to increase over time.[30] In 1998, Korea's 1.4 million farming households produced $26.6 billion in output with rice accounting for nearly one-third of this production.[31] Table 2-3 presents the major output of Korean agriculture.

Table 2-3
Korean agricultural production, by sector, 1999

Sector	Value *(million dollars)*[1]
Rice	8,450
Farming livestock	6,677
Vegetables	5,735
Fruit	2,506
Dairy, livestock products	1,850
Other	1,396
Total	26,613

[1] Dollar values were computed using the 1999 average exchange rate of 1188.8 won per dollar.

Source: Korean Agricultural Information and Statistics Bureau.

Small land holdings and significant trade protection are two important features of Korean agriculture. Shortly after World War II, Korea implemented strict limits on the amount of land any one farm household might own. The result is that farming in Korea is dominated by small landholders and independent cooperatives.

Although Korea is a major agricultural importer, most agricultural products remain protected by both tariff and nontariff barriers. The rice industry remains highly protected. Korea limits the importation of rice and strives for self-sufficiency. In this effort, the government pays Korean farmers for rice at a price well above world prices. It also offers subsidies to rice consumers.[32] Chapters 4 and 5 provide more detail and analysis on this issue.

Information Technology and Telecommunications Services

Information technology (IT) production and the sale of telecommunications services accounted for 10.7 percent of Korea's GDP in 1999 and 38.3 percent of overall GDP growth. Together, IT and telecommunications services are Korea's fastest growing sector. Average annual growth has exceeded 20 percent since 1995 which is more than three times Korea's overall GDP growth rate in the same period.[33] Until 1992, Korea Telecom (KT), the national telecom authority, retained monopoly control over

[30] Commission fieldwork, U.S. Foreign Agricultural Service, Seoul, South Korea, May 2001.
[31] Korea National Statistical Office, *Korea Statistical Yearbook 2000*, p. 563.
[32] *Economist Intelligence Unit*, "Country Report: South Korea, North Korea.
[33] Choi Gae-iyong. "The Information Technology Sector in Korea," *Korea's Economy 2001*, Korea Economic Institute and Korea Institute of International Economic Policy, Vol. 17, 2001, pp. 49-50.

local, long-distance, and international telephone call services. Since that time, the Korean government has continued to open the market for new telecommunications services. From 1998-99, the government issued more than 30 licenses for emerging telecommunications services, including Internet telephony and other new technologies.[34]

Korea is emerging as one of the world's most "wired" countries: in 2000 Korea became the world's third largest Internet user after the United States and the United Kingdom.[35] About 80 percent of retail stock transactions in Korea are completed over the Internet. Moreover, Korea has approximately 14 million Internet users and one of the world's highest per capita usage rates for wireless telephones.[36]

Economic Policy and Performance

Korean Economic Development

One factor in the success of Korea's development program was a shift from a closed economic approach and use of import substitution to a more open, export-oriented development program. A major component of the government's economic policy after the Korean War was "the three lows;" low grain prices, low (overvalued) exchange rates, and low interest rates. The result was misallocation of capital and a recurring balance of payments crisis. There were large barriers to trade, including a system of multiple exchange rates, and an export-import linkage. According to one economist in Korea, the most prominent feature of the Korean economy at that time was its dependence on U.S. economic aid.[37]

The shift came in 1963, when the First Five Year Plan made a significant economic policy change that would help shape Korean development for decades. Three major aspects of this policy were: 1) emphasis on industrialization, 2) strong participation of the state in economic decisions, and 3) focus on exports as the measure of progress. The Second Five Year Plan continued the trend, and expanded the policy of export promotion, giving preferences to a select number of infant industries. With security concerns about North Korea, preferred sectors included heavy and chemical industries and more engineering-intensive products.[38]

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[34] U.S. Department of State. "FY 2001 Country Commercial Guide: Korea," p. 14, found at *www.state.gov,* retrieved May 17, 2001.

[35] Phyllis G. Yoshida, "Asian economies striving to enhance innovation capabilities," *Research Technology Management*, Washington, Jan/Feb 2001, Vol. 44, No. 1, pp. 2-6.

[36] Ibid, p. 7.

[37] Noland, *Avoiding the Apocalypse: The Future of the Two Koreas.*

[38] Ibid.

The role of the government in the economy increased in the 1970s. The government pushed resources into large capital-intensive projects. It reversed a trend towards financial liberalization, lowered interest rates, and took more direct control of the banking system. Large public financial institutions were formed, and private commercial banks were told to make loans to selected strategic projects. Priority industries (such as steel and chemicals) benefitted from the government's channeling of capital, as well as through preferential tax treatment and enhanced trade protection.[39]

In the 1980s, a movement came about to reverse the emphasis on heavy and chemical industries. Reform-minded General Chun Doo-hwan became the leader following the assassination of General Park Chung-hee in late 1979. The policy shift was seen in the Fifth Five Year Plan (1982-1986), which formalized the reduction of government intervention in the economy. The reform movement included reduction of trade protection, liberalization of the financial sector, denationalization of commercial banks, deregulation of interest rates, and a reduction in the number of state-directed loans given to preferred industries. With the exception of the oil shock in 1980, the economy grew consistently throughout the 1970s and 1980s.

Over the last three decades, the Korean economy has experienced rapid industrialization, a significant increase in international trade, and rapid growth in GDP. The extensive role of the government in the economy is cited both as a reason for the success, and later, a reason for Korea's financial crisis. Other factors cited in Korea's rapid development include several external shocks. These shocks, occuring in the mid-1980s, significantly benefitted Korea's export promotion plan, and therefore economic growth: 1) the appreciation of the Japanese Yen, 2) the drop in world oil prices, and 3) the fall in world interest rates.[40] In 1986, GDP growth in Korea measured 11 percent annually. The 1998 Asian crisis triggered Korea's only year of falling GDP since the second oil shock at the end of the 1970s (figure 2-2).[41]

The average annual rate of real GDP growth in 1993-97, the pre-crisis period, was 6.9 percent.[42] Exports of goods and nonfactor services were important factors in GDP growth, increasing by an average of 16.8 percent in the same period. Three factors cited for the strong performance of Korean exports include:[43]

- Geographical diversification, especially trade with the former Soviet Union and China, but also with developing countries of Asia and Latin America,
- Higher competitiveness with Japan in third country markets primarily due to the appreciation of the yen, though this trend has since reversed, and

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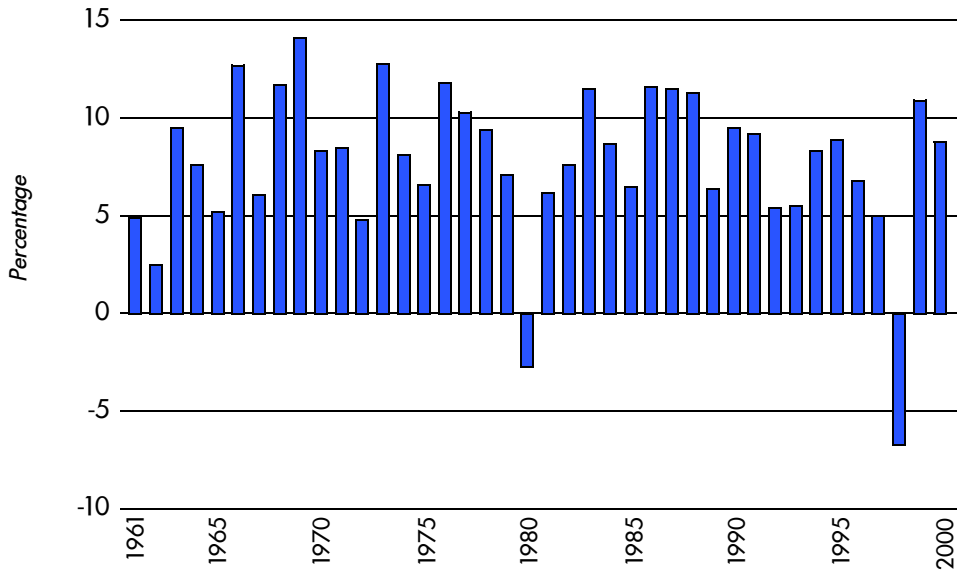
[39] Ibid.
[40] *Economist Intelligence Unit*, "Country Profile: South Korea, North Korea."
[41] Bank of Korea, found at *www.bok.or.kr*, retrieved May 28, 2001.
[42] Ibid.
[43] *Economist Intelligence Unit*, Country Profile: South Korea, North Korea.

Figure 2-3
Annual GDP growth rate in Korea, 1961-2000



Sources: The World Bank and the Economist Intelligence Unit.

- Diversification in product lines for manufactured exports. Two examples include the development of the memory chip industry and the automobile industry.

Before the financial crisis that hit in late 1997, most of Korea's macroeconomic fundamentals were quite strong: rapid economic growth, high rates of domestic investment, limited inflation, small current account deficits, and balanced government budgets. The weaknesses in the economy were structural.[44] *Chaebols* remained an integral part of the Korean economy, and the government remained a key player in the financial sector and the targeting of credit resources. This feature of the Korean economy would play an important part in the impact of the Asian crisis in Korea. While the literature on the success of the Korean Government's intervention in targeted industries is indeterminate[45] –the targeted industries exhibited lower than average growth rates– the historical role of the government in the Korean economy is clear.

Asian Financial Crisis

Along with a number of its Asian neighbors, Korea experienced a severe economic crisis in 1997. The crisis and resulting recession interrupted a long period of strong

[44] IMF, *IMF Staff Country Report, Republic of Korea.*

[45] See Arvind Panagariya, "Evaluating the Case for Export Subsidies: The Korean Growth Experience," *The Economic Times*, and Takatoshi Ito and Anne Krueger, *Growth Theories in Light of the East Asian Experience,* NBER, Economic Series, Vol. 4, (Chicago: University of Chicago, 1995).

economic growth for Korea and affected the country's patterns of trade. The 6.7 percent decline in GDP in 1998 was Korea's worst economic performance since the Korean War.[46] The crisis was also significant because of the resulting reforms Korea undertook to prevent it from happening again in the future. In addition to the temporary macroeconomic effects, these reforms would change the nature of banking and cost of capital in Korea, promote arm's length lending practices, decrease the role of the government, and increase the role of the market in the Korean economy.

The crisis in Korea was marked by the bankruptcies of several large conglomerates,[47] a banking sector saddled with a proliferation of nonperforming loans, a decline in foreign currency reserves, rising foreign debt payments, and a large devaluation of the Korean won. The crisis culminated in December 1997, when in response to Korean requests, the IMF, The World Bank, and the Asian Development Bank organized a $58 billion relief package. The economic crisis of 1997 was followed by a deep recession in 1998 that saw significant declines in most of the major economic indicators, including a peak in unemployment at three times the pre-crisis level. In addition, a small current account deficit in 1997 swung to a large surplus in 1998 due largely to a contraction in imports resulting from the devalued won and a general decline in domestic consumption.[48]

The 1997 crisis in Korea has been attributed, at least in part, to the mounting debt ratios and poor commercial performance of many of its largest industrial conglomerates.[49] The Korean government had recently eased or eliminated many restrictions on the movement of capital, allowing Korean banks and firms to borrow from abroad.[50] Until this time, Korea had never had significant problems with foreign indebtedness. But in the 1990s, the government encouraged banks and *chaebols* to borrow more heavily from abroad in an effort to finance rapid industrial development. In Korea, where long-term financing was comparatively difficult to raise, banks and firms resorted to short-term borrowing from abroad to finance their long term investments. Given the debt was short term and held by private institutions on floating global interest rates, Korea became more exposed to rapid movements of capital. This and other factors proved important in lowering investors' confidence levels in Korea. Other factors included Korea's largest ever current account deficit in 1996, the bankruptcy of several prominent *chaebols,* and the deteriorating financial conditions in several neighboring countries.[51]

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[46] Bank of Korea.

[47] Beck, "Are Korea's *Chaebol* Serious About Restructuring?"

[48] Bank of Korea, "Principal Economic Indicators," found at *www.bok.or.kr/index_e.html*, retrieved Jan. 12, 2001, and U.S. Department of Commerce, "FY 2000 Country Commercial Guide: Korea," found at *www.usatrade.gov*, retrieved Jan. 17, 2001.

[49] WTO, "Korea Trade Policy Review Summary," Sept. 18, 2000.

[50] Chung-in Moon and Jongryn Mo, *Economic Crisis and Structural Reforms in South Korea: Assessments and Implications*, (Washington, D.C.: Economic Strategy Institute, 2000), pp. 3-6.

[51] *Economist Intelligence Unit*, "Country Profile: South Korea, North Korea."

At the same time Korean borrowers were increasing their reliance on foreign capital,[52] prices for many of Korea's key exports were eroding. Terms of trade worsened and corporate profits fell, thereby making the servicing of corporate debt problematic. Foreign currency reserves declined, the won came under pressure, and foreign lenders became increasingly unwilling to roll over existing loans. The high debt-to-equity ratios of the large Korean industrial conglomerates and their low profitability made them particularly vulnerable to cash flow shocks. The Korean banking sector, formerly under government control, was highly exposed to and therefore dependent on Korean businesses.[53] As such, when foreign sources of capital began to dry up due to loss of investor confidence, a liquidity crisis ensued and both the banking and nonbanking sectors of the Korean economy suffered.

Post Crisis

The crisis exposed structural weaknesses in the Korea economy and, as part of its agreement with the IMF, the Korean Government undertook a number of market-based reforms directed at the financial, corporate, labor, and public sectors.[54] The Korean Government opened its financial and most of its industrial sectors to foreign investment and further reduced or eliminated controls on movement of capital. Specific financial sector actions included clearing of nonperforming loans and closing of insolvent institutions, recapitalizing viable institutions, improving transparency, and deregulating and liberalizing markets.[55] The aim of corporate reforms included improving transparency (especially in accounting practices), eliminating intraconglomerate loan guarantees, reducing corporate debt levels, narrowing the breadth of conglomerates' business activities to core competencies, and improving managerial accountability.[56]

In December 1997, Korea shifted from a managed exchange rate regime to a free-floating regime. During the crisis, the won depreciated more than 40 percent against the dollar,[57] which significantly increased Korea's export performance in 1998. The won has been appreciating since that time, but the central bank has worked to prevent rapid fluctuations.[58] The value of the won today remains below the pre-crisis level, a major factor in Korea's shift from a current account deficit to a surplus.

Fiscal policy following the crisis was expansionary, but budgets have gradually returned toward balance as Korea improves tax collection and restrains expenditures. Funds from the IMF and disbursements from other multilateral and bilateral sources

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[52] Lindgren, *Financial Sector Crisis and Restructuring.*

[53] Ibid.

[54] WTO, "Korea Trade Policy Review Summary," Sept. 18, 2000.

[55] Chung-in Moon and Jongryn Mo, *Economic Crisis and Structural Reforms in South Korea: Assessments and Implications*, (Washington, D.C.: Economic Strategy Institute, 2000), pp. 27-29.

[56] Beck, "Are Korea's *Chaebol* Serious About Restructuring?"

[57] Bank of Korea.

[58] WTO, "Korea Trade Policy Review Summary," Sept. 18, 2000.

have allowed Korea to replenish its balance of international reserves. The inflow of funds has increased confidence in the economy. So has the gradual shift away from short-term foreign currency financing to longer-term liabilities.[59]

The Korean economy exhibited a remarkable recovery in 1999 and 2000, partly as a result of ongoing reform efforts. GDP growth and unemployment have returned to pre-crisis levels, while imports and exports have begun to expand again. The stock of foreign currency reserves has returned to pre-crisis levels, and foreign investment in Korea has been very strong.

International Trade and Investment

International Trade

During most of the 1990s, Korea maintained a deficit or small surplus in its merchandise trade account. As noted earlier, the deficits shifted to surplus in 1998, when a drop in domestic demand and a large currency depreciation led to a sharp decline in Korea's imports. The Korean trade surplus totaled $53.8 billion in 1998,[60] $28.4 billion in 1999, and an estimated $16.6 billion in 2000.[61] Exports totaled $139.9 billion in 1998,[62] $145.2 billion in 1999, and $175.8 billion in 2000. Imports fell to $86.1 billion in 1998, but rebounded to $116.8 billion in 1999, and $159.2 billion in 2000.[63]

Exports

Korean exports are dominated by manufactured goods (table 2-4). Almost half of Korea's exports in 1998 were machinery and transport equipment (47.4 percent), more than double the sector's share of Korean exports in 1980. On a commodity basis, the largest exports from Korea include electrical machinery ($24.9 billion in 1998), road vehicles ($12.0 billion), textile yarn and fabrics ($11.6 billion), and other transport equipment ($9.2 billion). Since 1994, major export commodities with significant growth included iron and steel (56.5 percent growth in the 1994-98 period), other transport equipment (78.1 percent growth), road vehicles (81.9 percent growth), petroleum-related products (423.5 percent growth), and nonmonetary gold (1,181.8 percent growth). In the same period, exports have fallen in telecommunications apparatus (12.9 percent), wearing apparel (16.0 percent), and

[59] Ibid.
[60] Compiled from Statistics Canada data.
[61] *Economist Intelligence Unit*, "Country Report: South Korea, North Korea."
[62] Compiled from Statistics Canada data.
[63] *Economist Intelligence Unit*, "Country Report: South Korea, North Korea."

fish (10.3 percent). Exports of textile yarn and fabrics grew slowly, achieving 8.2 percent growth. Table 2-5 presents Korea's top 25 export commodities, classified by two-digit SITC code. Korea's largest export markets in 1998 included Europe (19.0 percent of total exports), the United States (17.1 percent), China (10.0 percent), Japan (9.4 percent), and Hong Kong (7.0 percent). The United States'share of Korean exports reached 27.0 percent in 1980, but has declined as Korea has diversified around the world, including the opening of trade to China (table 2-6).

Table 2-4
Korean exports to the world, classified by one-digit SITC, 1980, 1994, 1998

SITC No. and item	1980	1994	1998	1980	1994	1998
	Value *(million dollars)*			*Percent of total*		
0 Food and live animals	1,213.6	2,276.4	2,473.6	6.6	2.4	1.8
1 Beverages and tobacco	131.3	97.8	188.9	0.7	0.1	0.1
2 Crude materials, inedible, except fuels	342.7	1,425.9	1,576.0	1.9	1.5	1.1
3 Mineral fuels, lubricants	49.2	1,755.4	9,174.3	0.3	1.8	6.6
4 Animal and vegetable oils, fats, waxes	13.0	7.5	29.9	0.1	([1])	([1])
5 Chemicals and related products	796.2	6,237.1	10,353.0	4.3	6.5	7.4
6 Manufactured goods	6,578.3	23,118.7	29,637.2	35.6	24.1	21.2
7 Machinery and transport equipment	3,733.2	46,899.9	66,373.8	20.2	48.9	47.4
8 Miscellaneous manufactured articles	5,527.0	13,502.6	12,789.0	29.9	14.1	9.1
9 Commodities & transactions not classified	73.1	629.0	7,317.8	0.4	0.7	5.2
Total	18,457.7	95,950.4	139,913.4	100.0	100.0	100.0

[1] Less than 0.05 percent of total.

Source: Compiled from Statistics Canada data.

Table 2-5
Korean exports to the world, classified by two-digit SITC, 1980, 1994, 1998

SITC No. and item	1980	1994	1998	1980-94	1994-98
	Value *(million dollars)*			*Percent change*	
77 Electrical machinery, apparatus and appliances	978.4	18,074.8	24,970.0	1,747.4	38.1
78 Road vehicles (incl. air cushion vehicles)	382.4	6,623.5	12,046.0	1,632.2	81.9
65 Textile yarn, fabrics	2,338.5	10,688.7	11,562.7	357.1	8.2
79 Other transport equipment	812.2	5,189.4	9,240.5	538.9	78.1
33 Petroleum, petroleum products and related products	45.1	1,722.9	9,019.9	3,718.4	423.5
67 Iron and steel	1,737.1	4,788.0	7,494.4	175.6	56.5
97 Gold, non-monetary	5.6	568.0	7,281.1	10,047.0	1,181.8
76 Telecommunications and sound recording appararatus	1,152.5	8,235.2	7,169.7	614.5	-12.9
75 Office machines and automatic data processing equipment	91.0	3,523.4	5,445.7	3,771.0	54.6
58 Artificial resins, plastic materials	140.9	2,915.3	5,036.3	1,968.6	72.8
84 Articles of apparel and clothing accessories	3,131.9	5,694.1	4,784.8	81.8	-16.0
89 Miscellaneous manufactured articles, n.e.s.	773.0	3,731.3	3,872.4	382.7	3.8
51 Organic chemicals	168.1	1,882.6	3,255.7	1,020.2	72.9
74 General industrial machinery and equipment	111.8	2,140.5	3,254.2	1,814.3	52.0
69 Manufactures of metal, n.e.s.	803.9	2,344.8	2,534.2	191.7	8.1
72 Machinery specialized for particular industry	73.0	1,805.0	2,520.7	2,371.0	39.6
68 Non-ferrous metals	90.3	746.1	2,097.1	726.6	181.1
87 Professional, scientific and controlling instruments	96.8	657.8	2,005.4	579.8	204.9
62 Rubber manufactures, n.e.s.	530.1	1,390.1	1,777.6	162.2	27.9
64 Paper, paperboard, articles of paper, paper-pulp	150.2	832.1	1,734.8	453.8	108.5
61 Leather, leather manufactures	48.4	1,553.6	1,558.2	3,109.0	0.3
03 Fish, crustaceans, preparations thereof	717.7	1,401.0	1,257.3	95.2	-10.3
71 Power generating machinery and equipment	97.0	1,001.2	1,086.5	932.6	8.5
88 Photographic apparatus, optical goods, watches	267.1	833.6	971.4	212.1	16.5
26 Textile fibers (except wool tops)	71.9	773.5	869.0	976.4	12.3
Total	18,457.7	95,950.4	139,913.4	419.8	45.8

Note.—Top 25 exports commodities, ranked by 1998 exports.
Source: Compiled from Statistics Canada data.

Table 2-6
Korean exports to selected markets, 1980, 1995, 1998

Market	1980	1995	1998	1980	1995	1998
	Million dollars			*Percent of total*		
United States	4,985.1	24,299.0	23,901.4	27.0	19.4	17.1
Europe	3,451.6	18,763.1	26,524.7	18.7	14.9	19.0
Japan	3,199.8	17,168.4	13,221.8	17.3	13.7	9.4
China	([1])	10,039.8	14,055.6	([1])	8.0	10.0
Hong Kong	859.4	10,447.6	9,739.7	4.7	8.3	7.0
Taiwan	232.8	3,898.7	5,271.0	1.3	3.1	3.8
Australia	236.0	1,670.2	2,853.2	1.3	1.3	2.0
Total	18,457.1	125,530.1	139,913.4	100.0	100.0	100.0

[1] Trade with China in 1980 is not reported.

Source: Compiled from Statistics Canada data.

One outcome of the Korean government's long-term emphasis on exports has been an opportunity to capture economies of scale in industries that have not had a large domestic market base. This strategy has resulted in a large shift in the composition of Korean exports. In 1963, more than half of Korea's exports were primary products. Today, primary products make up less than 5 percent of Korean exports, giving way to exports of higher value-added products such as electronics (especially memory chips), steel, and automobiles. There is a high import content in Korea's exports, and Korea has shown dependence on imported capital goods in its investment. The result is that traditionally, when Korea's exports and business investment have expanded, so have merchandise imports.[64]

The rapid increase in wages since 1988 has lessened the cost competitiveness of Korea's traditionally large labor-intensive industries such as clothing, footwear, and toys on the world market. These industries have experienced stagnation or decline (especially footwear).[65] Some Korean firms have shifted production to lower wage neighboring countries.

Imports

Historically, the Korean import market has shown significant levels of protection and regulation. There have, however, been significant changes to Korea's trade regime, with several important steps towards trade liberalization. Korea's import tariffs have decreased significantly, and so have many quantitative restrictions on imports. According to the WTO, Korea's average applied most favored nation (MFN) tariff was 13.8 percent in 2000. The average applied MFN tariff for industrial products is 7.5 percent, while that for agricultural products is closer to 50 percent ad valorem (see chapter 4).[66]

In 1998, significant Korean import sectors included electrical machinery ($14.5 billion), petroleum products ($13.9 billion), organic chemicals ($3.1 billion), and general industrial machinery ($2.9 billion). Imports more than quadrupled in the period 1980-98, but decreased 9.2 percent in the 1994-98 period reflecting the effect of the financial crisis. Imports showing the largest decreases during this period included general industrial machinery (44.4 percent decline), iron and steel (32.9 percent), precision instruments (17.7 percent), textile yarn and fabrics (34.7 percent), and machinery specialized for particular industries (63.3 percent).

As the economy emerges from recession, imports are supported by recovering domestic demand and industries that require imported inputs for increasing production. Korea's largest import sources include the United States, Europe, Japan, and China. Tables 2-7 and 2-8 present Korea's imports by one- and two-digit SITC code, and table 2-9 presents Korean imports from selected trading partners.

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[64] *Economist Intelligence Unit*, "Country Profile: South Korea, North Korea."
[65] Ibid.
[66] WTO, "Trade Policy Review, Korea: September 2000."

Table 2-7
Korean imports from the world, classified by one-digit SITC, 1980, 1994, 1998

SITC No. and item	1980	1994	1998	1980	1994	1998
	Million dollars			*Percent of total*		
0 Food and live animals chiefly for food	1,652.1	3,721.8	4,010.2	7.9	3.9	4.7
1 Beverages and tobacco	79.7	925.3	544.6	0.4	1.0	0.6
2 Crude materials, inedible, except fuels	3,109.3	7,509.5	6,188.6	14.9	7.9	7.2
3 Mineral fuels, lubricants and related materials	5,874.4	13,543.7	17,869.4	28.2	14.3	20.8
4 Animal and vegetable oils, fats and waxes	118.8	285.5	292.1	0.6	0.3	0.3
5 Chemicals and related products, n.e.s.	1,898.9	9,177.0	8,328.3	9.1	9.7	9.7
6 Manufactured goods classified by material	2,421.3	14,648.4	9,991.9	11.6	15.5	11.6
7 Machinery and transport equipment	4,729.5	34,805.1	30,044.5	22.7	36.7	34.9
8 Miscellaneous manufactured articles	680.8	7,682.7	6,010.6	3.3	8.1	7.0
9 Commodities and transactions not classified	272.8	2,464.2	2,791.1	1.3	2.6	3.2
Total	20,837.6	94,763.2	86,071.3	100.0	100.0	100.0

Source: Compiled from Statistics Canada data.

Table 2-8
Korean imports from the world, classified by two-digit SITC, 1980, 1994, 1998

SITC No. and item	1980	1994	1998	1980-94	1994-98
	Million dollars			*Percent change*	
77 Electrical machinery, apparatus and appliances	948.7	10,515.8	14,536.3	1,008.4	38.2
33 Petroleum, petroleum products and related materials	5,583.5	10,784.7	13,924.4	93.2	29.1
51 Organic chemicals	849.5	3,304.7	3,092.4	289.0	-6.4
74 General industrial machinery and equipment	722.3	5,249.8	2,918.7	626.8	-44.4
79 Other transport equipment	658.4	2,746.0	2,667.3	317.1	-2.9
67 Iron and steel	991.0	3,803.4	2,551.9	283.8	-32.9
68 Non-ferrous metals	323.6	2,552.8	2,521.3	688.9	-1.2
87 Professional, scientific and controlling instruments	235.2	2,982.0	2,453.6	1,167.8	-17.7
28 Metalliferous ores and metal scrap	601.5	1,975.1	2,439.5	228.4	23.5
65 Textile yarn, fabrics	428.2	3,465.0	2,264.2	709.2	-34.7
72 Machinery specialized for particular industry	574.1	5,865.7	2,152.4	921.7	-63.3
34 Gas, natural and manufactured	16.6	1,352.3	2,129.1	8,051.1	57.4
71 Power generating machinery and equipment	520.4	2,521.3	2,066.5	384.5	-18.0
76 Telecommunications and sound recording apparatus	592.6	2,281.2	2,028.1	285.0	-11.1
75 Office machines and automatic data processing equipment	152.0	2,494.2	1,857.9	1,540.6	-25.5
32 Coal, coke and briquettes	274.3	1,406.7	1,815.8	412.8	29.1
04 Cereals and cereal preparations	1,123.9	1,258.4	1,587.2	12.0	26.1
89 Miscellaneous manufactured articles, n.e.s.	180.8	1,898.9	1,441.0	950.2	-24.1
59 Chemical materials and products, n.e.s.	280.1	1,301.8	1,342.2	364.8	3.1
93 Special transactions and commodities	218.5	1,625.6	1,293.7	643.9	-20.4
58 Artificial resins, plastic materials, cellulose	240.5	1,688.4	1,207.3	602.1	-28.5
78 Road vehicles (including air cushion vehicles)	230.4	1,632.9	1,199.8	608.9	-26.5
88 Photographic apparatus, optical goods, watches	236.9	1,515.9	1,173.7	539.8	-22.6
97 Gold, non-monetary	6.0	609.2	1,121.1	10,036.3	84.0
52 Inorganic chemicals	222.6	890.1	966.8	299.8	8.6
Total	19,322.46	89,979.1	82,344.2	364.7	-8.3

Note.—Top 25 import commodities, ranked by 1998 imports.
Source: Compiled from Statistics Canada data.

Table 2-9
Korean imports, by selected sources, 1980, 1995, 1998

Source	1980	1995	1998	1980	1995	1998
	Million dollars			*Percent of total*		
United States	4,814.0	28,352.6	17,663.6	23.1	22.6	20.5
Europe	1,668.1	18,750.3	10,947.4	8.0	15.0	12.7
Japan	5,882.3	31,275.4	16,158.0	28.2	25.0	18.8
China	([1])	6,712.4	6,401.1	([1])	5.4	7.4
Hong Kong	230.2	2,786.6	1,782.6	1.1	2.2	2.1
Taiwan	322.8	2,563.6	1,651.9	1.6	2.0	1.9
Australia	566.0	4,587.9	3,775.7	2.7	3.7	4.4
Saudi Arabia	3,462.1	5,456.6	4,411.5	16.6	4.4	5.1
Total	20,837.4	125,347.8	86,071.3	100.0	100.0	100.0

[1] Trade with China in 1980 is not reported.

Source: Compiled from Statistics Canada data.

Participation in International Trade Organizations

Korea has generally pursued a multilateral approach to trade. However, it has recently started to explore free trade agreements on the bilateral level. Korea is a member of the Asia-Pacific Economic Cooperation (APEC) forum, which in 1994 pledged to create a Free Trade Area (FTA) among its members by 2020. Korea is also a member of the WTO, and has signed several WTO agreements, including TRIPs (Trade Related Aspects of Intellectual Property) and the Government Procurement Agreement. In December 1996, Korea joined the Organization for Economic Cooperation and Development (OECD).[67]

Foreign Investment

Traditionally, foreign direct investment (FDI) has not been a major component of the Korean economy nor has it played an important role in Korea's economic development. In fact, until the 1970s, Korean government policy discouraged FDI. This was done through the imposition of minority ownership requirements, technology transfer requirements, and strong export performance requirements. Most foreign investment into Korea took the form of commercial loans, not direct investment.[68]

This situation has changed, however. Foreign investment in Korea was partially deregulated during Korea's accession to the OECD in 1996, and was further opened up in 1997-98 during the IMF-led program for economic recovery. The Korean government now allows foreign ownership of Korean firms in most sectors, and encourages foreign participation in Korea's domestic debt and equity markets. [69] In 1998, for the first time, foreigners were allowed to own land in Korea. The result of these measures has been a rapid increase in foreign capital inflows in Korea. The ratio of FDI inflows to GDP in Korea increased from 0.01 percent in 1980 to 1.7 percent in 1998,[70] still lower than that for the United States (2.3 percent), China (4.5 percent),

[67] U.S. Department of State, "FY 2001 Country Commercial Guide: Korea," p. 14.
[68] Noland. *Avoiding the Apocalypse: The Future of the Two Koreas*, p. 28.
[69] *Economist Intelligence Unit*, "Country Profile: South Korea, North Korea."
[70] The World Bank, "World Development Indicators 2000," CD-ROM.

East Asia and the Pacific (3.9 percent), and the world average (2.2 percent).[71] In 2000, FDI commitments far exceeded cumulative FDI during the entire 1962-81 period, and foreign portfolio investors now own 20-to 25 percent of the market capitalization of the Korean Stock Exchange (KSE).[72]

Table 2-10 shows that in 2000, the United States was the largest single source of FDI in Korea representing 18.1 percent of FDI in Korea, followed by Japan (12 percent) and Germany (11.9 percent).[73] The tenfold increase in FDI over 1990-2000 largely represents the gains since the recession. Outflows of FDI from Korea are significantly smaller, and are predominantly focused in North America and Asia (table 2-11). Manufacturing accounted for 58.6 percent of FDI flows in 2000, while services accounted for 41.4 percent (table 2-12). Manufacturing industries with large 2000 FDI flows included machinery (17.0 percent), electricity and electronics (16.4 percent), and transport equipment (10.3 percent). The financial sector accounted for 8.8 percent of FDI, and the insurance sector accounted for 6.7 percent.

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[71] The World Bank, "World Development Indicators 2000," CD-ROM.
[72] U.S. Department of State, "FY 2001 Country Commercial Guide: Korea," p. 14.
[73] Excluding Bermuda.

Table 2-10
Total foreign direct investment flows into Korea, by investing country, 1962-81, 1990, 2000

Source	1962-81	1990	2000	2000
		Million dollars		*Percent*
America	446.8	272.4	3,801.5	43.7
United States	377.3	265.1	1,569.7	18.1
Bermuda	17.1	0.0	1,362.2	15.7
Other America	52.5	7.2	869.7	10.0
Asia	845.6	403.8	2,307.7	26.5
Japan	814.0	365.9	1,039.8	12.0
Malaysia	-	0.2	915.7	10.5
Hong Kong	30.0	19.0	126.1	1.4
Singapore	-	12.6	99.1	1.1
China	-	0.5	52.8	0.6
Other Asia	1.6	5.7	74.4	0.9
Europe	128.1	200.5	2,569.9	29.6
Germany	29.4	80.5	1,037.8	11.9
Netherlands	28.6	18.5	853.2	9.8
France	16.6	17.6	394.5	4.5
England	29.8	37.0	58.8	0.7
Other Europe	23.6	46.8	225.7	2.6
Other	57.4	18.8	17.1	0.2
Total	1,477.9	895.4	8,696.3	100.0

Source: Korean Ministry of Commerce, Industry, and Energy.

Table 2-11
Foreign direct investment outflows from Korea, by destination, 1997-99[1]

Million dollars

Destination	Flows			Stock
	1997	1998	1999	
North America	738	910	1,020	7,852
Asia	1,504	1,549	1,002	10,611
Europe	461	1,022	248	4,060
Other	526	412	212	3,180
Total outflow	3,229	3,893	2,482	25,703

[1] These numbers vary slightly from those presented in table 3-4 because it was necessary to use different data sources.

Source: U.S. Department of State.

Table 2-12
Foreign direct investment flows in Korea, by industry, 1962-81, 1990, 2000

Sector	1962-81	1990	2000	2000 share
	Million dollars			*Percent*
Agriculture, Livestock and Fishery	10.1	4.8	3.3	([1])
Mining	2.7	0.8	0.1	([1])
Manufacturing	1,052.9	595.6	5,094.4	58.6
Food	38.2	30.6	78.5	0.9
Textile and Clothing	109.5	6.9	14.8	([1])
Paper and Lumber	6.6	7.5	8.0	([1])
Chemicals	294.1	145.3	185.6	2.1
Fertilizer	47.3	0.2	-	-
Medicine	14.5	32.5	61.9	0.7
Petroleum	81.3	37.3	0.1	([1])
Ceramics	25.4	15.6	48.0	0.6
Metals	82.7	4.5	202.3	2.3
Machinery	77.6	84.2	1,478.0	17.0
Electricity and Electronics	195.8	87.7	1,428.7	16.4
Transport Equipment	58.2	139.8	896.0	10.3
Other Manufacturing	21.8	3.6	692.3	8.0
Services	412.2	294.3	3,598.4	41.4
Electricity and Gas	-	-	212.6	2.4
Construction	10.4	-	8.6	([1])
Wholesale and Retail	-	0.7	373.0	4.3
Trading	0.4	28.1	210.7	2.4
Restaurant	-	0.6	20.5	([1])
Hotel	206.1	64.9	4.7	([1])
Transport and Storage	28.7	4.7	18.3	([1])
Financing	109.7	157.2	764.1	8.8
Insurance	3.0	18.5	578.5	6.7
Real Estate	-	-	249.4	2.9
Other Service	53.9	19.5	1,158.0	13.3
Total	1,477.9	895.4	8,696.3	100.0

[1] Less than 0.05 percent.

Source: Korean Ministry of Commerce, Industry, and Energy.

CHAPTER 3
U.S.-Korea Economic Relationship

This chapter examines the bilateral trade and investment aspects of the U.S.-Korea economic relationship. Specifically, facts and figures concerning bilateral trade, trading patterns and the structure of the bilateral trade relationship are examined. The discussion also covers recent bilateral trade disputes. Bilateral investment trends and patterns are reviewed and the chapter includes a discussion of production and trade for selected industries in the United States and Korea.[1]

Bilateral Trade and Investment

Facts and Figures of Bilateral Trade

Korea and the United States are significant trading partners with bilateral trade totaling $69 billion in 2000 (table 3-1). In 2000, the United States was Korea's largest export market and second largest import source; Korea was the United States' eighth largest export market and sixth largest import source.[2] Bilateral trade fluctuated over 1995 to 2000, principally as a result of the Asian financial crisis. U.S. exports to Korea fell substantially in 1998 at the height of the crisis.

Korea's ability to purchase foreign goods declined due to the sharp devaluation of the Korean won and decline of real GDP of nearly 7 percent in 1998.[3] By 2000, U.S. exports to Korea had recovered to the pre-crisis level as the Korean economy exhibited a strong recovery. The fall of the Korean won coupled with the notable GDP growth of the United States[4] spurred increased U.S. imports from Korea after the crisis. U.S. imports from Korea grew by 32 percent in 1999 and 28 percent in 2000, outpacing total U.S. import growth of 12 percent in 1999 and 18 percent in 2000.

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[1] The sectoral analysis section is categorized by six sectors with respective subsectors: agriculture (rice, dairy, beef, and fruits and vegetables); natural resources (petroleum); minerals and metals (iron and steel); textiles, apparel and leather goods; other manufacturing (electronics, transportation equipment, and chemicals and allied products); and, services (banking and securities, telecommunications services, and motion pictures).

[2] The United States was surpassed by Japan as the leading source of imports for Korea, a position the United States held the previous four years, most likely because of the removal of prohibitions on the importation of a number of Japanese products. U.S. Department of State, Bureau of Economic and Business Affairs, "FY 2001 Country Commercial Guide: Korea," July 2000, pp. 9-10.

[3] Congressional Research Service, "South Korea - U.S. Economic Relations: Cooperation, Friction, and Future Prospects," Report RL 30566, January 16, 2001, p. 2.

[4] U.S. nominal GDP grew by 5.8 percent in 1999 and 7.1 percent in 2000. See also CRS, "South Korea - U.S. Economic Relations: Cooperation, Friction, and Future Prospects," p. 2.

Table 3-1
U.S.-Korea bilateral merchandise trade, by sector, 1995-2000

(1,000 dollars)

Sector	1995	1996	1997	1998	1999	2000
U.S. exports to Korea:						
Agriculture	5,568,810	5,558,159	4,288,172	2,921,361	3,660,787	3,981,713
Manufacturing	19,772,009	21,193,309	21,245,716	13,311,309	19,122,725	23,415,248
Textiles, apparel, and leather goods	573,907	551,808	554,901	386,690	324,730	359,772
Minerals and metals	1,693,499	1,548,616	1,309,328	685,103	712,743	933,565
Natural resources	744,343	868,787	745,474	359,154	539,183	392,034
Total	28,352,567	29,720,678	28,143,591	17,663,617	24,360,169	29,082,334
U.S. imports from Korea:						
Agriculture	381,802	363,849	411,496	525,541	567,150	705,977
Manufacturing	19,729,251	18,163,721	17,921,963	17,843,025	24,857,189	32,624,846
Textiles, apparel, and leather goods	3,363,858	3,016,520	3,222,756	3,510,999	3,745,754	4,008,710
Minerals and metals	679,964	693,639	839,336	1,548,991	1,249,036	1,397,815
Natural resources	144,082	141,229	189,075	472,872	1,194,218	1,662,527
Total	24,298,956	22,378,957	22,584,625	23,901,428	31,613,346	40,399,876
U.S. trade balance with Korea:						
Agriculture	5,187,008	5,194,310	3,876,677	2,395,820	3,093,637	3,275,736
Manufacturing	42,758	3,029,588	3,323,753	(4,531,716)	(5,734,464)	(9,209,598)
Textiles, apparel, and leather goods	(2,789,951)	(2,464,712)	(2,667,855)	(3,124,309)	(3,421,024)	(3,648,938)
Minerals and metals	1,013,535	854,977	469,992	(863,888)	(536,292)	(464,250)
Natural resources	600,261	727,558	556,399	(113,718)	(655,034)	(1,270,493)
Total	4,053,611	7,341,721	5,558,966	(6,237,811)	(7,253,177)	(11,317,543)

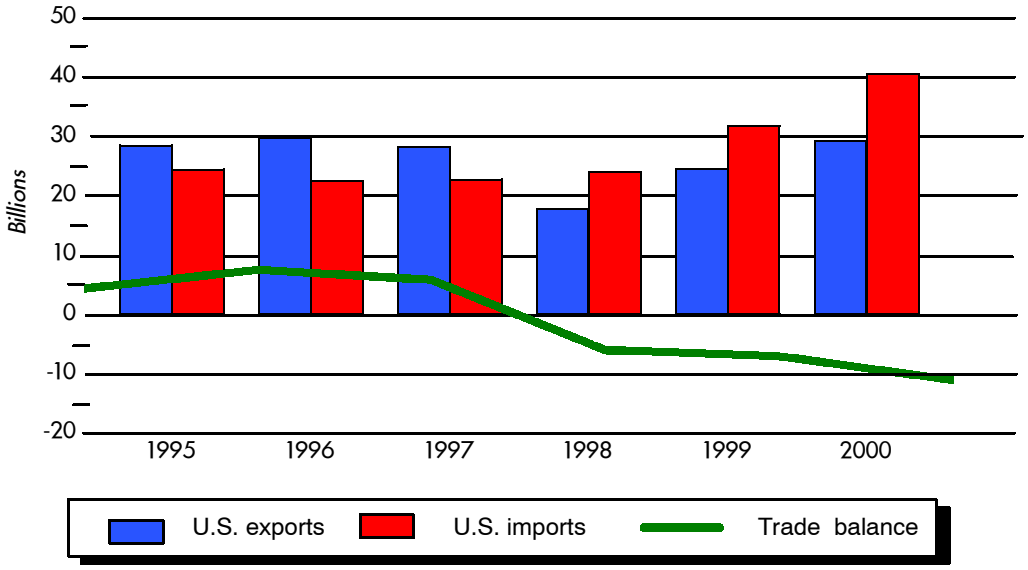
Note.—Some columns do not add up due to rounding.

Sources: Statistics Canada and USITC estimates.

The United States' merchandise trade balance with Korea prior to the crisis was in surplus but declining; since 1998 it has been in deficit and stood at $11.3 billion in 2000 (figure 3-1). This overall negative trade balance is principally the result of trade in manufactured goods, which changed from a surplus of $43 million in 1995 to a deficit of $9 billion in 2000. A bilateral trade deficit emerged as well over this period for natural resources and minerals and metals, while agricultural products have maintained a trade surplus. The U.S. trade deficit with Korea in textiles, apparel, and leather goods grew throughout the period.

Much of U.S.-Korean trade is in similar product categories, primarily manufactured goods. Manufactured goods represent an increasing share of U.S. exports to Korea, accounting for 70 percent of total U.S. exports to Korea in 1995, and 81 percent in 2000. Major manufacturing export items include semiconductors, computer equipment and parts, and telecommunications equipment. In fact, semiconductors alone accounted for 20 percent of total U.S. exports to Korea in 2000. Much of the bilateral semiconductor trade results from production sharing as Korea is one of the

Figure 3-1
U.S. exports, imports, and trade balance with Korea, 1995-2000



Sources: Statistics Canada and USITC estimates.

largest semiconductor production-sharing partners for the United States.[5] Agricultural exports accounted for 20 percent of total U.S. exports to Korea in 1995 and 14 percent in 2000.

Similarly, Korean exports to the United States principally have been manufactured goods, accounting for 81 percent in both 1995 and 2000. In 2000, semiconductors alone accounted for nearly 20 percent of total U.S. imports from Korea. Other major imports from Korea include computer equipment and parts, motor vehicles, and telecommunications equipment. Textiles, apparel, and leather goods, another major trading sector, accounted for 9.9 percent of U.S. imports from Korea, and were the second largest U.S. import from Korea during this period, although the sector's relative importance declined.

Bilateral Investment

The United States has been a leading supplier of foreign direct investment (FDI) to Korea. However, Korea accounted for only 0.8 percent of the total stock of U.S. outward investment in 1999, which reflects the relatively minor role that FDI has played in the Korean economy (see chapter 2). The United States receives a fairly large share of Korean investment abroad, and in 1997 accounted for 27 percent of Korea's total

[5] According to U.S. Department of Commerce (USDOC) data, Korea is among the top five U.S. semiconductor production-sharing partners. For a description of the production-sharing process, see U.S. International Trade Commission, *Production Sharing: Use of U.S. Components and Materials in Foreign Assembly Operations, 1992-1995,* Inv. No. 332-237, USITC Publication 3032, April 1997.

outbound FDI stock. However, Korea has not been a large investor abroad and in 1999 accounted for just 0.2 percent of the total stock of foreign investment in the United States. In terms of FDI stock in Korea, the United States likely accounted for over one-fifth of the total (tables 3-2 and 3-3).[6]

Table 3-2
Foreign direct investment: U.S. investment outflows, investment stocks abroad, investment inflows, and foreign stock of investment in the United States, 1994-99

(Million dollars)

Item	1994	1995	1996	1997	1998	1999
U.S. investment outflows						
Korea	390	1,051	752	681	638	1,194
World	73,252	92,074	84,826	95,769	134,083	138,510
U.S. investment stocks abroad						
Korea	4,334	5,557	6,508	6,647	7,395	8,749
World	612,893	699,015	795,195	871,316	1,014,012	1,132,622
Foreign investment flows into the United States						
Korea	58	915	(760)	610	57	423
World	45,095	58,772	84,455	103,513	181,764	271,169
Foreign stock of investment in the United States						
Korea	(73)	692	(103)	363	974	1,520
World	480,667	535,553	598,021	689,834	793,748	986,668

Note.—Direct investment position is negative when the value of loans made by U.S. affiliates to their foreign parent companies exceeds the value of the parents' equity holdings plus the value of loans made by the parent to its affiliate companies.

Sources: Bureau of Economic Analysis, U.S. Department of Commerce and Organisation for Economic Co-operation and Development (OECD), *International Direct Investment Statistics Yearbook, 1999*.

Table 3-3
Foreign direct investment: Korea's investment outflows, investment stocks abroad, and investment inflows, 1994-99

(Million dollars)

Item	1994	1995	1996	1997	1998	1999
Korean investment outflows						
United States	525	535	1,568	729	874	950
World	2,299	3,071	4,248	3,229	3,895	2,549
Korean investment stocks abroad						
United States	2,271	2,710	4,065	4,565	([1])	([1])
World	7,472	10,233	13,828	16,821	20,263	22,337
Foreign investment flows into Korea						
United States	311	645	876	3,190	2,973	3,739
World	1,317	1,947	3,203	6,971	8,852	15,541

[1] Not available.

Sources: OECD, *International Direct Investment Statistics Yearbook, 1999*; Korean Export-Import Bank; and the Korean Ministry of Commerce, Industry, and Energy.

[6] Commission estimate based on available historical flow data; stock data are not available.

Historically, U.S. investment flows to Korea have been relatively low but exhibited significant growth just prior to and following the Asian financial crisis. The growth of U.S. investment in Korea was in part due to the depressed value of Korean assets following the crisis as well as efforts by the Korean Government to open the economy to foreign investment.[7] Korean Government data show that U.S. FDI into Korea from 1997-99 exceeded aggregate U.S. investment for all prior years combined.[8] U.S. Government data, reported by the Bureau of Economic Analysis (BEA), show that banking, wholesale trade, and electric and electronic equipment were the leading Korean industry recipients of U.S. FDI.[9]

Korean investment in the United States is most heavily concentrated in wholesale trade, banking, and machinery. Korean flows of FDI to the United States were sporadic during 1995-99, and, according to the BEA, the level of these flows declined following a high of over $900 million in 1995. The stock of Korean FDI in the United States fluctuated significantly before showing more steady growth from 1997-99.

Bilateral Trade Disputes

Although market liberalization in recent years has led to substantial increases in overall trade and investment between the United States and Korea, trade disputes continue to affect a number of industries. The level of trade friction between the two countries is affected not only by restrictive measures within specific industries, but also by broader political, security, and economic factors. For example, U.S. support for Korea's economic recovery following the 1997 financial crisis dampened U.S. criticism of Korean trade barriers, and Korean sensitivity regarding the presence of U.S. troops in Korea could produce a similar effect in the future.[10] On the other hand, slower growth of the U.S. economy and significant trade deficits tend to heighten U.S. concerns regarding barriers to U.S. exporters. The WTO dispute settlement process and U.S. trade laws have been the primary mechanisms for settling bilateral trade disputes that cannot be resolved otherwise.

The United States has used the WTO dispute settlement process on five occasions during 1995-2000 to resolve trade disputes with Korea. At issue were shelf-life restrictions for food products, import clearance procedures for agricultural and food products, taxes on distilled spirits, regulations affecting imported beef, and government procurement. The WTO dispute settlement bodies (DSBs) have ruled in

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[7] Congressional Research Service, "South Korea-U.S. Economic Relations: Cooperation, Friction, and Future Prospects," Jan. 16, 2001.

[8] Korean Ministry of Commerce, Industry, and Energy, Korea National Statistical Office, "Investments From Abroad," *Korea Statistical Yearbook 2000,* 47th edition, pub. 11-124000-000016-10, Dec. 2000.

[9] U.S. Department of Commerce, Bureau of Economic Analysis, U.S. Direct Investment Abroad, Balance of Payments and Direct Investment Position Data, found at Internet address *www.bea.doc.gov*, retrieved June 10, 2001.

[10] CRS, "South Korea - U.S. Economic Relations: Cooperation, Friction, and Future Prospects."

favor of the United States in two disputes–beef regulations and taxes on distilled spirits–and against the United States in the action regarding procurement. The two remaining issues, shelf-life restrictions and import clearance procedures, were settled without a ruling.

Korea submitted five complaints to the WTO's dispute settlement process during 1995-2000. All of these disputes involved certain aspects of U.S. trade remedy laws that Korea alleged were in violation of WTO commitments. Two of these cases–involving U.S. safeguard measures and the right of the U.S. government to transfer antidumping and countervailing duties to industry–are still pending; the decision in a third case involving alleged errors by the Department of Commerce was partially favorable to the United States; a fourth–involving antidumping duties on color television receivers–was withdrawn after the antidumping duty order was revoked; and the fifth case involving antidumping duties on dynamic random access memory (DRAMs) was decided in favor of Korea. The DRAMs dispute continued following the DSB ruling because Korea did not feel that the United States had adopted a standard that conformed to the DSB ruling. A settlement between the parties was reached when the U.S. antidumping duty order was revoked during a five year sunset review.[11]

U.S. antidumping (AD) and countervailing duty (CVD) investigations, as well as actions taken under section 301,[12] section 1377,[13] and section 201[14] represent the primary U.S. trade remedy mechanisms applied to Korean products during 1995-2000. U.S. AD and CVD investigations involving Korean products, especially steel, increased substantially after Korean steel exports to the United States more than doubled during 1997-98 following a 32 percent depreciation of the won.[15] Ten of 17 AD and all four CVD investigations regarding Korean products which were initiated during 1995-2000 involved steel products. Of the total investigations filed during this period, three CVD investigations and seven AD investigations resulted in the imposition of

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[11] Office of the United States Trade Representative, *2001 Trade Policy Agenda and 2000 Annual Report of the President of the United States on the Trade Agreements Program,* March 2001, found at Internet address *www.ustr.gov,* retrieved July 30, 2001.

[12] Section 301 of the Trade Act of 1974 is the principal U.S. statute for addressing foreign government practices affecting U.S. exports of goods or services. It may be used to enforce U.S. rights under bilateral and multilateral trade agreements or to respond to unreasonable, unjustifiable, or discriminatory foreign government practices that burden or restrict U.S. commerce. The range of actions that may be taken under section 301 encompasses any action that is within the power of the President with respect to trade in goods or services or to any other area of pertinent relations with a foreign country. USTR, *2001 Trade Policy Agenda*, p. 207.

[13] Section 1377 of the Omnibus Trade and Competitiveness Act of 1988 requires the USTR to determine whether any act, policy, or practice of a foreign country that has entered into a telecommunications-related agreement with the United States is not in compliance with the terms of the agreement or otherwise denies mutually advantageous market opportunities to telecommunications products and services of U.S. firms in that country. USTR, *2001 Trade Policy Agenda.*

[14] Section 201 of the Trade Act of 1974 allows industries seriously injured or threatened with serious injury by increased imports to petition the International Trade Commission for import relief. If the Commission makes an affirmative determination, it recommends to the President relief that would remedy the injury and facilitate industry adjustment to import competition. The President makes the final decision whether to provide relief and the amount of relief. USITC, *Annual Report 1999*, pub. No. 3313.

[15] International Monetary Fund, *International Financial Statistics Yearbook, 2000*, pub. No. IYIEA001 2000, Sept. 13, 2000.

import duties. Two investigations are pending. Korean exports to the United States were further constrained by import relief granted to the U.S. steel wire rod and welded line pipe industries under section 201. Korea is the largest source of welded line pipe exports to the United States.[16]

Korea initiated five AD investigations on U.S. products during 1995-2000 of which two–involving choline chloride and ethanolamine–resulted in the imposition of duties. Fiberglass yarn is the only other U.S. product that faces AD duties in Korea, as a result of a 1993 investigation.

The United States has also used its authority under section 301 to address barriers in three Korean markets during 1995-2000: beef and pork, steel sheet and pipe and tube, and autos. All three barriers were addressed by bilateral agreements concluded during 1995.[17] A number of trade disputes involving both telecommunications equipment and services have surfaced following the section 1377 review of telecommunications agreements. These disputes have been addressed by three bilateral agreements during the period.

A number of other trade issues that were not the subject of the WTO dispute settlement process or U.S. trade remedy mechanisms were of serious concern to U.S. industries during the period. These issues include partial Korean government ownership of POSCO (the world's largest steel manufacturer), substantial market barriers for motor vehicles and pharmaceuticals, and inconsistent protection of intellectual property rights.

Trading Patterns and Comparative Advantages

In order to assess the effects of a bilateral free trade agreement (FTA) between the United States and Korea, the structure of bilateral trade as well and the relative complementarity of each country's traded goods are considered. That is, if each country's relative strengths lie in different goods, then an elimination of reciprocal tariffs and barriers will likely prove to be especially beneficial. On the other hand, if the two countries produce relatively similar goods, then an FTA will produce relatively fewer benefits to the partner countries.

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[16] USTR, *2000 Trade Policy Agenda and 1999 Annual Report of the President of the United States on the Trade Agreements Program*, March 2000, p. 193, found at Internet address *www.ustr.gov,* retrieved July 30, 2001.

[17] The agreement on steel resulted in the establishment of a consultative mechanism to discuss data related to sheet steel and pipe and tube products and to notify the United States of any plans by the Korean government to control steel pricing, production, and exports. The shelf-life agreement opened markets for agricultural goods by eliminating arbitrary shelf-life restrictions and allowing manufacturers to set their own sell-by dates. The Memorandum of Understanding to Increase Market Access for Foreign Passenger Vehicles in Korea liberalized standards and certification practices; reduced discriminatory taxes; allowed equal access to advertising for foreigners; and permitted foreign majority ownership of auto retail financing entities.

The bilateral revealed comparative advantage (RCA) index[18] provides a simple measure of the United States' relative sectoral strengths and weaknesses in terms of its exports to Korea, and Korea's relative sectoral strengths and weaknesses in terms of its exports to the United States. Specifically, the U.S. index is a measure of U.S. exports to Korea in a given product as a share of U.S. total exports to Korea relative to the world counterpart.[19] A U.S. index greater than unity indicates that the United States is a heavy exporter in a particular product relative to other countries that export to Korea, and the United States is said to have a revealed comparative advantage in that sector. When the index is less than 1, the United States is considered to have a revealed comparative disadvantage in that product.

The index is fairly robust to business cycle differences across trading partners because a business cycle would likely affect all sectors similarly. The index is also generally insensitive to the size of trade barriers, as long as the barriers are not discriminatory against one country. However, the index is altered by any unusual strength or weakness against the dollar.[20] There is potential for increased trade in sectors for which one country has a comparative advantage (the RCA index is greater than 1) and the other country does not (the RCA index is less than 1).

Overall, the comparative advantage indices illustrate that the structure of U.S.-Korea bilateral trade is largely complementary. A summary of the U.S. and Korean bilateral RCA indices across product categories for 1997 is provided in table 3-4 and shows that U.S. firms have the greatest potential for exports to Korea in a wide range of agricultural products and certain chemical and manufacturing products.[21] The greatest potential for Korean exports to the United States is in textiles, apparel, travel goods, rubber manufactures, and iron and steel.

Product categories in which both countries have a revealed comparative advantage include textile fibers, office machines and electrical machinery (including semiconductors), telecommunication equipment, armored fighting vehicles, and artificial resins and plastics. These are the areas in which bilateral trade appears highly competitive or the United States and Korea are production-sharing partners, or both. Semiconductors would be an example in which the United States and Korea are production-sharing partners and competitive.[22]

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[18] For a discussion of the RCA index, see Bela Balassa, "Trade Liberalization and ëRevealed Comparative Advantage'," Manchester School of Economic and Social Studies, vol. 33, pp. 90-123, May, 1965; and J. David Richardson and Chi Zhang, "Revealing Comparative Advantage: Chaotic or Coherent Patterns across Time and Sector and U.S. Trading Partner?" National Bureau of Economic Research, Working Paper 7212, July 1999.

[19] Similarly, the bilateral RCA index for Korea is a measure of Korea's exports to the United States in a given product as a share of Korea's total exports to the United States relative to the world counterpart. An index greater than unity indicates that Korea is a heavy exporter in a particular sector relative to other countries that export to the United States.

[20] The latest year for which balanced trade data are available is 1998 but these data are not used in the analysis since the value of the Korean won against the dollar decreased notably as a result of the Asian financial crisis. Instead, 1997 data were used.

[21] See appendix D for a description of revealed comparative advantage and a complete table of the RCA indices.

[22] According to U.S. Department of Commerce data, Korea is among the top five U.S. semiconductor production-sharing partners. For a description of the production-sharing process, see U.S. International Trade Commission, *Production Sharing: Use of U.S. Components and Materials in Foreign Assembly Operations, 1992-1995,* Inv. No. 332-237, USITC Publication 3032, April 1997.

Table 3-4
Summary of Bilateral Revealed Comparative Advantage Indices

Product categories with potential for increased U.S. exports to Korea
Animal oils and fats
Cereals and cereal preparations
Chemical materials and products
Essential oils and perfume material, toilet and cleansing preparations
Raw hides, skins and furskins
Inorganic chemicals
Live animals chiefly for food
Machinery specialized for particular industries
Meat and meat preparations
Metalliferous ores and metal scrap
Miscellaneous edible products and preparations
Miscellaneous manufactured articles
Oil seeds and oleaginous fruit
Organic chemicals
Other transport equipment
Paper, paperboard, and pulp products
Power generating machinery and equipment
Professional, scientific and controlling instruments
Pulp and waste paper
Road vehicles (including air cushion vehicles)
Sanitary, plumbing, heating and lighting fixtures and fittings
Special transactions and commodities not classified according to kind
Tobacco and tobacco manufactures
Vegetables and fruit
Product categories with potential for increased Korean exports to U.S.
Articles of apparel and clothing accessories
Iron and steel
Metal manufactures
Rubber manufactures
Textile yarn, fabrics, and related products
Travel goods, handbags and similar products
Product categories in which both countries compete
Armored fighting vehicles and arms of war
Artificial resins, plastic materials, cellulose esters
Electrical machinery, apparatus & appliances
Office machines and automatic data processing machines
Telecommunications and sound recording apparatus
Textile fibers (except wool tops)

Source: Commission calculations, based on Statistics Canada data, calculated at the two-digit SITC level, 1997.

Sectoral Analysis

This section reviews production and trade for selected industries in the United States and Korea. The discussion also draws on a table of indicators presented at the beginning of each sector that illustrates and compares important production, trade and, to the extent possible, indicators of productivity and price and cost competitiveness.

Agriculture

In 2000, nearly 7 percent of U.S.-Korea trade was in agriculture. Korea is the fourth largest market for U.S. agricultural products, and approximately 44 percent of Korea's agricultural imports were from the United States. U.S. agriculture exports to Korea consist principally of cereals; fruits and vegetables; meat and edible offal; oil seeds and other seeds; tobacco; raw hides and skins; and wood pulp products. Korea supplied less than 1 percent of U.S. agricultural imports, primarily dairy products and cereals. U.S. agricultural exports to Korea were roughly $4 billion while U.S. agricultural imports from Korea were approximately $700 million, resulting in a trade surplus of $3.3 billion.

The U.S. and Korean agricultural industries differ significantly. For most products, U.S. industry production and the size of individual U.S. operations are much larger than the Korean counterparts. In addition, in contrast to the Korean industry, the U.S. industry benefits from an abundance of arable land and favorable climate conditions for the growing of a wide variety of crops.

Rice

Rice is a valuable field crop in the United States, accounting for about $1.3 billion in annual farm-level sales during the 1999-2000 crop year and making the United States the 11th-ranked producer. More than 12,000 farms in the United States produce rice, most of them small enterprises of fewer than 250 acres, in Arkansas and Louisiana. Rice is typically grown along with other crops, and in some cases even in combination with fish or shellfish aquaculture. Rice millers are the main market for harvested rice. A total of 56 rice millers in the United States operate 68 milling establishments and employ about 3,800 people.[23] In turn, milled rice, including imports, is supplied to the following markets (percent by quantity during 1997-99): direct food use (63 percent), processed food use (22 percent), and beer production (15 percent).

Figure 3-2
Rice: Selected industry data

Item	United States	Korea
Area harvested *(1,000 hectares)*	1,230	1,072
Total domestic consumption *(1,000 MT)*	3,865	5,200
Per capita consumption *(Kg)*	13.8	97.7
Change in per capita consumption over 1995-2000 *(percent)*	7	-10
Share of consumption imported *(percent)*	8.3	1.8
Price per Kg *(dollars)*	0.370	1.98
Milled rice		
Exports *(1,000 MT)*	2,822	0
Imports *(1,000 MT)*	321	94
Production *(1,000 MT)*	6,104	5,291
Share of production exported *(percent)*	43	near 0
Yield *(tons/hectare)*	4.96	4.94

Note.—Data are for calendar year 2000; area harvested is for crop year 2000. Consumption figure for United States is for total rice (not milled).

Sources: Production, Supply and Distribution Database, Economic Research Service (ERS), USDA; Foreign Agricultural Service (FAS), USDA; and the Korean Ministry of Agriculture and Forestry.

[23] U.S. Census Bureau, *1997 Economic Census: Industry 331212, Rice Milling*, table 3.

Korea ranks as the world's 12th largest rice producer, immediately behind the United States. Like the U.S. industry, the Korean industry consists primarily of thousands of small producers that sell to a few millers. For historical and political reasons, rice is the only grain in which Korea is self-sufficient; rice is of great cultural importance in Korean cuisine, and rice farmers are an important political base.[24]

There is little or no U.S.-Korea bilateral trade in rice. Although about 43 percent of U.S. rice production is exported–an unusually high proportion for grain–the United States has not exported rice to Korea for many years due to market access limitations and lack of price competitiveness.[25] The major markets for U.S. rice exports in recent years have been Japan and Mexico.[26] Essentially all of Korea's rice crop is consumed domestically. The United States imports rice mainly from Thailand and India, which together supplied 88 percent by value and 86 percent by quantity of all U.S. rice imports during 1995-2000. Korea supplied less than 0.05 percent of total U.S. rice imports during 1995-2000.[27]

Korea's per capita rice consumption has been in long-run decline, the result of increased consumer demand for convenience in food and other changes in eating patterns.[28] In contrast, U.S. consumption is on the rise (figure 3-2). This rise in U.S. per capita rice consumption is partly a result of the increased diversification of the U.S. population and diet, and a growing Asian-American population.

With imports, total domestic consumption of rice in Korea reached 5.2 million metric tons in 2000, about the same as the annual average between 1995 and 2000. Imports are only 1.8 percent of consumption, and take place in order to satisfy Korea's market access obligations under the WTO.[29] All of Korea's rice imports are destined for food processing uses. No imported rice is made directly available to Korean consumers.[30] Even during disastrous rains in 1998, which damaged or destroyed much of Korea's rice paddies, imports did not rise to make up the difference.[31]

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[24] U.S. Department of Agriculture, Foreign Agricultural Service (USDA, FAS), *Korea: Grain and Feed: Government Purchase Price for 2000 Rice Crop*, GAIN Report #KS0002, U.S. Embassy Seoul, Jan. 6, 2000, and USDA, FAS, *Korea: Grain and Feed Annual, 2001*, GAIN Report #KS1014, U.S. Embassy, Seoul, Mar. 30, 2001, found at Internet address *www.fas.usda.gov*, retrieved April 26, 2001.

[25] USITC staff interviews with the Director and Senior Policy Advisor, Asia and the Americas Division, FAS, USDA, Washington, DC, April 6, 2001. See also USDA, FAS, *Korea: Grain and Feed: MMA [Minimum Market Access] Rice Purchases for CY2000*, GAIN Report #KS0102, FAS, USDA, U.S. Embassy, Seoul, Sept. 14, 2000, p. 1.

[26] Official statistics of the U.S. Department of Commerce.

[27] USDA, FAS, *Korea: Grain and Feed: Government Purchase Price for 2000 Rice Crop.*

[28] For a discussion of the Westernization of the Korean diet, see USDA, FAS, *Korea: Grain and Feed Annual, 2001.*

[29] USITC staff interview with the Director and Senior Policy Advisor, Asia and the Americas Division, FAS, USDA. See also USDA, FAS, *Korea: Grain and Feed Annual, 2001.*

[30] USDA, FAS, *Korea: Grain and Feed: MMA [Minimum Market Access].*

[31] USDA, FAS, *Korea: Agricultural Situation: Korea Rice Situation 1998*, GAIN Report #KS8076, U.S. Embassy, Seoul, Sept. 21, 1998, pp. 1-3, found at Internet address *www.fas.usda.gov*, retrieved April 2001.

To satisfy WTO obligations, Korea is increasing its rice imports.[32] U.S. exporters have not benefitted from this increase because Korea only imports low-grade rice for food processing uses, a product in which the United States is not price competitive vis-a-vis other suppliers such as China.

The number of rice farms in the United States has been on a long-term decline, but the average yield per acre has been rising.[33] The rising U.S. yield is due to the efficiency of U.S. operations, which use the most current product processing and input technology. Prices in the U.S. rice market have fallen in recent years from $220 per metric ton in 1996 to an estimated $132 per metric ton in 2000.[34] The decline in U.S. prices reflects a global trend, as increased world supplies of rice have pushed prices down in many international markets.[35] Conditions in foreign markets are a major influence on U.S. producers, given the significant export orientation of the industry. Transportation costs are a disadvantage for U.S. exporters since most of the world's rice consumption and production is in Asia.

Compared to the United States, Korea has less land dedicated to rice cultivation and shrinking domestic per-capita demand for rice. As shown in figure 3-2, the average yield per hectare in the United States is 4.96 tons and in Korea is 4.94 tons, making the yields nearly equivalent. Korean Government support programs have traditionally encouraged increased acreage in rice cultivation.[36] However, with rising inventories, the Government's farm income policy is shifting toward improving quality rather than increasing quantity.[37]

Dairy

Although somewhat similar in structure, the U.S. and Korean dairy industries differ significantly in size. The U.S. dairy industry consists of thousands of family-owned and managed dairy farms and hundreds of processors and, in terms of the value of production, is second only to beef among U.S. livestock industries.[38] The Korean dairy industry consists of hundreds of farms selling milk to a much smaller number of processors. Both industries operate under market conditions heavily influenced by government programs and policies. In general, Korean dairy farms are smaller than U.S. farms, and have higher unit costs of some types of capital equipment and more labor-intensive operations. U.S. production of fluid milk, the input into processed dairy products, has been rising in volume since 1997, but declining prices in 1999-2000 caused the overall value to fall. From 1995 to 2000, production volumes increased by

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[32] USITC staff interview with the Director and Senior Policy Advisor, Asia and the Americas Division, FAS, USDA.

[33] USDA, *U.S. Census of Agriculture*, 1987, 1992, and 1997.

[34] USDA, FAS, *Korea: Grain and Feed: Government Purchase Price for 2000 Rice Crop.*

[35] USDA, Economic Research Service (ERS), "Global Prices are the Lowest in 7 Years," *Rice: Situation and Outlook Yearbook*, RCS-2000, Nov. 2000, pp. 19-20.

[36] During the period 1995-2000, the area harvested for rice rose, but yield per hectare fell. See USDA, FAS, *Korea: Grain and Feed Annual, 2001.*

[37] USDA, FAS, *Korea: Grain and Feed Annual, 2001.*

[38] USDA, ERS, "Briefing Room: Dairy," found at Internet address *www.ers.usda.gov*, retrieved April 11, 2001.

8 percent to 76 million metric tons (MT) (valued at $20.7 billion). U.S. production of cheese, butter, and nonfat dry milk all experienced growth during 1995-2000. In 2000, U.S. cheese production reached $9.6 billion, and butter and nonfat dry milk production were each valued at $1.5 billion.[39] Fluid milk production in Korea has grown 20 percent since 1998 to reach 2.438 million MT in 2000.[40] Korean production of processed milk products also rose during the period.

Figure 3-3
Dairy products: Selected industry data

Item	United States	Korea
Imports *($1,000)*	1,293,181	158,004
Exports *($1,000)*	800,484	3,950
Dairy cows *(1,000 head)*	9,190	306
Fluid milk production *(1,000 MT)*	76,370	2,438
Raw milk production cost *(dollars per Kg)*	0.27	0.42
Milk per cow *(MT)*	8.4	6.1
Consumption per capita *(Kg)*	96.2	30.4
Cheese:		
Domestic production *(1,000 MT)*	3,775	15
Share of production exported *(percent)*	1.1	0
Share of consumption imported *(percent)*	4.6	66
Consumption per capita *(Kg)*	13.9	0.64

Notes.—All figures are for 2000 except production cost, and Korean milk per cow, which are 1998 figures. Fluid use domestic consumption was used to calculate consumption per capita for fluid milk.

Sources: Statistics Canada; Production, Supply and Distribution Database, ERS, USDA; FAS, USDA, GAIN Reports #1CS0115, #KS908.

Trade does not account for a significant part of dairy sales for most countries, including Korea and the United States, because of the high perishability of many dairy products. Items that are traded include nonfat dry milk, cheese, ice cream, whey, and lactose. The principal U.S. dairy exports to Korea are cheese, whey, and ice cream. Cheese exports to Korea reached $9 million in 2000, or 7 percent of total U.S. cheese exports. Whey exports to Korea reached $8.6 million in 2000, or 6 percent of total U.S. whey exports. The area of greatest recent export growth has been processed foods. Ice cream, for example, enjoys a growing market in Korea, which since 1996 has been the 6th largest market for U.S. ice cream exports.[41] In 2000, U.S. ice cream exports to Korea totaled $4.2 million and represented 5 percent of the value of total U.S. ice cream exports. Eight out of 10 premium ice cream sellers in Korea are U.S. companies. These firms enjoy a reputation for high quality and demand higher prices when compared with sellers of domestically produced ice cream.[42]

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[39] USDA, ERS, *Livestock Dairy and Poultry Situation and Outlook*, LPD-M-81. All data are producer-level prices.

[40] USDA, FAS, *Korea: Dairy and Products Annual.*

[41] USDA, FAS, *Korea: Dairy Annual Report*, GAIN Report #KS9088, U.S. Embassy, Seoul, Oct. 20, 1999, p. 2.

[42] USDA, FAS, *Korea: Dairy and Products Annual*, p. 2.

As Korean per capita income has risen, the Korean diet has diversified. For example, over 1995 to 2000, Korean per capita consumption of fluid milk increased by 26 percent and cheese 257 percent,[43] and has resulted in increased dairy imports.[44] Cheese imports rose by 150 percent from 12,000 MT in 1995 to 30,000 MT in 2000. But the U.S. share of Korea's imports, by quantity, fell by two-thirds to 9 percent in 2000. Australia and New Zealand now dominate the Korean import market for cheese products.[45] At the same time, Korean cheese production has grown from near zero in 1996 to almost 15,450 MT in 2000. Production of nonfat dry milk in Korea declined 47 percent to 16,327 MT from 1996 to 2000, while imports more than quadrupled to 4,263 MT between 1995 and 2000. Imports had been restricted by a tariff-rate quota for several years, but the quota was relaxed in mid-2000 following a WTO ruling against Korea.[46]

The U.S. competitive advantages include a large, affluent domestic market, a developed system of distribution and infrastructure (e.g., railroads and refrigeration), and the use of the most current technology in dairy farming and product processing. Rationalization and consolidation in the industry have led to fewer farms and processors, while productivity and efficiency continue to rise.[47] For the United States, government intervention comes mainly in the form of price policies, which raise domestic prices above international price levels, reducing U.S. competitiveness on international markets. Nevertheless, U.S. dairy products such as cheese are more price competitive than those of Korea. The average price of imported U.S. cheese in Korea in 1999 was roughly 56 percent the price of locally manufactured cheese even after accounting for the 38 percent ad valorem tariff.[48]

In addition to a lower domestic demand for dairy products, the Korean dairy industry is less efficient in terms of raw milk production, and more costly than its U.S. counterpart (figure 3-3).[49]

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[43] Commission calculations based on data from USDA Production, Supply, and Distribution Database.

[44] USDA, FAS, *Korea: Dairy and Products Annual*, p. 3.

[45] Ibid, p. 3.

[46] Ibid, p. 2.

[47] Janet A. Nuzum, International Dairy Foods Association, USITC hearing testimony for USITC Inv. No. 332-421, *Foreign Trade Barriers in Processed Food and Beverage Sectors*, p. 2, May 22, 2001.

[48] USDA, FAS, *Korea: Dairy Annual Report*, GAIN Report #KS0115, p. 2. However, major competitors, Australia and New Zealand, have a significant price advantage over U.S. products. The U.S. price per kilo is $4.17, whereas the price for Australia is $2.39 and the price for New Zealand is $2.29.

[49] See also USDA, FAS, *Korea: Dairy Annual Report*, GAIN Report #KS0115, p. 3.

Beef[50]

The United States is the world's largest producer of beef, accounting for 25 percent of the global output in 2000, about twice the total of its closest competitor, Brazil.[51] Other large beef producers include the European Union and China. The U.S. beef industry is concentrated in the western rangelands and the Corn Belt. It consists of about 830,000 operations with beef cattle,[52] selling livestock to hundreds of processors for the production of beef.[53] The Korean beef industry is smaller than its U.S. counterpart (figure 3-4), accounting for about 0.5 percent of world production in 2000. The Korean system is more labor intensive and individualized than its U.S. counterpart, with smaller average herd sizes (less than 10 versus 35 to 40 in the United States) and different feeding and exercise practices.[54] Also, retail beef distribution in Korea has historically been state controlled, with domestically produced and imported beef sold in separate, specified stores.[55]

Figure 3-4
Beef: Selected industry data, 2000

Item	United States	Korea
Imports *(1,000 MT)*	1,375	280
Exports *(1,000 MT)*	1,141	0
Domestic Production *(1,000 MT)*	12,300	278
Domestic Consumption *(1,000 MT)*	12,481	545
Percent of production exported based on quantity	9	0
Percent of consumption imported based on quantity	11	51
Per capita consumption *(Kg)*	44.6	11.1
Change in per capita consumption over 1995-2000 *(percent)*	([1])	20

[1] Indicates virtually no change.
Sources: FAS, USDA; ERS, USDA; and the Korean Ministry of Agriculture and Forestry.

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[50] By the time beef reaches the retail consumer, it has been processed into a variety of cuts. However, separate production data on those varieties are not available and so the only product discussed for this sector is beef. All data in this sector also include veal, which accounts for a small share of the total beef and veal category.

[51] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, March 2001, found at Internet address *www.fas.usda.gov*, retrieved April 26, 2001. Beef production follows a cattle cycle characterized by the accumulation and liquidation of cattle inventories, generally occurring in response to changes, or anticipated changes, in profits. This cycle contributes to an increase in beef supply when prices and profits are low, as cattle producers liquidate their inventories. See USITC, *Cattle and Beef: Impact of the NAFTA and Uruguay Round Agreements on U.S. Trade*, Investigation No. 332-371, pub. 3048 (July 1997), chapter 2.

[52] The USDA defines an operation with cattle as a ranch/farm having one or more animals on hand at any time of the year. Dairy cow operations are not included in this figure. USDA, National Agricultural Statistics Service (NASS), *Cattle*, Jan. 26, 2001, p. 1.

[53] In 2000, there were 738 federally inspected slaughter plants for cattle and 314 for calves. USDA, NASS, *Livestock Slaughter 2000 Summary*, March 2001, p. 84, found at Internet address *http://usda.mannlib.cornell.edu*, retrieved June 11, 2001.

[54] USITC interview with Chuck Lambert, National Cattlemen's Beef Association, June 5, 2001. Native Korean cattle are of a unique variety commonly known as "Hanwoo," which yield a high grade of meat and for which there is a strong domestic demand.

[55] USDA, FAS, *Korea: Livestock and Products Annual, 2000*, GAIN Report #KS0090, U.S. Embassy, Seoul, August 2, 2000, found at Internet address *www.fas.usda.gov,* retrieved April 2001. The number of outlets for domestic beef is about 10 times the number of outlets for imported beef.

Although there has been a general long-run decline in the number of U.S. operations, attributable to increased urbanization and a consolidation of all farming operations, production has risen slightly.[56] U.S. beef imports have been rising more quickly than production and have captured an increasing share of the U.S. market. During 1995-2000, imports rose 47 percent to 1.4 million MT. The largest sources of U.S. beef imports are Canada, Australia, and New Zealand.[57] The United States does not import beef from Korea. During 1995-2000, total U.S. domestic consumption rose 6.4 percent to 12.5 million MT in 2000.

U.S. exports have also been rising and have accounted for an increasing share of domestic production. The largest export markets for U.S. beef are Japan, Mexico, Korea, and Canada. While the quantity of U.S. exports to all of these markets grew during 1995-2000, the value of exports to both the Japanese and Korean markets dropped significantly in 1998, resulting mainly from weakened consumer confidence in Japan and Korea and decreased demand for imported goods, including beef.[58] Thus, there were substantial reductions in the prices received by U.S. exporters. Asian consumer confidence (and demand for U.S. beef) has since returned and U.S. export prices have begun recovering to previous levels.

Per capita beef consumption in Korea increased by 20 percent during 1995 to 2000, and nearly doubled over the past decade. This provides a striking contrast to the near zero growth in the United States. Apparent consumption of beef in Korea increased 31 percent to 545,000 MT during the same period. This rise in Korean consumer demand increasingly is met by imports, while domestic production has declined. The cattle and beef industries in Korea have reportedly been contracting because of concerns over potential adverse effects from Korean trade liberalization measures.[59] Korean beef imports reached a record 280,000 MT in 2000. The United States accounted for 57 percent of the total and Australia accounted for 34 percent. Korea is not self-sufficient in beef production and does not export beef.

Competitive factors that work to the advantage of U.S. producers include an abundance of livestock grazing areas and feed supplies, a large domestic market, and a sound system of distribution and infrastructure (e.g., feedlots, railroads). Quality is another advantage of U.S. beef producers as effective institutional controls sustain the health of U.S. cattle herds and help to keep inventory free of foot and mouth and mad cow diseases.

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[56] H. Ritchie et al., "Time is now for beef industry to consider change," *Feedstuffs*, vol. 69, No. 5, 1997, p. 1.

[57] USDA, FAS, *Canada: Livestock and Products: Contraction Phase of Cattle Cycle; Hog and Pork Expansion*, GAIN Report #CA0009, U.S. Embassy, Ottawa, February 2, 2000, found at Internet address *www.fas.usda.gov*, retrieved April 2001.

[58] USDA, FAS, *Korea: Livestock Annual, 1998*, GAIN Report #KS8067, U.S. Embassy Seoul, August 4, 1998; and USDA, FAS, *Japan: Livestock Annual Report, 1998*, GAIN Report #JA8061, U.S. Embassy, Tokyo, August 4, 1998, found at Internet address *www.fas.usda.gov*, retrieved April 2001.

[59] USDA, FAS, *Korea: Livestock and Products Annual 2000.* For example, the Jan. 1, 2001 elimination of Korea's tariff-rate quota on beef imports, and the removal or modification of restrictions on the retail sale of imported beef scheduled for September 10, 2001.

The Korean beef industry is constrained from growth by a limited supply of available, productive land. In addition, the cattle inventory recently declined after an outbreak of foot and mouth disease, which began afflicting the herds in 2000. This problem is reportedly coming under control, with all major producing areas now free of quarantine and a second round of vaccinations to occur soon, a year after which the country may be declared disease-free.[60]

Fruits and Vegetables[61]

The U.S. fruit and vegetable sector includes numerous industries that vary by product, firm size, and geographic area. The United States is a leading global producer of many fruits and vegetables, including such items as tomatoes, carrots, mushrooms (2nd largest for each), and potatoes (4th largest).[62] There are thousands of U.S. raw product producers and processors of these items. The producers range in size from small, family-operated farms to large corporate-size growing operations. Processors range in size from small, regional operations to large, multinationals and marketers of well-known brand-name products. In Korea, the fruit and vegetable sector is significantly smaller than in the United States, with far fewer growers and processors.

Figure 3-5
Fruits and vegetables: Selected industry data

Item	United States	Korea
Imports *(million dollars)* 2000	9,903	640
Exports *(million dollars)* 2000	8,535	341
Production:		
Fruit *(1,000 MT)* 1999	32,600	2,385
Vegetable *(1,000 MT)* 1999	38,850	31,117
Total area harvested *(million acres)* 1999	6.5	1.4

Note.—Trade data based on USITC estimates using HS chapters 7,8, and 20 and SITC-05.

Sources: Statistics Canada, official statistics of the U.S. Department of Commerce, FAS, USDA; ERS, USDA; and the Korean Ministry of Agriculture and Forestry.

U.S. fruit production rose 12 percent during 1995-99 to reach $12.2 billion.[63] Citrus accounted for almost half (by volume) of all fruit produced during the period, and about 20 percent of the total value of U.S. fruit production. While the quantity of U.S. vegetable production declined from 1995 to 1999, the actual value grew by 2 percent. Chief among the products in this sector are potatoes, tomatoes, and lettuce.

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[60] USDA, FAS, *Korea: Livestock and Products: Status of FMD Outbreak in Korea*, GAIN Report #KS0084, July 20, 2000, found at Internet address *www.fas.usda.gov,* retrieved April 12, 2001.

[61] This sector includes fresh, frozen, canned, and otherwise prepared or preserved fruit and vegetable products. HS chapters 7, 8, and 20 encompass almost all of these products.

[62] USDA, ERS, Market and Trade Economics Division, *Fruit and Tree Nuts Situation and Outlook Yearbook*, Market and Trade Economics Division, October 2000; *Vegetables and Specialities Situation and Outlook Yearbook*, July 2000.

[63] Not including melons or tomatoes, which are not considered fruits by the USDA.

Citrus fruits, mainly oranges and tangerines, comprise Korea's largest fruit-producing sector, accounting for roughly 25 percent of the total quantity of fruit produced during 1995-99.[64] Korean citrus production increased 4 percent from 1995 to reach 639,000 MT in 2000. Most citrus is consumed in a fresh form, and some is also processed into fruit juice. Production of frozen concentrated orange juice, a major item, declined by 30 percent from 1995 to 1999, reportedly due to strong competition from sales of other drink products.[65] During 1995-99, Korean potato production ranged from a high of 731,000 MT in 1997 to a low of 562,000 MT in 1998. Unfavorable weather conditions and imperfect market signals reportedly explain this wide variation.[66] Shortfalls in some years, such as 1999, are generally made up by increased imports under Korea's potato tariff-rate quota.[67]

Total U.S. imports of fruit grew 20 percent from 1995 to reach 7.1 million MT in 1999. Bananas, at 5 million MT, constitute the majority of fruit imports, while tomatoes are the most significant imported vegetable, averaging a relatively steady 1.6 million MT during 1995-99. Korea is not a significant supplier of fruits or vegetables to the U.S. market. U.S. exports of fruit and preparations were 3.4 million MT in 1999, slightly less than the total for 1995. Fruits exported in significant amounts in 1999 included fresh apples and grapefruit. By volume of trade, lettuce, onions, and tomatoes are the most significant exported vegetables. The leading U.S. export markets for both fruits and vegetables are Japan and Canada. Korea is not a significant export market for U.S. fruits and vegetables.

Korean fruit and vegetable imports increased by 130 percent (in value terms) over 1990-1997, then sharply declined during the crisis. Korean imports climbed from $242 million in 1990, to $476 million in 1995, and then fell to $339 million in 1998. These trends, not surprisingly, parallel that of Korean per capita income during the period. As in the United States, bananas constitute the majority of Korean fruit imports. Oranges, particularly California Valencias, make up the bulk of Korea's fresh citrus imports, which doubled between 1995 and 1999. Imports of frozen concentrated orange juice fell from 1995 to 1999 in the face of competition from other fruit juices, soft drinks, and other drinks that are popular in Korea's increasingly westernized society. Fresh potatoes and frozen potato products are another growing import item. While frozen potatoes have long been a significant import, fresh potato imports are also growing rapidly.[68]

Korea's exports of fruits and vegetables during 1995-99 averaged 84,900 MT. Important export items in 1999 included chestnuts (14,300 MT), canned mushrooms (476 MT), and tomatoes, exports of which surged to more than 7,000 MT in 1999 from

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[64] USDA, FAS, *Korea: Citrus Annual, 2000*, GAIN Report #KS0118, U.S. Embassy, Seoul, Nov. 1, 2000, found at Internet address *www.fas.usda.gov*, retrieved April 1, 2001.

[65] Ibid.

[66] USDA, FAS, *Korea: Fresh Potato Market Prospect, 2000*, GAIN Report #KS0009, U.S. Embassy, Seoul, Feb. 7, 2000, found at Internet address *www.fas.usda.gov*, retrieved April 1, 2001.

[67] USDA, FAS, Korea: Fresh Potato Market. See chapter 4 of this report for more information on this topic.

[68] Potatoes and potato products are affected by classification issues and subject to a tariff-rate quota. See chapter 4.

just 371 MT in 1995. The rise in tomato exports was attributed to a devaluation of the local currency and to unfavorable weather conditions during the production season in Japan, a major export market for Korean tomatoes. This rise is not expected to be sustained.[69]

Competitive advantages of the U.S. fruit and vegetable industries include vast areas of arable land and a suitable climate for production of a variety of fruits and vegetables, and extensive technological development of production and harvesting equipment and practices. In addition, production and distribution networks of water and energy, together with established channels of distribution to wholesale and retail markets, help to moderate the costs of growing, processing, and marketing fruit and vegetable products in the United States. By comparison, Korea is characterized by a limited amount of arable land, a less temperate climate for growing fruits and vegetables, and a much smaller volume of production available for export. However, the Korean Government provides financial support to the industry, and encourages area reductions and crop switching in order to produce higher quality fruit and reduce the cyclical pattern of production observed in recent years.[70] For example, greenhouse production of oranges is small but is growing, due in part to government assistance.[71] In addition, the Korean industry likely benefits from lower labor costs than its U.S. counterpart.[72]

Petroleum[73]

The United States is one of the world's major consumers of crude petroleum and a major producer and consumer of refined petroleum products. The United States accounts for an average of 9 percent of the world's production and 26 percent of consumption of crude petroleum. With worldscale refineries,[74] the United States also accounts for 22 percent of the world's production and 26 percent of the world's consumption of refined petroleum products, such as motor fuels and fuel oils. The U.S. crude and refined petroleum products industries employed an annual average of

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[69] USDA, FAS, *Korea: Agricultural Situation, Tomato Exports to Japan in 1998*, GAIN Report #KS9022, found at Internet address *www.fas.usda.gov,* retrieved April 26, 2001.

[70] In Korea, odd-numbered years are peak years in a cyclical production pattern that has emerged since the early 1990s. Prices move in a countercyclical pattern. Thus, the total value of citrus production reached a record 607.9 billion won in 1996, declined to 515.8 billion won in 1998, and was only 325.7 billion won in 1999. Yields in overall citrus production have been stagnant at about 25 MT per harvested hectare.

[71] Greenhouse production is much less susceptible to seasonality and weather conditions but incurs higher energy costs. Between 1995 and 1999, greenhouse production increased by 90 percent to 31,612 MT, and yields per hectare rose.

[72] Wage data show that the overall average monthly wage for 1998 in the United States was $2,045, compared to $1,018 in Korea. International Labor Organization, *Yearbook of Labor Statistics, 1999*, p. 839 and p. 847.

[73] This sector includes crude petroleum and refined petroleum products.

[74] A worldscale refinery is one which can process 60,000 barrels or more of crude petroleum per day to produce a wide range of refined products using simple as well as more sophisticated and complex refining processes.

1.5 million workers during 1995-2000. In contrast, Korea does not produce, and has no reserves of, crude petroleum (figure 3-6). Korea has no worldscale refineries, and accounts for about 2 percent of the world's production of refined petroleum products and less than 2 percent of the world's consumption of both crude petroleum and refined petroleum products.

Figure 3-6
Petroleum: Selected industry data, 2000

Item	United States	Korea
Crude petroleum		
Imports *(million barrels per day)*	8.9	2.2
Exports *(barrels per day)*	110,000	0
Reserves *(billion barrels)*	21	0
Production *(million barrels per day)*	5.8	0
Refined petroleum products		
Imports *(thousand barrels per day)*	2,200	482,000,000
Exports *(thousand barrels per day)*	990	803
Number of operating refineries	158	6
Total refining capacity *(million barrels per day)*	17.5	2.5

Source: USITC estimates based on data from the U.S. Department of Energy and the American Petroleum Institute.

Historically, the United States has maintained a trade deficit in terms of crude petroleum. U.S. imports of crude petroleum began to rise in 1985 when declining world crude petroleum prices resulted in reduced profitability of certain high-cost U.S. stripper wells, many of which were then shut down. As a result, U.S. crude petroleum imports accounted for more than 60 percent of total consumption in 2000. The largest suppliers of crude petroleum to the U.S. market are Canada, Mexico, Venezuela, and Saudi Arabia. The largest suppliers of refined petroleum products (primarily motor fuels and fuel oils) to the U.S. market are Venezuela, Canada, Saudi Arabia, and Nigeria. Korea accounted for less than 1 percent of total U.S. imports of refined petroleum products during the period.

U.S. exports of crude petroleum were prohibited from 1973 to 1996, except as approved by the U.S. Government. Canada has been the only consistent market for these exports, as part of a commercial exchange agreement between U.S. and Canadian refiners approved by the Secretary of the U.S. Department of Energy. In 1996, President Clinton determined that allowing exports of Alaskan North Slope crude was in the national interest, thus ending the ban on crude exports. However, the President can impose new export restrictions in the event of severe crude petroleum supply shortages. Canada remains the major market for U.S. exports of Alaska North Slope crude with small shipments, amounting to less than 1 percent of total exports, going to Taiwan and Korea. U.S. exports of refined petroleum products are minimal, accounting for less than 5 percent of total production and less than 6 percent of the world's total exports of refined petroleum products. Mexico and Canada are the primary markets for U.S. exports of refined petroleum products, with Korea accounting for less than 1 percent.

The U.S. petroleum industry, which is operated primarily by large, multinational energy companies that explore, produce, refine, and distribute product, is the world's leader in terms of R&D for technologies for drilling, producing, and refining crude petroleum as well as distributing product via pipelines and tankers. In particular, the U.S. industry has developed production methods that extend the production life of wells and is the world's leader in terms of environmentally sound refining methods.

In comparison, Korea relies totally on imports of crude petroleum to feed its small refineries. Korean imports of crude petroleum and refined petroleum products are primarily from OPEC members. Korea exports refined petroleum products mainly to China, Japan, and Taiwan.

The Korean petroleum industry is under the purview of the state-owned Korea National Oil Corporation which has the responsibility for importing crude petroleum as well as operating refineries. To develop its refining industry, Korea has undertaken a restructuring plan since 1997 to form joint ventures with large multinational petroleum companies to increase refining capacity in an effort to supply more of the Asian market. Korean demand for crude petroleum is expected to grow by 5 percent in 2000 as capital investments in refineries using heavy oil expands.[75] Korea has formed joint ventures with petroleum companies in France, the United Kingdom, the United States, and the United Arab Emirates.

Iron and Steel Products[76]

The United States and Korea are two of the world's largest producers of steel, but their industries differ significantly in structure and trade. The U.S. industry, the world's third-largest crude steel producer, is diversified among several highly capital-intensive, large-scale, integrated producers that convert iron ore into crude steel in blast furnaces;[77] numerous less capital-intensive, smaller-scale, minimill producers that melt scrap steel in electric-arc furnaces;[78] and numerous stand-alone, re-rolling facilities that purchase steel inputs from outside sources. The Korean industry, about two-fifths the size of the U.S. industry, is highly concentrated, being dominated by integrated-based Pohang Iron and Steel Company (POSCO),[79] which produced over 61 percent of the nation's crude steel output in 1999.[80]

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[75] Industry sources.

[76] Iron and steel products include pig iron, ferroalloys, directly reduced iron, ferrous waste and scrap, ferrous granules and powder, and steel mill products (both semifinished and finished).

[77] The integrated steelmaking process begins with iron ore and, usually, coal as the primary raw materials. After processing, these raw materials are transformed into iron, which is converted to crude steel prior to being shaped into finished products.

[78] Nonintegrated minimill producers purchase semimanufactured products or steel scrap as their primary inputs.

[79] POSCO foreign ownership, as of June 30, 2000, was 41.9 percent, according to Form F-3 filed September 22, 2000 with the Securities and Exchange Commission. The Korea Stock Exchange announced that POSCO foreign ownership now exceeds 50 percent, as reported in *Korea Inc News*, "Foreigners' Stock Ownership Doubles Since Financial Crisis," found at Internet address *www.koreainc-news.com*, retrieved June 26, 2001.

[80] Compiled from official statistics of the International Iron and Steel Institute.

Figure 3-7
Iron and steel products: Selected industry data

Item	Year	United States	Korea
Domestic production of raw steel *(million MT)*	2000	101.0	43.1
Number of integrated steel-making firms	2000	13	1
Number of minimill steel-making firms	2000	65	9
Labor costs, integrated firms *(U.S. $ per MT shipped)*[1]	1998	97 to 174	19
Labor costs, minimill firms *(U.S. $ per MT shipped)*[2]	1998	47 to 72	([3])
Pretax profit margin, integrated firms *(percent)*[1]	1998	-3.9 to +6.6	12.5
Pretax profit margin, minimill firms *(percent)*[2]	1998	7.0 to 11.6	([3])
Apparent consumption, finished steel *(million MT)*	2000	114.9	38.6
Share of production exported, finished steel *(percent)*	1999	5	30
Import penetration, finished steel *(percent)*	1999	22	17

[1] United States: USX Corp., Bethlehem Steel, LTV Corp., National Steel, AK Steel, Ispat Inland, and Wheeling-Pittsburgh. Korea: POSCO.
[2] United States: Northwestern, Nucor Steel, Ameristeel, and Chaparral Steel.
[3] Not available.

Sources: International Iron and Steel Institute, "Crude Steel Production in December 2000," March 30, 2001; P.F. Marcus and K.M. Kirsis, "Chapter RRR-3, Global Steel Mill Product Matrix, 1987-1999," *Global Steel Mill Product Mix, 1987 to 1999, 2010 Forecast*, Core Report RRR, World Steel Dynamics, Feb. 2001; Marcus, Kirsis, and D.F. Barnett, *Opportunities and Risks in the New Millennium, Steel Strategist #26*, World Steel Dynamics, July 2000, and A. Wilson, "Market Share for Minis Growing Steadily," Steelmaking & Finishing, special report, *American Metal Market*, Aug. 10, 2000.

The U.S. steel industry has been much more open to FDI than the Korean industry, as foreign firms have sought to acquire U.S. technology and market access through buyouts, joint ventures, and strategic alliances. Likewise, the U.S. industry has not historically sought to expand abroad, partly due to lack of capital, but some firms have recently sought joint ventures and acquisitions in attempts to garner market access and to potentially reap cost savings.[81] In contrast, the Korean industry has made significant joint-venture and down-stream investments worldwide, but historically has not received significant FDI, until recently, with the scaling back of foreign-ownership restrictions.

Korea's steel industry is much more export-oriented than the U.S. industry, exporting 30 percent of domestically produced steel mill products, compared to 5 percent for the United States (figure 3-7). Korea's geographical location and its industry's operational ties with firms in East and Southeast Asia and on the West Coast of the United States are in its favor when exporting to these destinations. U.S. imports from Korea are almost exclusively rolled steel mill products, and POSCO provides one-half of the hot-rolled, flat-product inputs for its U.S. joint venture.[82] In contrast, the predominant U.S. export to Korea is ferrous waste and scrap, reflecting the Korean steel industry's extensive reliance on outside scrap sources. However, U.S. scrap exports to Korea were dampened somewhat in 2000 as higher won-denominated

[81] Bagsarian, "The Lessons Learned from Overseas Partnerships," *New Steel*, Dec. 2000, found at Internet address *www.newsteel.com*, retrieved Mar. 30, 2001.
[82] Bagsarian, "The Lessons Learned from Overseas Partnerships."

prices for U.S. scrap compared to Asian sources of scrap prompted Korean scrap buyers to diversify import sources, and as the Korean Government encouraged steel mills to consume more domestic scrap.[83]

Although the U.S. steel industry historically has been a global leader in sector productivity and innovations, both integrated and minimill producers' costs in the United States are considered by one independent source to be high by world standards.[84] For example, U.S. minimills' ferrous scrap costs are higher than those of Japanese and Western European competitors, wage rates are higher than in many other countries, and electric power costs have increased in recent years. Recently, profit margins have been eroded by declining product prices and rising energy costs, particularly for integrated producers. Likewise, integrated mills were forced to operate at suboptimal levels, whereas some minimills were forced to shut down some steelmaking operations due to regional electricity shortages.[85] In recent years, the U.S. industry has undergone numerous production cutbacks, facilities closures, deferred capacity expansions, bankruptcies, and consolidations.[86]

Unlike its U.S. counterparts, integrated-based POSCO has reportedly outperformed Korean minimill-based firms since the 1997 currency devaluation. According to independent analysts, POSCO's won-denominated costs were driven down to levels among the lowest worldwide as some of its input costs declined and as it implemented a severe cost-cutting program, offset reduced domestic shipments with additional foreign deliveries, and improved its product mix.[87] Although allegedly benefitting from government aid in the past,[88] POSCO reportedly emphasized profitability instead of market share, improved operating efficiency, and spurned debt-financed expansion.[89] Conversely, Korean minimills were widely reported to have incurred sizeable losses since 1997-98, due in part to relatively high won-denominated prices for imported ferrous scrap. Several were forced into bankruptcy and consolidations, despite initial government efforts to assist financially ailing firms.[90]

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[83] Pui-Kwan Tse, "The Mineral Industry of the Republic of Korea," *Minerals Yearbook, Vol. III, Area Reports, International, Minerals Industries of Asia and the Pacific*, U.S. Geological Survey, 1998, pp. 15.1 to 15.7.

[84] P.F. Marcus, K.M. Kirsis, and D.F. Barnett, "USA Overview," *Opportunities and Risks in the New Millennium, Steel Strategist #26*, World Steel Dynamics (WSD), July 2000, pp. 15-17.

[85] Various U.S. steel firms' 10-K and 10-Q financial statements.

[86] See for example, Scott Robertson, "Steel Producers and Other Sectors Hit," *American Metal Market*, May 15, 2001, found at North American Steel, *www.amm.com*, retrieved June 14, 2001.

[87] Marcus, Kirsis, and Barnett, "South Korean Steel Industry," *Opportunities and Risks*, pp. 165-168.

[88] POSCO was originally founded as a parastatal firm to provide a steady supply of low-cost, finished steel to Korea's growing automobile, shipbuilding, and other export-oriented industries. "Boom or Bust, the Growth of the Korean Steel Industry," *Steel Times International*, Jan. 1998, pp. 31-34.

[89] W. Bello, "Rethinking Asia, the Perils of Privatization," *Far Eastern Economic Review*, Mar. 4, 1999, p. 49.

[90] See for example, "Hanbo Steel Gets Bailout," *American Metal Market*, Jan. 30, 1997, "Crisis in South Korean Steel," found at Internet address *www.amm.com*, retrieved Apr. 3, 2001.

Textiles, Apparel, and Leather Goods[91]

The United States is the world's largest importer of textiles, apparel and leather goods, most of which come from countries with much lower production costs. The overall U.S. trade deficit in these goods widened by $29 billion during 1995-2000 to $78 billion, as import growth of 53 percent to $99 billion outpaced export growth of 36 percent to $21 billion. For textiles and apparel alone, the overall U.S. trade deficit widened by $25 billion to $59 billion in 2000 (figure 3-8).[92] The recent pattern of U.S. trade with Korea in this sector of reduced U.S. export levels and increased U.S. import levels largely reflected the effects of the financial crisis of 1997-98, as weak economic activity in Korea led to reduced demand for foreign goods and increased efforts to boost exports to earn foreign exchange. At the same time, the significant devaluation of the Korean won effectively reduced U.S. dollar prices of Korean goods in the U.S. market, but increased U.S. export prices in the Korean market.[93]

Figure 3-8
Textiles, apparel, and leather goods: Selected industry data, 2000

Item	United States	Korea
Textiles and apparel:		
Shipments *(million dollars)*	[1]170,000	[1]30,000
Total exports *(million dollars)*	19,238	[1]18,700
Total imports *(million dollars)*	78,692	[1]5,100
Trade balance *(million dollars)*	(59,454)	[1]13,600
Percentage of shipments exported	11.32	[1]62.33
Employment Information (1999):		
Textile production workers *(1,000 persons)*	471.6	179.3
Average weekly textile mill wages *(dollars)*	442.13	200.98
Apparel production workers *(1,000 persons)*	548.1	111.0
Average weekly apparel wages *(dollars)*	334.50	158.44
Leather goods production workers *(1,000 persons)*	57.0	41.1
Average weekly leather goods wages *(dollars)*	363.15	175.35

[1] Preliminary data or partly estimated by the Commission.

Note.—Data on U.S. employment obtained from National Current Employee Statistics Public Query Database, available at *www.bls.gov/ceshome.htm.* Textile data are from SIC 22, apparel data are from SIC 23, leather goods data are from SIC 31. Data on Korean employment obtained from *1999 Report on Mining and Manufacturing,* National Statistical Office, Republic of Korea, pp. 417-423. Textile data are from code D17, apparel data are from code D18, leather goods data are for code D19.

Sources: U.S. Bureau of Labor Statistics; U.S. Department of Commerce; United Nations Trade Database; and *Korea Statistical Yearbook 2000,* Dec. 2000, Korea National Statistical Office.

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[91] U.S. import and export data are in terms of the Commission's GTAP product groups No. 27 (textile fibers except raw cotton and wool; textiles; and certain knitwear), No. 28 (other apparel), and No. 29 (leather and leather goods such as footwear). Korean trade data are in terms of SITC codes 26 (textile fibers except raw cotton and wool), 61 (leather and leather goods), 65 (textiles), 83 (luggage and similar goods), 84 (apparel), and 85 (footwear).

[92] The overall U.S. trade deficit in leather and leather goods, such as footwear, widened by $3.7 billion over 1995-2000 to $18.6 billion.

[93] Charles Bremer, Director, International Trade, American Textile Manufacturers Institute, written submission to the Commission, May 17, 2001, and testimony before the Commission, May 17, 2001.

The Korean textile and apparel sector is more export-oriented than its U.S. counterpart and exports an estimated 62 percent of domestic production, compared with an estimated 11 percent for the United States (figure 3-8). U.S. textile and apparel firms face intense competitive pressures in the domestic market, especially from imports, which have led to considerable downward pressure on prices. U.S. imports of textiles and apparel rose by 62 percent during 1995-2000 to $78.7 billion, and they are likely to continue to grow as U.S. quotas on such imports are phased out by 2005.[94] In contrast, U.S. industry shipments were flat and output declined by 12 percent during 1995-2000, a period of strong economic growth. U.S. textile mills face shrinking domestic markets for their yarn and fabric output because of growing imports of these goods and such end-use goods as apparel and home textiles (e.g., towels), which often contain foreign inputs. Imports now supply most of the U.S. apparel market and a growing share of home textiles demand. To adjust to competitive conditions in the domestic market and the prospect of increased import competition in the future, many U.S. textile and apparel firms have restructured and consolidated operations, reduced employment levels, shifted production from commodity goods to value added or specialty goods, and formed quick response and just-in-time manufacturing and distribution systems with suppliers and customers. Many apparel firms also use outsourcing, offshore assembly operations, and global sourcing of finished garments.

The U.S. footwear market is dominated by imports, which rose by 24 percent during 1995-2000 to $15 billion and now supply at least 90 percent of footwear sales by quantity. Almost two-thirds of the footwear sold domestically comes from China, whose low wages have contributed to its market dominance. U.S. producers have adjusted to import competition through extensive restructuring and global sourcing, and they generally compete on such nonprice factors as brand names, product quality and differentiation, and support services.[95] As such, U.S.-made footwear generally is minimally substitutable for imports.

Korea has an established and relatively large infrastructure to produce these goods, especially textiles and apparel, which has played a major role in the development of the national economy. The textile and apparel industries are highly export-oriented and heavily weighted toward manmade fibers, reflecting government efforts to promote the development of the chemical industry in the 1970s. While the textile and apparel industries have declined in relative importance in Korea's economy, they still are a major source of economic activity, generating 14 percent of total manufacturing exports in 1998, 15 percent of manufacturing jobs, and 8 percent of manufacturing output.[96] Korean shipments of textiles and apparel grew by 13 percent during 1995-2000 to about $30 billion, while the Korean trade surplus in such goods reached an estimated $13.6 billion in 2000 (figure 3-8).

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[94] The 1995 WTO Agreement on Textiles and Clothing calls for the phaseout of import quotas on textiles and apparel from WTO countries, including Korea, over a 10-year transition period ending on January 1, 2005.

[95] Mitchell J. Cooper, Counsel, on behalf of the Rubber and Plastic Footwear Manufacturers Association, Washington, DC, prehearing statement to the Commission, Apr. 17, 2001, and testimony before the Commission, May 17, 2001.

[96] Korean Federation of Textile Industries, "The Textile Industry: Building the National Economy and Leading Globalization," found at Internet address *http://kofoti.org*, retrieved Mar. 20, 2001.

U.S. textile mills rank among the most productive in the world in making high-volume yarns, fabrics, and home textiles, because much of their investments over the years have been in high-speed, automated technology. To adjust to competitive conditions in domestic and foreign markets, U.S. mills have invested in new production, information, and service technologies to further improve productivity, customer service, and product diversification and differentiation. Some U.S. fabric firms have invested in production in Mexico to benefit from NAFTA preferences, along with lower operating costs and closer proximity to their apparel-manufacturing customers. In an effort to regain some of the apparel fabric market, some mills now offer their apparel customers a "full package" program, in which the mills use their own fabric to produce or outsource production of garments to customer specifications. The loss of a portion of the textile, apparel and leather goods market is largely the result of high production costs, particularly high labor costs. For example, U.S. labor costs are approximately double those of Korea (figure 3-8). As a result, many U.S. apparel firms have expanded their global sourcing, particularly their use of assembly operations in Caribbean Basin Economic Recovery Act (CBERA) countries and Mexico which offer low-cost labor to perform sewing tasks. The proximity of these countries to suppliers and markets in the United States also enables U.S. firms to have greater management control over production and obtain quicker turnaround than those firms that import from Korea and other Asian countries. U.S. textile and apparel firms are expected to benefit from the newly enacted Trade and Development Act of 2000, which authorizes preferential access to the U.S. market for imports of apparel made in eligible CBERA and sub-Saharan African countries from U.S. yarns and fabrics.

The relative decline of Korea in the U.S. market for sector goods in the 1990s reflected limited quota growth for textiles and apparel, rising operating costs, labor shortages, and the relocation of Korean production facilities to, and increased competition from, lower cost producing countries, especially China.[97] Nevertheless, Korea ranks among the world's largest producers and exporters of textiles and apparel. In 1997, Korea had the seventh-largest textile production base in the world, and was the fourth-largest producer of manmade fibers, third-largest producer of fabrics, and its cotton spinning capacity ranked 15th in the world.[98]

Other Manufacturing

Electronics[99]

The United States is the world's largest producer and consumer of electronics. During 1995-2000, U.S. shipments of electronics rose by roughly 18 percent to $275 billion.[100]

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[97] A trade source reports that Korean apparel firms are the largest investors in Bangladesh and that almost 300 Korean apparel firms operate in Guatemala. See "South Korea's Textile and Apparel Industry," *Pacific Trade Winds* (Santa Barbara, CA), June 2001, p. 1.

[98] Korean Federation of Textile Industries, "The Textile Industry: Building the National Economy and Leading Globalization."

[99] Electronics comprises both finished and unfinished products and may be divided into the following subgroups: computers and office equipment; consumer electronics; electronic components; and telecommunications equipment.

[100] USITC estimates based on data from Reed Electronics Research, *The Yearbook of Electronics Data, 2000*, (Reed Business Information: UK, 2000).

and were composed largely of computer and telecommunications equipment as well as components. The U.S. industry includes thousands of firms ranging in size from large, integrated equipment and component manufacturers to small niche players such as software and semiconductor design houses. A large number of multinational, including Korean, firms have production operations in the United States.

Figure 3-9
Electronics: Selected industry data, 2000

Item	United States	Korea
Exports *(billion dollars)*	175	58
Imports *(billion dollars)*	230	35
Shipments *(billion dollars)*	275	65
Apparent consumption *(billion dollars)*	330	42
Employment, 1999	1,400,000	400,000

Sources: USITC estimates based on data from Statistics Canada, Reed Electronics Research, the U.S. Bureau of Labor Statistics, National Statistical Office of Korea, and the Korean Customs Office.

Korea is a global leader in semiconductor production and is becoming a significant producer of certain computer and telecommunications equipment. Korean electronics production experienced a significant decline following the financial crisis but returned to a pattern of strong growth in 1999 and 2000. The Korean industry is more concentrated than the U.S. industry and is largely dominated by four producers that manufacture a broad range of electronics products: Daewoo Electronics, Hynix (formerly Hyundai Electronic Industries), LG Electronics, and Samsung Electronics. In addition to these four companies, there are some 100 medium-sized firms as well as several thousand smaller concerns.[101]

Trade plays an increasingly important role for U.S. electronics manufacturing and consumption. Total U.S. exports of electronics products increased by 53 percent during 1995-2000 to $175 billion, while exports to Korea rose by 135 percent to $11 billion. Although total U.S. exports were spread out among computer equipment, telecommunications equipment, and components such as semiconductors, exports to Korea were heavily focused on semiconductors. During 1995-2000, semiconductor exports to Korea rose by 230 percent to more than $5 billion. The growing use of semiconductor production sharing accounted for much of this increase.[102] U.S. imports of electronics products rose by 55 percent to $230 billion during 1995-2000, and consisted primarily of computer equipment, semiconductors, and telecommunications equipment. U.S. imports from Korea rose by roughly 60 percent to $21 billion during that period and consisted largely of semiconductors and computer equipment.

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[101] Reed Electronics Research, *The Yearbook of Electronics Data, 2000*, p. 181. The operations of many of the smaller firms are closely tied to those of the four mentioned.

[102] See USITC, *Production Sharing: Use of U.S. Components and Materials in Foreign Assembly Operations, 1992-1995*, April 1997. Production sharing in the U.S. electronics industry usually entails the export of domestically produced components or unfinished products to lower wage economies for the generally higher labor content assembly steps. Typically, the resulting subassemblies or finished products are then shipped to the United States or a third market for consumption. Korea has been a leading production-sharing partner for the United States in the manufacture of semiconductors.

The Korean industry is even more export oriented than its U.S. counterpart. For example, more than 90 percent of Korean semiconductor production is exported.[103] Korea's exports of electronics grew by an estimated 65 percent during 1995-2000 to $58 billion. The United States is the leading market for Korean electronics exports. In spite of severe global price erosion for dynamic random access memory semiconductors (DRAMs) in recent years, semiconductors continue to be Korea's largest export item, accounting for roughly one-seventh of the value of Korea's total merchandise exports.[104] Other electronics products that are important export items include wireless handsets, low-priced PCs, and monitors.

Korean imports of electronics declined sharply during the financial crisis but recovered in 1999 and 2000 to pre-crisis levels. Since 1995, semiconductors have been the largest (by value) electronics import item. Korea is a major importer of non-DRAM semiconductors and other components that are used in the local manufacture of telecommunications and other electronics equipment. Increases in imports of components were somewhat tied to export growth, as a significant portion of Korean imports are incorporated into final products and exported. Import growth also was strong in Korea for transmission equipment, switches, and wireless and data communications equipment.[105]

The strengths of the U.S. electronics industry are in advanced technologies, heavy investment in research and development (R&D),[106] the availability of an educated workforce, advanced infrastructure, and institutions of higher learning. In addition, U.S. firms are often among the leaders in adopting newer, more advantageous business models. Recent trends include the increased use of outsourcing and contract manufacturing that have allowed U.S. firms to lower production costs and narrow the breadth of their operations to a smaller number of core specializations.[107] Production sharing, or the use of domestic components in foreign assembly operations, has also provided competitive advantages to the U.S. electronics sector. Korea continues to be an important semiconductor production-sharing partner for the United States by assembling semiconductors that were fabricated in the United States.

A primary strength of the Korean electronics industry has been its skill in the volume manufacture of commodity-type products. Examples are computer monitors, wireless handsets, liquid crystal displays (LCDs), and especially semiconductors.[108] However,

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[103] USITC interview with Korean industry representatives, Seoul, Korea, May 2, 2001.

[104] Ibid.

[105] EIAK, "Telecommunications," found at Internet address *www.eiak.org* retrieved Feb. 12, 2001.

[106] USDOC, *U.S. Industry and Trade Outlook, 1999*, pp. 16-4, 27-4, and 28-2.

[107] Stephen Shankland, "High-tech Manufacturers Add Brains to Brawn," CNET News.com, found at Internet address *http://news.cnet.com*, retrieved June 15, 2001, and Bloomberg News "Short Take: Huge Growth Forecast in Asian Contract Manufacturing," CNET News.com, found at Internet address *http://news.cnet.com*, retrieved June 15, 2001, and "Why Motorola, One of the World's Great Manufacturers, Has Decided to Outsource a Big Share of Manufacturing," ManufacturingNews.Com, found at Internet address *www.manufacturingnews.com,* retrieved June 15, 2001.

[108] Approximately 87 percent of Korean semiconductor fabrication is in the form of memory products, as compared to the world average of 21 percent. Korea reportedly accounts for roughly 7 percent of the world's total semiconductor fabrication, but 40 percent of DRAM fabrication. Korean industry representatives, interview by USITC staff, Seoul, Korea, May 2, 2001.

many Korean firms are now attempting to diversify their product offerings and migrate up the technology chain to produce more technology-intensive, higher value-added products.[109] As that process develops, Korean production of consumer electronics, often considered to be lower technology with higher labor content, appears to be in a period of decline. This industry is shifting to lower-wage countries in the region such as Malaysia, Thailand, and China.[110]

Transportation Equipment[111]

The United States is the world's leading producer of large civil aircraft and one of the world's largest producers of automobiles. During 1995-2000, U.S. producers' shipments of transportation equipment rose by approximately 5 percent to $320 billion. Included in the U.S. industry are companies that range in size from small operations specializing in a single or a few products, to large, vertically integrated multinational corporations that manufacture a diverse line of products. However, larger companies such as Boeing, General Motors, and Ford dominate U.S. production and export trade in their respective product categories.

Figure 3-10
Transportation equipment: Selected industry data

Item	United States	Korea
Exports *(billion dollars)* 2000	142	26
Imports *(billion dollars)* 2000	227	7
Motor vehicles:		
Exports *(units)*	1,219,182	1,509,660
Imports *(units)*	6,230,655	5,675
Production *(units)*	13,106,526	2,843,114
Percent of production exported	9.3	53.1
Sales *(units)*	16,959,237	1,273,029
Percent of sales imported	36.7	0.5
Consumption per capita *(number of passenger cars per 100 people)* 1998	49	16

Note.—Except where otherwise indicated, all data presented are for 1999.

Sources: Automotive News Data Center; Korean Automotive Manufacturers Association; Korean Ministry of Finance and Economy; and USITC estimates based on data from the U.S. Department of Commerce, the Korean Customs Service, and Statistics Canada.

Korea is one of the world's leading automobile producers[112] and shipbuilders. Following years of growth, Korean automobile production experienced a sharp decline in 1998 as domestic consumption declined by roughly one half (in units)

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[109] USITC interview with Korean Government official, Seoul, Korea, April 25, 2001, and Korean industry representatives, Seoul, Korea, April 28 and 30, and May 2, 2001.

[110] Reed Electronics Research, *The Yearbook of Electronics Data, 2000*, p. 181.

[111] Transportation equipment includes aircraft, spacecraft, and related products; motor vehicles; certain motor-vehicle parts; ships, pleasure boats, tugs, and similar vessels; rail locomotive and rolling stock; and other transportation related products.

[112] Written testimony of Stephen Collins, President of the Automotive Trade Policy Council, Commission hearing on Inv. No. 332-425, *U.S.-Korea FTA: The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea*, May 17, 2001.

following the financial crisis. However, production rose again in 1999 to pre-crisis levels while export sales grew throughout the period.[113] Many Korean automobile manufacturers were left in poor financial positions following the crisis[114] and as a result the industry experienced significant consolidation and investment from foreign manufacturers. Korea's shipbuilding industry is one of the world's largest, consistently competing with Japan for the leading position.[115] The Korean shipbuilding industry grew substantially over the period 1995-2000, with the value of completed new shipbuilding rising from $5.1 billion to $9.6 billion.[116] Gross tonnage of completions rose from 5.1 million tons in 1995 to 11.8 million tons in 2000.[117] In 2000, for the first time Korea ranked first in the world market in new shipbuilding orders (29 percent of world total), shipbuilding completions (39 percent of world total), and order backlog (25 percent of world total).[118]

U.S. exports of transportation equipment increased by roughly $40 billion (39 percent) to $142 billion during 1995-2000 (figure 3-10), and consisted largely of aircraft and related equipment, motor vehicles, and motor-vehicle parts. U.S. exports of transportation equipment to Korea declined by more than $600 million (17 percent) to $3.0 billion during 1995-2000, largely as a result of Korea's economic downturn following the financial crisis. Roughly two-thirds of U.S. exports to Korea were aircraft and related parts. U.S. motor vehicle exports to Korea have been negligible throughout the period.

Total U.S. imports of transportation equipment increased by nearly $85 billion (60 percent) to $227 billion during 1995-2000. Motor vehicles and certain motor-vehicle parts were the principal imported products. Imports from Korea rose by about 175 percent to more than $6 billion during this period. Slightly more than three-fourths of those imports consisted of motor vehicles, which exemplifies the expanding popularity of Korea's low-cost automotive products in the U.S. market. During the last four years, Korea's share of U.S. passenger vehicle sales (passenger cars and light trucks) reportedly rose from 1 percent to 3.3 percent, while the Korean share of passenger car sales alone rose from 1.8 percent to 5.4 percent. In 2000, vehicle sales by Korean automakers in the United States exceeded 470,000 units.[119]

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[113] National Statistical Office (NSO), *Statistical Handbook of Korea 2000* (Korea: NSO, 2000), pp. 60-63.

[114] Korea Automobile Manufacturers Association, *The Korean Automobile Market: The Race For Success–Cooperation & Competition*, pp. 17-20.

[115] NSO, *Statistical Handbook of Korea 2000* (Korea: NSO, 2000), pp. 64-66.

[116] Korea Shipbuilders' Association, "Korean New Shipbuilding Results," found at Internet address *www.koshipa.or.kr*, retrieved August 3, 2001.

[117] Korea Shipbuilders' Association switched in 2000 from reporting gross tonnage to reporting compensated gross tonnage. Japan External Trade Organization (JETRO) reported gross tonnage for 2000. JETRO, "Recent Shipbuilding Market Condition Report by the Shipbuilders' Association of Japan," found at Internet address *www.jetro.org*, retrieved August 3, 2001.

[118] Ibid.

[119] Written testimony of Mr. Stephen Collins, President of the Automotive Trade Policy Council, Commission hearing on Investigation 332-425, *U.S.-Korea FTA*, May 17, 2001.

Korea's transportation equipment industry is heavily export oriented with over one-half of domestic automobile and ship production exported.[120] Korea's exports of transportation equipment increased by over 50 percent to $26 billion during 1995-2000.[121] As noted above, Korean exports to the United States were primarily motor vehicles.

Korea's total imports of transportation equipment fell by over 10 percent to roughly $7 billion during 1995-2000. The vast majority of imports from the United States consisted of aircraft and related equipment. With the exception of aircraft, the Korean market for transportation equipment has been almost completely dominated by Korean producers. Reportedly, the Korean automobile market is the fifth largest in the world, but in 2000 imports only held a 0.5-percent market share (4,414 units) with the United States exporting roughly 1,110 units.[122] In comparison, imports accounted for roughly 37 percent of the U.S. motor vehicle sales and Korea represented 2 percent of total sales in 1999 (figure 3-10). The lack of import penetration in the Korean automobile market has been the source of considerable trade friction and the subject of two memorandums of understanding between the United States and Korea.

The U.S. transportation equipment industry is a global pacesetter in terms of advanced technology, product design, and production levels.[123] The industry's leadership stems mainly from heavy investment by U.S. producers in product R&D that has yielded major advancements in all areas of production. R&D expenditures are relatively high for this industry as producers seek to maintain leading edge technology and develop products to enhance market position.[124]

The Korean automobile industry has emerged as a world-class producer, ranking as the fourth-largest producing nation in the world in 2000.[125] Quality improvements and competitive pricing have helped Korean automakers make significant inroads in overseas markets.[126] In addition, Korean automakers have invested heavily in overseas production, particularly in Eastern Europe, garnering important market share in this region as well. The competitiveness of Korean shipbuilders in international markets results from a number of factors, including a favorable exchange rate, experienced workforce, improving productivity, and technology gains.[127] In addition,

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[120] Korean Government official, interview by USITC staff, Seoul, Korea, Apr. 23, 2001, and written testimony of Stephen Collins.

[121] Data compiled from Statistics Canada.

[122] Korean Automobile Manufacturers Association, *The Korean Automobile Market: The Race for Success,* p. 31, and written testimony of Stephen Collins.

[123] Information obtained by USITC staff from U.S. industry officials and the USDOC, "Transportation: Economic and Trade Trends; Motor Vehicles," *U.S. Industry and Trade Outlook, 1999,* pp. 21-1 to 21-16 and pp. 36-1 to 36-13.

[124] Ibid.

[125] Automotive News Data Center, *Market Data Book 2001*, found at Internet address *www.autonewsdatacenter.com,* retrieved June 13, 2001.

[126] Written testimony of Stephen Collins, and National Statistical Office of the Republic of Korea, *Statistical Handbook of Korea*, pp. 61 and 63.

[127] Kim Myong-hwan, "South Korean shipyards make waves, eye cruise market," June 3, 2001, found at Internet address *http://news.excite.com*, retrieved June 12, 2001; and Seok Joon, "Shipbuilding leads export wave," *Business Korea*, Apr. 2001, found at Internet address *http://proquest.umi.com,* retrieved May 30, 2001.

EU officials allege that state-run banks subsidized financially troubled shipbuilders.[128] The Asian financial crisis of 1997-98 enhanced the price competitiveness of Korean shipyards,[129] especially in lower-value tankers and smaller container vessels.[130] Korean shipbuilders are currently poised to enter the high-value cruise ship market.

Chemicals and Allied Products[131]

The United States is the world's largest producer of chemicals, with domestic shipments estimated to have exceeded $438 billion in 2000.[132] Of the more than 2,500 companies producing chemicals in the United States, diversified, vertically integrated multinational firms, both U.S.- and foreign-based, account for the majority of production: sixteen of the 50 largest chemical-producing firms worldwide are U.S.-based, and 18 others have active chemical plants in the United States.

Figure 3-11
Chemicals and allied products: Selected industry data

Item	United States	Korea
Exports *(billion dollars)*	98	17
Imports *(billion dollars)*	99	16
Shipments *(billion dollars)*	438	35
Apparent consumption *(billion dollars)*	439	34
Employment *(thousands)* 1999	1,030	74
R&D expenditures in chemicals *(billion dollars)* 1998	21.8	([1])
R&D expenditures as percent of sales, 1998	5.5	0.97

[1] Not available.

Note.—Except where otherwise indicated, data presented are for 2000.

Sources: USITC estimates based on data from the U.S. Bureau of Labor Statistics, official statistics of the U.S. Department of Commerce, the U.S. Census Bureau, *Statistical Abstract of the United States, The National Data Book, 2000,* and the Korean Customs Service.

Korean chemical industry production is estimated to be 6 percent to 10 percent of U.S. production or approximately $35 billion in 2000. Korea has exhibited a higher average annual growth rate (8 percent to 10 percent) than the United States (6 percent) except during the aftermath of the Asian financial crisis.[133] The Korean

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[128] John Burton, "International Economy: EU optimistic on Korea deal shipbuilding dispute," *Financial Times*, May 31, 2001, found at Internet address *www.ft.com*, retrieved June 12, 2001.

[129] Kim Myong-hwan, "South Korean shipyards make waves, eye cruise market," June 3, 2001, found at Internet address *http://news.excite.com,* retrieved June 12, 2001.

[130] Seok Joon, "Shipbuilding leads export wave," *Business Korea*, Apr. 2001, found at Internet address *http://proquest.umi.com,* retrieved May 30, 2001.

[131] Major product categories included in the chemicals and allied products subsector are basic chemicals, such as industrial organic and inorganic chemicals; and specialty chemicals and chemical products such as pigments, dyes, fertilizers, plastics materials, pharmaceuticals, soaps, cosmetics, toiletries, paints, and pesticides.

[132] "As the Economy Slows Next Year, So Will the Chemical Industry," Chemical & Engineering News, Dec. 11, 2000, p. 18.

[133] Information for Korea compiled from online OECD sources, found at Internet address *www.oecd.org*, retrieved April, 2001; "Global Economic Uncertainty Threatens Fledgling Recovery," *Chemical and Engineering News*, Dec. 11, 2000, pp. 31-34; and Korea National Statistics Office, *Korean Statistical Information System.* U.S. data compiled from U.S. Census Bureau, NAICs Time Series Data, found at Internet address *www.census.gov*, retrieved July 9, 2001.

chemical industry is heavily weighted toward production of petrochemicals,[134] related organic intermediates, and resins for plastics materials. The industry was noticeably affected by the Asian economic problems of 1997-98. Plans to implement significant financial reforms and a development program for Korean production facilities could not be completed owing to insufficient capitalization and the rapidly changing market situation.[135]

U.S. chemical industry exports are wide ranging in nature and are composed of virtually all chemicals and chemical products (including pharmaceuticals) manufactured domestically: during 1995-2000, U.S. exports of chemicals rose 36 percent to $98 billion, while exports to Korea rose by roughly 4 percent to $2.9 billion.[136] Many U.S. exports are intracompany or affiliate transactions.

During 1995-2000, total U.S. chemical imports rose by 75 percent to $99 billion. U.S. imports are often complementary to U.S. chemical industry production, including many chemicals produced outside the United States by U.S.-based companies as well as foreign-sourced chemical intermediates used to produce finished chemical products in U.S. facilities. During 1995-2000, U.S. imports from Korea rose by 64 percent to $1.4 billion.[137] This change reflected the strengthening of the organic chemicals and plastic resins segments of the Korean chemicals industry.

Korean exports in this sector rose by roughly 46 percent to $17 billion during 1995-2000, and consisted primarily of petrochemicals. Korea's export markets are primarily regional and include China, Hong Kong, Taiwan, and Japan.[138] Korean imports declined significantly following the Asian financial crisis. However, by 2000, import levels had rebounded to the pre-crisis level of nearly $16 billion. U.S. exports to Korea are composed mainly of organic chemicals and plastics resins.

The U.S. chemical industry is largely dominated by multinational firms with access to international capital markets and can globally source feedstock chemicals. R&D expenditures in the U.S. chemicals industry, which have grown from $4.6 billion in 1980 to $21.76 billion in 1998,[139] have led to greater intellectual property development and product innovation for U.S. firms. In 1998, U.S. firms in this sector spent 5.5 percent of sales on R&D, while R&D expenditures represented 0.97 percent of sales for Korean firms.[140] R&D is a particular advantage in certain segments of the

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[134] According to the Korea Petrochemical Industry Association, the category "petrochemicals" includes a range of items from beginning petrochemical feedstocks (e.g., benzene, ethylene, propylene) through products such as polyethylene resins, ethylene glycol, synthetic fibers and synthetic rubber.

[135] "Global Economic Uncertainty Threatens Fledgling Recovery," *Chemical & Engineering News*, Dec. 11, 2000, pp. 31-34; and "The Worst Days Are Behind Chemical Firms," *Business Korea,* January 2000, pp. 25-27.

[136] Official statistics of the U.S. Department of Commerce.

[137] Ibid.

[138] Statistics Canada data.

[139] U.S. Census Bureau, *Statistical Abstract of the United States: 2000, The National Data Book,* 120th edition, pg. 609.

[140] However, Korean R&D expenditures appear to be rising, and represented 1.38 percent of sales in 1999. U.S. Census Bureau, *Statistical Abstract of the United States: 2000, The National Data Book,* 120th edition, and Korean Ministry of Commerce, Industry and Energy, *Korean Statistical Yearbook 2000,* p. 415. The data for Korean firms do not cover rubber products.

chemicals industry that are highly dependent upon new products for growth, such as innovative pharmaceuticals. U.S. industry sources indicate that Korean pharmaceutical firms have often produced goods based on expired patents of U.S. and EU firms.[141] In general, the Korean chemical industry is regionally competitive within Asian markets, although in specific product areas, such as petrochemicals, the Korean producers are attempting to become globally competitive by increasing capital investment and developing new world-class facilities.[142]

Services[143]

During 1995-99, total U.S. services exports increased by 24 percent to $269.6 billion, while imports rose by 35 percent, to $191.3 billion, yielding a U.S. services trade surplus of $78.3 billion in 1999.[144] During that same period, Korea's total services exports rose by 16 percent, to $26.5 billion, while imports increased by 5 percent, to $27.2 billion.[145] In 1999, Korea represented approximately 2 percent of the total market for both U.S. service sector exports and imports. During 1995-99, total U.S. service sector exports to Korea registered a 6-percent decline, to $5.3 billion, primarily as a result of the 1997-98 Asian financial crisis. In 1996, just before the crisis, U.S. service exports to Korea reached a high of $7.4 billion. Exports of freight transportation, travel, and education services[146] accounted for the largest shares of sector exports. During 1995-99, U.S. service imports from Korea increased by 24 percent, to $4.5 billion and were mainly composed of freight transportation, travel services, and passenger fares.[147]

Figure 3-12
Services: Selected industry data, 1999

Item	United States	Korea
Services GDP *(billion dollars)*	6,474.7	199.1
Services GDP/Total GDP *(percent)*	79.5	52.9
Inward bound FDI (flows)		
Services FDI *(billion dollars)*	192.7	8.4
Services FDI/Total FDI *(percent)*	19.5	53.8
Services FDI/Services GDP *(percent)*	3.0	4.2
Total FDI/Private sector GDP *(percent)*	12.1	4.1

Note.—Private sector GDP was used for these calculations.

Sources: Korean Ministry of Commerce, Industry, and Energy, *Trends in Foreign Direct Investment,* Dec. 31, 2000 and U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Sept. 2000 and Jan. 2001.

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[141] USITC staff interview with U.S. industry representative, Washington, D.C., Apr. 26, 2001.

[142] "Asia /Pacific Discord: Korean M&A Disappoints," *Chemical Week*, Feb. 7, 2001, p. 22.

[143] This sector encompasses travel; passenger fares; other transportation, including maritime, air, land, pipeline transport, and port services; and other private services, including education, financial services, insurance, telecommunications, and business services.

[144] USDOC, BEA, *Survey of Current Business,* Oct. 2000, p. 119, 138-141.

[145] IMF, *International Financial Statistics 1999,* p. 542.

[146] U.S. exports of travel and education services occur when foreign residents travel to the United States, and when foreign students enroll at U.S. educational institutions. Other transportation services are defined above.

[147] USDOC, BEA, *Survey of Current Business,* Oct. 2000, pp. 134-149.

Foreign direct investment in the Korean service sector has recorded a significant increase since the 1997 onset of the financial crisis. In 1996 foreign direct investment in Korea's service sector totaled $1.3 billion. The economic dislocation caused by the financial crisis made investment in Korea relatively less expensive for foreign investors, and the Korean Government repealed most restrictions on investment in 1998, in a successful effort to attract more foreign investment into the country. As a result, direct investment in the Korean service sector increased to $8.4 billion in 1999 and $8.6 billion in 2000. Figure 3-12 compares the service sector's share of investment and of GDP, for Korea and the United States. Three service sector industries (banking, telecommunications, and audiovisual services) face particular barriers to trade in Korea, the removal of which could generate an increase in U.S. exports to Korea. These industries are discussed in greater detail in the following sections.

Banking and Securities Services[148]

The United States has the world's largest banking and securities markets. At the end of 2000, 8,315 commercial banks operated in the United States, reporting total assets of $6.2 trillion and total deposits of $4.2 trillion.[149] Foreign banks owned or controlled 440 bank agencies, branches or subsidiaries in the United States, with total assets of $1.3 trillion.[150] In 1999, U.S. commercial banks held a total of $655.6 billion in deposits in foreign bank offices.[151] As of May 2001, 26 commercial and merchant banks operated in Korea. The number of commercial banks has declined from more

Figure 3-13
Banking: Selected industry data, 2000

Item	United States	Korea
Number of banks	8,315	[1]26
Total bank deposits *(billion dollars)*	4,200	[2]357.8
Total bank assets *(billion dollars)*	6,200	[2]1,028.5
Number of foreign banks[3]	440	60
Total foreign bank assets *(billion dollars)*	1,300	([4])

[1] Includes commercial banks and merchant banks.
[2] Exchange rate calculated by USITC staff from Economist Intelligence Unit data, taken from Bank of Korea.
[3] Includes branches and representative offices.
[4] Not available.

Sources: Bank of Korea, Statistics Database; FDIC, Quarterly Banking Profile, 4th Quarter 2000; U.S. Federal Reserve Board, "Structure Data for U.S. Offices of Foreign Banks"; *Euromoney,* "Intervention, interference, or encouragement," Feb. 2001; OECD, *Economic Surveys: Korea*; Korea National Statistical Office, *Korea Statistical Yearbook 2000.*

[148] Banking and securities services include fee-based commercial banking services, such as financial management and transaction services, advisory services, custody services, credit card services, and credit-related services such as provision of standby letters of credit for trade financing; and securities-related services, such as securities lending services, mutual fund services, securities clearance and settlement services, securities trading services, and securities underwriting services. Banks' deposit-taking and lending services are excluded from this discussion, since trade data on these services are not available.

[149] Federal Deposit Corp. (FDIC), Quarterly Banking Profile, 4th Quarter 2000, table III-A, found at Internet address *www2.fdic.gov*, retrieved Mar. 27, 2001.

[150] This excludes representative offices of foreign banks, which do not hold assets. U.S. Federal Reserve Board, found at Internet address *www.federalreserve.gov,* retrieved Apr. 18, 2001.

[151] FDIC, table CB17, "Deposits in Foreign Offices and Past Due and Nonaccrual Loans & Leases," found at Internet address *www2.fdic.gov*, retrieved Mar. 27, 2001.

Figure 3-14
Securities: Selected industry data, 2000

	United States			Korea
	New York Stock Exchange	Nasdaq	American Stock Exchange	Korea Stock Exchange
Number of listed companies	2,862	5,222	765	704
Total market capitalization	$12.4 trillion	$3.6 trillion	$124.9 billion	$149 billion
Number of foreign companies listed . .	434	488	51	0

Sources: The *Salomon Smith Barney Guide to World Equity Markets 2001* (London: Euromoney Books, 2001), p. 553; and Korea Stock Exchange website, found at Internet address *www.kse.or.kr*, retrieved Apr. 18, 2001.

than 30 in 1997 as a result of mergers with stronger competitors.[152] As of June 2000, 21 of the 30 merchant banks in existence in 1997 had closed or merged with competitors as a result of the financial crisis.[153] In 2000, Korean banks held total assets of $1,028.5 billion, with Korean bank deposits of $357.8 billion.[154]

There were 7,483 securities firms registered with the U.S. Securities and Exchange Commission in 1999, with estimated worldwide revenue of $325 billion.[155] In Korea, 54 securities companies were registered at the end of 1999, down from 59 before the 1997 financial crisis.[156] Foreign securities firms have been permitted to open branches in Korea since 1994, and to form Korean subsidiaries since 1998. At the end of 1998, there were 21 branches and 8 representative offices of foreign securities firms in Korea. Five branches and seven representative offices were U.S. owned.[157]

U.S. securities markets rank first globally in terms of market value. At yearend 2000, total market capitalization was $12.4 trillion for the New York Stock Exchange (NYSE), $3.6 trillion for the Nasdaq, and $124.9 billion for the American Stock Exchange.[158] Foreigners held $1.2 trillion in U.S. stocks at the end of 1999, and a total of $3.7 trillion

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[152] Euromoney, "Intervention, interference or encouragement?" Feb. 2001, pp. 58-66.

[153] OECD, *Economic Surveys: Korea* (OECD: Paris, 2000), p. 275.

[154] Korea National Statistical Office, *Korea Statistical Yearbook 2000,* pp. 456-457, 463, 469.

[155] Securities Industry Association, *2000 Securities Industry Fact Book* (New York: Securities Industry Association, 2000), pp. 27, 39.

[156] OECD, *Economic Surveys: Korea* (OECD: Paris, 2000), p. 279.

[157] U.S. Treasury Department, National Treatment Study 1998, found at Internet address *www.ustreas.gov/nts/*, retrieved Mar. 28, 2001.

[158] The figure for foreign firms listed on the American Stock Exchange is from 1998. Data for 1999 are not available. *The Salomon Smith Barney Guide to World Equity Markets 1999* (London: Euromoney Books, 1999), p. 553; and *2000 Securities Industry Fact Book* (New York: Securities Industry Association, 2000), p. 48. Nasdaq and the American Stock Exchange merged in November 1998, but will continue to operate as separate markets under one management. See "NASD and Amex Merger Completed," press release, found at Internet address *www.nasdaq.com,* retrieved Apr. 2, 2001.

in all types of U.S. securities.[159] The Korea Stock Exchange (KSE), the country's primary stock market, had a total market capitalization of $148.6 billion at the end of 2000, ranking the KSE 22nd among global stock exchanges.[160] In 1999, foreign investors accounted for 12.4 percent of total outstanding shares on the KSE and for 21.7 percent of its market value.[161] There is also an over-the-counter market (Kosdaq), and recently launched stock index futures and options markets.[162]

Total U.S. exports of financial services were $13.9 billion in 1999, an increase of 98 percent over the 1995 level, due to global financial market liberalization in many countries and increased U.S. direct investment abroad.[163] U.S. exports of financial services to Korea increased by 154 percent during 1995-99, to $226 million, largely as a consequence of Korean financial market liberalization following the 1997 financial crisis.[164] U.S. imports of financial services totaled $3.6 billion in 1999, reflecting an increase of 45 percent from 1995. The small value of imports, relative to exports, illustrates the highly competitive nature of U.S. financial services firms in global markets. The United States imported $33 million in financial services from Korea during 1999, an increase of 106 percent over the 1995 level. Financial services represent less than one percent of total U.S. service imports from Korea.[165] Unlike the U.S. financial services industry, Korean banks and securities firms focus primarily on the domestic market. As of September 2000, 11 Korean banks had offices in the United States, with total assets of $2.5 billion.[166] These banks primarily serve the U.S. offices of Korean-based corporations. Data on Korean cross-border trade in financial services are not available.

Resources within the U.S. banking industry are highly concentrated. In 2000, 82 banks, each with assets of more than $10 billion, accounted for 70 percent of the industry's total assets. The number of commercial banks declined by 16 percent during 1995-2000, as the U.S. banking industry consolidated through mergers and acquisitions, even as total bank assets increased by 45 percent.[167] The U.S. securities industry also is highly concentrated. The 280 members of the NYSE accounted for $183.4 billion in revenue, almost 70 percent of the industry total. The top 10 members of the NYSE, all of which are global investment banking firms, accounted for one-half of total NYSE member revenue.[168] Korean banks and securities firms are unlikely to possess the resources to compete against these large financial services firms.

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[159] This figure includes stocks, corporate bonds, and U.S. Treasury bonds. 2000 Securities Industry Fact Book, (New York: Securities Industry Association, 2000), p. 80.

[160] Korea Stock Exchange, found at Internet address *www.kse.or.kr,* retrieved Apr. 18, 2001.

[161] Korea Stock Exchange, *KSE Fact Book 2000,* found at Internet address *www.kse.or.kr,* retrieved Apr. 18, 2001.

[162] OECD, Economic Surveys: Korea, p. 185.

[163] This does not include deposit taking or lending services.

[164] Figures for 1995 are not available.

[165] USDOC, BEA, *Survey of Current Business,* Oct. 1999, pp. 64-65, and Oct. 2000, pp. 142-149.

[166] Board of Governors of the Federal Reserve System, "Structure and Share Data for U.S. Offices of Foreign Banks," found at Internet address *www.federalreserve.gov*, retrieved Mar. 27, 2001.

[167] FDIC, Quarterly Banking Profile, 4th Quarter 2000, table III-A.

[168] Securities Industry Association, *2000 Securities Industry Fact Book*, pp. 27, 39.

The Korean banking and securities industries have experienced significant changes in recent years, including eliminating all restrictions on foreign participation in Korean equity markets in May 1998, except for limits on foreign equity ownership of a few Korean state-owned companies.[169] The Korean Government banking reforms include efforts to recapitalize or close a number of banks with serious financial difficulties; reform regulation of the financial services sector by creating a new agency, the Financial Supervisory Commission (FSC), to regulate the entire financial services industry; and provide greater liquidity in Korea's government debt market.[170] Reform has been motivated by the 1997 Asian financial crisis, which demonstrated certain structural weaknesses in the Korean finance industry, and by an effort to attract foreign direct investment into Korea.[171]

Telecommunication Services[172]

Both the United States and Korea have well developed communication infrastructures. Korea has been emphasizing the development of its telecommunication market since the early 1980s. Deregulation and competition in the 1990s further advanced the industry's development,[173] which has led to an increase in both wireline and wireless penetration rates. Wireline infrastructure increased from 7.3 lines per 100 habitants in 1980 to 44 lines in 1999,[174] and wireless subscribers reached 23.4 million by October

Figure 3-15
Telecommunications services: Selected industry data, 1999

Item	United States	Korea
Total revenue *(billion dollars)*	268.5	15.8
Employment *(thousands)*	1,100	62.1
Number of wireline companies	3,200	4
Number of wireless companies	900	4
Wireline penetration rate *(telephone lines/100 inhabitants)*	67	44
Number of wireless subscribers[1] *(millions)*	86	23
Internet users *(millions)*	74.1	10.9

[1] Includes cellular, paging, and other mobile services.
Sources: International Telecommunications Union and U.S. Department of Commerce.

[169] The electric power company (KEPCO), the major steel company (POSCO), Korea Telecom, SK Telecom, Kefcd, and Dacom have foreign ownership limits of 49 percent or less. *The Salomon Smith Barney Guide to World Equity Markets 1999*, p. 312; USTR, "2001 National Trade Estimate Report," found at Internet address *www.ustr.gov*, retrieved Apr. 5, 2001; Korea Stock Exchange, *KSE Fact Book 2000,* found at Internet address *www.kse.or.kr*, retrieved Apr. 18, 2001; and Nasdaq, found at Internet address *www.nasdaq.com,* retrieved Apr. 18, 2001.

[170] OECD, *Economic Surveys: Korea*, p. 185.

[171] USTR, 2001 National Trade Estimate Report and OECD, *Economic Surveys: Korea*, pp. 57-88.

[172] Telecommunication services include both basic and value added services. Basic services entail the transmission of voice and data services without change in form or content, while value-added services include services such as electronic mail, electronic data interchange, electronic funds transfer, enhanced facsimile, and on-line database access. Value added networks are defined as data communications networks in which information is added to basic communications networks. Internet services are typically provided on value added networks.

[173] OECD, "Regulatory Reform in Korea," (OECD: Paris, France, 2000), p. 90.

[174] OECD, "Regulatory Reform in Korea," p. 90, and International Telecommunication Union (ITU), "World Telecommunication Indicators, 2000/2001," (ITU: Geneva, Switzerland, 2001).

1999, surpassing fixed line subscribers and accounting for slightly more than half of the country's total population.[175] In 1999, Korea was the world's 11th largest telecommunication market, with telecommunication revenues of $15.8 billion, accounting for 3.4 percent of the country's GDP. Comparatively, the United States is the world's largest telecommunications market, with 1999 revenues of $268.5 billion, accounting for 2.8 percent of the country's GDP. In 1999, wireless subscribers in the United States totaled 86 million, accounting for 32 percent of the country's population,[176] while the wireline penetration rate totaled 67 percent.

Korea implemented its WTO commitments on foreign ownership ahead of schedule, with the reported intention of assuring potential investors that the country is open to FDI.[177] In 1998, foreign equity limits in Korea Telecom were raised from 20 percent to 33 percent. Actual foreign ownership increased to 19 percent after the sale of a 14.5-percent stake to small shareholders in 2000.[178] Further privatization plans have been delayed until 2002.[179] Consistent with Korea's GATS commitments, other facilities-based retail telecommunication service firms may be 49 percent foreign owned, while firms providing telecommunication services on a resale basis may be 100 percent foreign owned.[180]

Korean telecommunication services trade data are not available. Korea's outbound telephone traffic totaled 890.5 million minutes in 1999, an increase of 60 percent over 1995.[181] In 1999, outbound calls to the United States totaled 203.7 million minutes, representing a 44.7-percent increase from 1995. In 1999, Korea's incoming calls from the United States totaled 322.9 million minutes, representing a slight increase (1.1 percent) from 1995.[182] In 1999, the United States' outgoing telephone traffic totaled 28.4 billion minutes, exceeding incoming traffic and resulting in a $2.3 billion net settlement deficit. In 1999, Korea was the United States' sixth largest export market, accounting for U.S. receipts of $118 million. U.S. imports from Korea totaled $145 million, representing a 36-percent decrease from 1995. The decline in imports may in part be attributable to a reduction in U.S. accounting rates with Korea, which decreased from an average of $.87 per minute in 1995 to $.71 per minute in 1999.

U.S. firms are world leaders in the provision of telecommunication services. To maintain competitiveness and increase revenue, U.S. firms are utilizing new technologies to reduce calling costs and improve service quality; investing in deregulated foreign markets; and expanding service offerings beyond traditional

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[175] USDOC, International Trade Administration (ITA), "Korea - Subscribers to Telecom Services," Market Research Reports: International Market Insights, STAT-USA database, found at Internet address *www.stat-usa.gov*, retrieved Apr. 3, 2001.

[176] ITU, "World Telecommunication Indicators, 2000/2001."

[177] USITC interview with Industry representative, Seoul, Korea, Apr. 26, 2001.

[178] OECD, "Economic Surveys, 1999-2000: Korea," p. 170.

[179] U.S. Department of State telegram, "ROK Minister Threatens to Swing Budget Axe to Enforce Privatization," message reference No. 090732Z, prepared by U.S. Embassy, Seoul, Mar. 2001.

[180] USITC interview with industry representative, Seoul, Korea, Apr. 26, 2001.

[181] ITU, "World Telecommunication Indicators, 2000/2001."

[182] Federal Communications Commission (FCC), Common Carrier Bureau, "1999 International Telecommunications Traffic Data," Dec. 2000, found at Internet address *www.fcc.gov*, retrieved Apr. 4, 2001; and FCC, Common Carrier Bureau, "Statistics of Common Carriers," 1996, p. 205.

voice service.[183] In terms of outbound direct investment, U.S. telecommunication firms account for one of the fastest growing service segments, registering an average annual growth rate of 24.1 percent during the 1990s.[184]

The Korean telecommunication market is developing at a rapid pace. The introduction of cellular personal communication services in 1997 triggered intense competition among wireless communication providers, resulting in price cuts and industry restructuring.[185] Wireless tariffs decreased by approximately 35 percent in 1999, leaving little room for further price cuts. To maintain competitiveness, Korean wireless firms have been improving their management and financial conditions.[186] Such improvements will likely enable Korean telecommunication services firms to effectively compete with foreign firms in the Korean market.[187] Korean telecommunication firms have increased their overseas' investments since recovering from the country's financial crisis during 1997-98. For example, in 2000, mobile phone operator SLD Telecom won a contract to develop a mobile phone network in Vietnam.[188] Korea Telecom has expressed interest in investing in Bangladesh,[189] and Hanaro Corporation obtained a license in July 2000 to provide Internet-related services in the United States.[190] The U.S. telecommunication services industry remains relatively open to foreign investment, but further Korean investment is unlikely for the foreseeable future.[191]

Motion Pictures[192]

The United States is the world's largest exporter of motion pictures, with U.S. movies viewed in more than 150 countries.[193] The U.S. industry is composed of seven large motion picture producers and distributors[194] and a larger number of smaller,

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[183] USDOC, ITA, "Telecommunication Services," *U.S. Industry & Trade Outlook, 2000*, p. 30-2.

[184] USITC, *Examination of U.S. Inbound and Outbound Direct Investment*, USITC pub. No. 3383, Jan. 2001, p. 3-26.

[185] USDOC, ITA, "Korea - Mobile Communications Services," Market Research Reports: Industry Sector Analyses, STAT-USA database, found at Internet address *www.stat-usa.gov,* retrieved Mar. 26, 2001.

[186] USDOC, ITA, "Korea - Subscribers to Telecom Services," Market Research Reports: International Market Insights, STAT-USA database, found at Internet address *www.stat-usa.gov*, retrieved Apr. 3, 2001.

[187] Ibid.

[188] Reuters staff, "CDMA network planned in Vietnam," Total Telecom Asia, Oct. 11, 2000, found at Internet address *www.totaltele.com*, retrieved July 2, 2001.

[189] "Korea Telecom keen to invest in Bangladesh," Reuters English News Service, June 14, 2001, found at Internet address *www.ptg.djnr.com*, retrieved July 3, 2001.

[190] Yang Sun-Jin, "Korea's Hanaro Gets U.S. License," Total Telecom Asia, July 19, 2000, found at Internet address *www.totaltel.com*, retrieved Apr. 2, 2001.

[191] USITC staff interview with industry representative, Washington, DC, July 3, 2001.

[192] Motion pictures comprise the production and distribution of motion picture disks and recorded video tapes. These services are distributed to consumers through rental or sale of prerecorded work, and projection in movie theaters.

[193] OnLine Production Services, Inc., "Industry Overview," *Corporate Overview*, found at Internet address *www.bcfilm.com*, retrieved Mar. 29, 2001.

[194] The seven firms are Metro-Goldwyn-Mayer Inc.; Paramount Pictures Corporation; Sony Pictures Entertainment, Inc.;Twentieth Century Fox Film Corp.; Universal Studios, Inc.; Walt Disney Company; and Warner Brothers. Sony Pictures and Universal Studios are owned by foreign firms, a Japanese and a French parent, respectively.

independent studios. Of the 461 new U.S. feature films released in 1999, 41 percent came from the seven large studios.[195] The total number of movies produced in the United States increased by 25 percent during 1995-2000, due to higher worldwide demand and increasing modes of distribution.[196] The global film market is expected to exceed $20 billion in 2003, with North America accounting for 45 percent of this spending.[197]

Figure 3-16
Motion pictures: Selected industry data

Item	United States	Korea
Motion picture exports *(million dollars)*	7,500	6
Motion picture imports *(million dollars)*	256	27
Movies produced	461	49
Movie theaters	7,418	508
Gross box office sales *(million dollars)*	6,950	215
Box office sales per capita *(dollars)*	26	5

Note.—Trade and production data are for year 1999. The number of theaters and box office sales data are for 1998.

Sources: Korean Film Commission (KOFIC), "Korean Film Database," and Motion Picture Association of America (MPAA), "U.S. Economic Review."

The Korean film industry, also composed primarily of seven production companies, is much smaller than that of the United States. An escalation in the cost of movie production and a downturn in corporate revenue caused *chaebols* and other investors to curtail their financing of movies beginning in 1993. The number of movies produced dropped to 49 in 1999, down 25 percent from 1995, and about 40 percent of the all-time high of 121 in 1991.[198] The number of movie theaters also decreased from a high of 789 in 1990 to 508 in 1998.[199]

The Korean film industry is undergoing a resurgence, however, due in part to government assistance. The Government of Korea provided a total of $11 million in support to 10 out of the 43 films produced in 1998.[200] Several of the Korean-made movies achieved box office success in 1999, including *Swiri*. The box office receipts of this movie exceed the Korean receipts of the U.S.-made blockbuster *Titanic*, and brought in export revenue from Hong Kong, Taiwan, and Japan. Other Korean-made films have also garnered critical acclaim and generated export revenue.[201] In recent

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[195] Motion Picture Association of America (MPAA), "US Economic Review," found at Internet address *www.mpaa.org*, retrieved Mar. 29, 2001.

[196] Ibid.

[197] ScreenDigest, "World Cinema Market to Hit $20 Billion by 2003: Emerging Markets Lead the Way," June 2000, found at Internet address *www.screendigest.com*, retrieved Mar. 27, 2001.

[198] The companies are 21City, Ahns World Production, Anderson Company, Arcademy21, Atoms Entertainment, A-TV, and b.o.m. Film Productions. Korean Film Commission (KOFIC), "Korean Film Database," found at Internet address *www.kofic.or.kr*, retrieved Mar. 26, 2001.

[199] Korean Film Commission, "Korean Film Database," found at Internet address *www.kofic.or.kr*, retrieved Mar. 26, 2001.

[200] Song Jung A, "Protect or Destroy," *Far Eastern Economic Review*, Feb. 4, 1999, p. 38, found at Internet address *www.feer.com*, retrieved Mar. 23, 2001.

[201] Sun Kyung Yoon, "Storming the Big Screen," *Far Eastern Economic Review*, July 20, 2000, found at Internet address *www.feer.com.*

years, the Korean film industry has turned to new domestic and foreign investors to finance new releases, and is increasingly using foreign actors in an effort to broaden appeal to foreign audiences.[202]

In 1999, the United States exported $7.5 billion and imported $256 million in cross-border film and tape rentals, yielding a trade surplus of $7.2 billion for the industry. Cross-border exports of film and tape rentals to Korea amounted to $83 million, or 1.9 percent of U.S. industry exports. Cross-border imports from Korea were valued at approximately $1 million in 1999, representing 0.02 percent of industry imports.[203]

Korean film export statistics reflect the rapid growth of recent years. According to the Korean Film Commission, revenue from film exports, primarily to Hong Kong, Taiwan and Japan, reached $6.0 million in 1999, up 29-fold from $209,000 in 1995, with the number of exported Korean films increasing from 15 to 75 during the period.[204] In 1999, Korea imported 297 movies, compared to 375 titles in 1995, a decrease of 21 percent. The value of imports decreased more sharply, down 61 percent during the period, to $26.7 million in 1999.[205]

The United States is a net exporter of motion pictures, whereas Korea is a net importer. The U.S. industry benefits from the vast English-speaking global market and from a large domestic audience. On a per capita basis, Americans spent about $26 and Koreans spent about $5 in 1998 at the box office. While most Korean films primarily target the domestic market, the number of Korean films exported has been increasing. For example, Korea exported 15 films in 1995 with a value of $209,000 and 75 films valued at $6 million in 1999.[206] According to industry representatives, the Korean quota on the screening of imported films may have contributed to an increase in domestic movie production and enhanced the competitiveness of the Korean motion picture industry by providing a level of protection from imports while it developed.[207]

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[202] Lee Yeon-Ho, "Mapping the Korean Film Industry," from *Cinemaya,* No. 37, 1997, found at Internet address *www.cinekorea.com*, retrieved Mar. 23, 2001; Sun Kyung Yoon, "Storming the Big Screen," *Far Eastern Economic Review*, July 20, 2000, found at Internet address *www.feer.com*, retrieved Mar. 27, 2001; and Song Jung A, "Protect or Destroy," *Far Eastern Economic Review*, Feb. 4, 1999, p. 38, found at Internet address *www.cinekorea.com*, retrieved Mar. 23, 2001.

[203] USDOC, BEA, *Survey of Current Business*, Oct. 2000, pp. 142-149.

[204] Exports are not restricted to movies produced in 1999; motion pictures released in previous years are included. Export revenue statistics do not show a steady trend, however. In 1996, Korea exported 48 films, for total export revenue of $1.7 million. Korean Film Commission, "Korean Film Database."

[205] Korean Film Commission, "Korean Film Database."

[206] Korean Film Commission, "Korean Film Database," retrieved July 3, 2001.

[207] ITC interview with Korean industry representatives, Seoul, May 21, 2001.

CHAPTER 4
Barriers to Trade

Introduction

In recent years, the Uruguay Round Agreements, the Information Technology Agreement, and numerous other multilateral and bilateral negotiations have further reduced trade barriers in the United States and Korea. However, a number of tariff and nontariff trade barriers still exist between the two countries. Both countries have significant tariff peaks–tariffs above 15 percent–mainly imposed on agricultural, fishery, and textile and apparel products. Industry representatives often regard nontariff barriers, such as import procedures, regulatory requirements, and lack of intellectual property rights protection, as more formidable than tariffs because they are difficult to identify and measure.

This chapter presents the most significant barriers to trade between the United States and Korea identified by industry and government representatives. Some of the policies and practices identified as barriers clearly appear to discriminate against imports. Other measures cited include domestic policies and regulations that apply to both domestic and imported goods and services. However, the removal or modification of many of these nondiscriminatory measures may help to facilitate trade. Exporters contend that these policies and regulations impose additional restrictions and costs that disadvantage their products. Measures adopted for health, safety, or environmental reasons, when applied to imports, may have additional effects that increase the cost of imports or limit market access in some way. In addition, laws and regulations are subject to interpretation by those who administer them, and exporters contend that treatment for domestic and foreign producers is not always equitable. Table 4-1 identifies trade barriers cited by U.S. and Korean industry and government representatives and the products most affected.

Korean Barriers

Import Policies

Charges or restrictions applied to goods and services before they enter the country are broadly classified as import policies. Among these policies are tariffs and taxes, quantitative restrictions, tariff-rate quotas, import clearance procedures, and customs

Table 4-1
United States and Korea: Current direct and indirect trade barriers cited by industry and government representatives

Description		U.S. exports affected	Korean exports affected
Import policies and taxes	Tariffs and tariff-rate quotas	Agricultural and fisheries products	Textiles, apparel, footwear
	Quotas	Rice Motion pictures	Textiles and apparel
	Misclassification	Food preparations and fish	
	Import clearance procedures	Agricultural products	Agricultural products Pharmaceuticals
	Indirect taxes	Automobiles Alcoholic beverages	
	Trade remedy laws		All products, especially steel
	Harbor Maintenance Fee		Maritime-shipped products
Regulations	Lack of transparency	All regulated products	All regulated products
	Sanitary and phytosanitary	Agricultural products, especially apples, shelled walnuts, and oranges	
	Approval, testing, registration, and certification	Agricultural products Pharmaceuticals Cosmetics Medical equipment Automobiles Construction and engineering services	Electrical and electronic machinery
	Reimbursement prices	Pharmaceuticals	
	Advertising	Advertising services Cosmetics and other retail products	
	Packaging	All products, especially cosmetics	
	Banking	Financial services	
	Labeling	All products, especially agricultural products	Textiles Food products Automobiles
	U.S. Merchant Marine Act of 1920		Shipbuilding Shipping services
Lack of intellectual property rights protection	Trademarks, patents, and trade secrets	All IPR-sensitive products, especially pharmaceuticals	
	Copyright	Software Printed materials Audio and video recordings	
Other barriers	Anti-import bias	Pharmaceuticals Citrus Automobiles Live cattle and beef	
	Financial assistance	Manufacturing, especially electronics, paper, and steel	
	Government procurement	Construction goods and services Telecommunications equipment	Steel Textiles and apparel
	Investment restrictions	Broadcast television and radio Cable television	
	Building and fire codes	Wood construction products	

Source: Compiled from Commission staff field work, industry interviews, and public sources.

procedures and classification. These are the first hurdles that U.S. exports must clear in order to enter the Korean market.

Tariffs

Korean simple average applied tariffs are generally higher than U.S. tariffs: 8.9 percent ad valorem in 2000 compared with 5.5 percent for the United States.[1] The low average tariff masks the high rates imposed on many agricultural and fisheries products (table 4-2).[2] A number of articles (approximately 8 percent of Korea's tariff categories) have no set maximum (bound) tariff rates. These include forestry and fisheries products, buses, television receivers, and computers.[3]

Table 4-2
Korea: Selected applied tariffs, 2001

Product description		Applied tariff
		Percent
Dairy	Yogurt	39.4
	Curd	39.4
	Cheese, other than curd	37.2
Beef	Prepared or preserved meat	74.4
	Fresh, chilled, or frozen meat	41.4
	Salted, in brine, dried, or smoked beef	27.9
	Frozen tongues and livers	19.7
	Fresh, chilled, or frozen edible offal	18.6
Fruit, vegetables, and nuts	Prepared or preserved citrus, pears, apricots, cherries, grapes, apples, and popcorn	49.3
	Frozen sweet potatoes	49.3
	Fresh or chilled lettuce and tomatoes	46.5
	Walnuts in the shell	46.5
	Dried apricots, apples, and mixtures of dried fruit and nuts	46.5
	Frozen potatoes, carrots, onions, spinach, and leguminous vegetables	27.9
Beverages	Orange juice	55.8
	Tomato, pineapple, lemon, or lime juice	50.0
	Apple or grape juice	46.5
	Alcoholic beverages	30.0
Food preparations	Peanut butter	50.0
	Containing dry milk and cocoa	37.2
	Jam, fruit jellies, and fruit or nut puree	30.0
	Soups and broths	30.0
	Containing sausages based on meat products	30.0

Source: Korea Customs & Trade Institute, *Tariff Schedules of Korea, 2001.*

[1] The simple average tariff rate is generally higher than the trade weighted average tariff rate, which was 5.9 percent for Korea in 1999 (latest available) and 1.6 percent for the United States in 2000. See USITC, "Value of U.S. Imports for Consumption, Duties Collected, Ratio of Duties Collected, and Ratio of Duties to Values, 1891-2000," retrieved from *www.usitc.gov* on July 10, 2001, and The World Bank *World Development Indicators 2001.*

[2] United States Trade Representative (USTR), *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 276, found at Internet address *www.ustr.gov*, retrieved Apr. 25, 2001.

[3] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 276, and European Union, Market Access Sectoral and Trade Barriers Database, Korea, found at Internet address *http://mkaccdb.eu.int*, retrieved Apr. 25, 2001.

According to a recent World Trade Organization (WTO) report, the complexity and the application of the Korean tariff system constitutes a barrier and provides a significant degree of protection to Korean producers.[4] Although the Uruguay Round Agreements and subsequent tariff reductions have simplified Korea's tariff regime to a certain extent, the system–with well over 100 types and levels of duty–remains an obstacle for many exporters.[5] Because many Korean tariffs are applied at rates below those at which they are bound (the maximum allowable under international agreements), U.S. exporters cannot be certain that the duty will not increase without notice. This uncertainty makes it difficult for exporters to project costs and price goods appropriately. Because applied rates average about 6.3 percentage points less than bound rates, the Korean Government has a substantial opportunity to increase tariffs by applying the bound rate.[6] The Korean Government also imposes temporarily elevated tariffs, referred to as "adjustment" tariffs,[7] mainly on agricultural products and seafood (table 4-3). [8] Adjustment tariffs are often implemented after only a few days' advance notice, which contributes to exporters' uncertainty.[9]

Another impediment to trade is improper classification. Despite assurances and an agreement in writing from the Korean Customs Service to classify imports in accordance with internationally recognized criteria, Korean classification practices still differ from those of its trading partners.[10] Incorrect classifications have reportedly resulted in imports being assessed higher tariffs than if they had been classified correctly. For example, food products containing more than one ingredient, such as potato preparations or flavored popcorn, were classified as the principal ingredient in a category subject to a tariff-rate quota with a very high over-quota tariff. Similarly, imports of ray not accompanied by a government-issued inspection certificate that includes the scientific name of the fish have been classified as skate and assessed a 50-percent ad valorem tariff, instead of the 10-percent tariff applied to ray.[11]

Domestic Tax Policy[12]

In addition to tariffs, the Korean Government imposes several other taxes that influence trade: a value-added tax, a special excise tax, an education tax, and a liquor tax, as well as annual taxes on automobiles (table 4-4). These and other indirect taxes account for 59 percent of all tax revenue and constitute a complicated system

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[4] World Trade Organization (WTO), *Trade Policy Review - Korea: 2000*, found at *www.wto.org*, retrieved Feb. 21, 2001.

[5] Ibid.

[6] Ibid.

[7] The dynamic behavior of adjustment tariffs is not explicitly modeled in the CGE analysis of chapter 5.

[8] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 277, found at *www.ustr.gov*, retrieved Apr. 25, 2001; WTO, *Trade Policy Review - Korea: 2000*.

[9] EU, Market Access Sectoral and Trade Barriers Database.

[10] USTR, *2000 National Trade Estimate Report on Foreign Trade Barriers*, p. 260, found at *www.ustr.gov*, retrieved Mar. 15, 2001; and USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, pp. 281-2, found at *www.ustr.gov*, retrieved Apr. 25, 2001.

[11] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 277.

[12] Domestic tax policies are not explicitly modeled in the CGE analysis of chapter 5.

Table 4-3
Korea: Adjustment tariff rates, 2001

Description		Ad valorem duty	Specific duty, if applicable[1]
		Percent	
Live fish	Eels	30	1,908 w/kg
	Sea bream	65	4,756 w/kg
	Sea bass	65	(2)
	Lochs	50	436 w/kg
Frozen fish	Alaska pollack	30	(2)
	Saury (excluding horn fish)	40	(2)
	Croakers	70	(2)
	Skate	50	(2)
	Alaska pollack fillets	25	383 w/kg
Crustaceans	Frozen shrimps and prawns	35	(2)
	Shrimps and prawns, salted or in brine	60	396 w/kg
Molluscs	Frozen squid	40	(2)
	Frozen poulp squid (octopus)	35	622 w/kg
	Seasoned squid	25	(2)
Other food products	Fresh, chilled, or dried oak mushrooms	70	1,625 w/kg
	Bananas	50	(2)
	Chinese vermicelli	50	441 w/kg
	Precooked rice	50	(2)
	Mae Joo (fermented soybeans)	25	100 w/kg
	Mixed seasonings	50	(2)
Nonfood products	Plywood, veneer panels, and laminated wood	13	(2)
	Woven cotton 3- or 4-thread twill fabrics	16	(2)

[1] The specific duty rate is applied only if it results in a higher duty than the ad valorem duty rate.

[2] Not applicable.

Source: U.S. Department of Agriculture, Foreign Agriculture Service (USDA, FAS) telegram, "Korea's 2001 Applied Tariff Schedule for Agriculture, Forestry, and Fishery Products," prepared by U.S. Embassy, Seoul, Jan. 5, 2001.

that targets luxury goods either by taxing certain categories of products such as perfume and furs or by applying higher tax rates to higher priced goods.[13] These taxes apply to both imports and domestic goods. However, U.S. and EU industry representatives feel this "tax-on-tax" system, in which taxes are calculated on the import value of the product plus insurance, freight, and the tariff, disproportionately affects imports.[14] The inclusion of the tariff in the tax base magnifies the effect of the tariff by at least 10 percent and in many cases between 20 percent and 30 percent. In addition, some taxes, such as education taxes, are levied on the amount paid for other taxes.

[13] WTO, *Trade Policy Review - Korea: 2000.*

[14] American Chamber of Commerce in Korea (AmCham Korea), *Guide to Doing Business in Korea 2000/2001*, p. 216; and EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 86.

Table 4-4
Korea: Selected indirect taxes, 2001

Type of Tax	Products	Rate	Tax base for domestic products	Tax base for imported products
Value-Added Tax	All products except unprocessed agricultural products	10 percent	Open market price plus special excise, liquor, education, and transportation taxes	CIF value of imports plus duty, special excise, liquor, education, and transportation taxes
Special Excise Tax	Recreational machines and equipment, luxury cameras, watches, furs, carpets, and furniture[1]	30 percent	Price at which goods are taken out of the place of manufacture	CIF value of imports plus duty
	Projection and plasma display panel TV's	15 percent		
	Perfumes, colognes, antlers, royal jellies	10 percent		
	Automobiles with an engine displacement greater than 2,000cc and campers	14 percent		
	Automobiles with an engine displacement greater than 1,500cc but less than 2,001cc	10.5 percent		
	Automobiles with an engine displacement of 1,500cc or less	7 percent		
Liquor Tax	Beer	100 percent	Price of liquor carried out of a brewery	Price of liquor taken out of a bonded area
	Soju, whiskey, brandy, liqueur, and other liquors	72 percent		
	Chungju	70 percent		
	Yakju and certain fermented liquors	30 percent		
	Takju	5 percent		
Education Tax	Items subject to special excise tax	30 percent	Special excise tax levy	Special excise tax levy
	Items subject to a liquor tax of over 70 percent	30 percent	Liquor tax levy	Liquor tax levy
	Items subject to a liquor tax of 70 percent or less	10 percent	Liquor tax levy	Liquor tax levy
Annual Automobile Tax	over 2,500cc	220 won/cc	Engine capacity	Engine capacity
	over 2,000cc but less than 2,500cc	200 won/cc		
	over 1,500cc but less than 2,000cc	140 won/cc		
Annual Local Education Tax	Automobiles	30 percent	Automobile tax levy	Automobile tax levy

[1] The tax is on the amount exceeding 2 million won (approximately $1,550), except cameras (1 million won, approximately $775) and furniture (5 million won, approximately $3,875).

Source: Korean Ministry of Finance and Economy, *Korean Taxation 2001.*

The calculation and structure of the liquor tax is another example of how the Korean tax system differs from those of its trading partners in a way that could disproportionately affect imports. The Korean liquor tax is based on value and not on alcohol content, as in many other countries, including the United States and the EU. Imported alcoholic beverages bear a disproportionate share of the tax since they are often higher value products than Korean goods and are subject to higher tax rates than some domestically-produced products.[15]

U.S. automobile exporters have identified Korea's complex system of taxes assessed on automobiles as a barrier. In addition to the 8-percent ad valorem tariff, Korea's tax system includes value-added, special excise, national education, acquisition, registration, and annual local automobile and education taxes. U.S. exporters assert that the Korean special excise, annual automobile, and both education taxes on automobiles, which increase progressively with engine size, discriminate against imported vehicles, since imported vehicles generally have larger engines.[16] U.S. exporters are particularly affected by these taxes since the U.S. auto industry is the world's largest manufacturer of automobiles with an engine displacement of 2,500 cc or greater.[17] Under the 1998 U.S.-Korea Automotive Memorandum of Understanding (MOU), the Korean Government agreed to reform its automobile tax policy. Korea has reduced or eliminated some taxes, but the remaining taxes and the 8-percent tariff continue to lessen the price competitiveness of imported automobiles.[18]

Customs Procedures

Import clearance procedures have been identified by U.S. exporters as a significant impediment to trade with Korea, especially for agricultural products. Import clearance in Korea can take three to six times as long as in other Asian countries.[19] Some of the longest delays are a result of the Korean Ministry of Agriculture and Forestry's inspection program requirements, which include incubation testing for nonquarantine pests and detention for administrative errors on export certificates.[20] In addition, imported food products have to submit to a 25-day detailed quarantine every year, even if there has been no change in the product, the manufacturer, or the importer. A new inspection is required if the product is imported in a differently sized container.[21]

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[15] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 234; and EU, Market Access Sectoral and Trade Barriers Database.

[16] Stephen J. Collins, President, Automotive Trade Policy Council (ATPC), Washington, D.C., written submission to the Commission, May 17, 2001.

[17] Charles D. Uthus, Vice President, ATPC, written submission to the Commission, May 25, 2001.

[18] The annual automobile tax has been reduced and the rural development tax has been eliminated in accordance with the 1998 Automotive MOU. According to a recent publication from the Korean Ministry of Finance, the education tax that is based on the registration tax has not been eliminated as was agreed upon in the MOU. USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, pp. 277, 294; and Ministry of Finance and Economy, *Korean Taxation 2001*, pp. 216-244.

[19] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 281.

[20] Ibid.

[21] EU, Market Access Sectoral and Trade Barriers Database.

Korea requires preapproval for a wider range of imports than do most other countries and, in many instances, the Korean Government has delegated approval of import applications to the local industry association. In order to obtain preapproval, importers must submit extensive documentation, often including business confidential or proprietary information. U.S. exporters report that the preparation of the information is unnecessarily burdensome and that the data submitted are not adequately protected. U.S. exporters have expressed concern regarding the impartiality of these associations' decisions. In addition, U.S. exporters claim that the fees they pay to industry associations responsible for certification benefit the local industry association whose members are often competitors of the U.S. exporters.[22]

Tariff-Rate Quotas, Quantitative Restrictions, and Other Import Policies

Tariff-rate quotas (TRQs) were adopted as a result of the Uruguay Round Agreements as a means of allowing some degree of market access through the "tariffication" of import restrictions. TRQs provide a lower rate of duty for an initial quantity of a given product, with a higher rate imposed on additional (over-quota) amounts. TRQs are imposed mainly on agricultural products. However, U.S. exporters assert that the over-quota tariff rate is usually prohibitively high and that in-quota rates are often not available to them, either because of a low quota fill rate of allotments to domestic industry groups or because in-quota quantities are so low (table 4-5).

Korea has temporarily increased in-quota quantities during the course of the year to meet short supply situations or for other reasons. Most recently, in January 2001, Korea raised 20 in-quota quantities. According to the Korean Ministry of Finance and Economy, in-quota quantities for products such as corn, soybeans, and animal feeds were revised upward in 2001 to correct an imbalance in supply and demand or to increase the availability of inputs for products that generate foreign currency.[23]

TRQs are often administered by quasi-governmental organizations or Korean industry associations producing competing products.[24] Because of the apparent conflict of interest, there are concerns regarding whether quotas are allocated in a nondiscriminatory manner.[25] For example, the Korean Feed Association and the Korean Corn Processing Association control the in-quota allotments for corn, and the Agricultural and Fishery Marketing Corporation has authority over the food grade soybean quota. Korea's citrus TRQ is administered by the Cheju Citrus Cooperative, an association of Korean citrus producers, which has not granted sufficient in-quota

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[22] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 282.

[23] USDA, FAS, *Korea, Republic of: Agricultural Situation MMA Quota Increase 2001*, GAIN Report #KS1016, U.S. Embassy, Seoul, Mar. 30, 2001, found at *www.fas.usda.gov*, retrieved Apr. 20, 2001.

[24] EU, Market Access Sectoral and Trade Barriers Database.

[25] EU, Market Access Sectoral and Trade Barriers Database; and USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 278.

Table 4-5
Korea: Selected tariff rate quotas, 2001

Product Description		Quota	In-Quota Tariff	Over-Quota Tariff
		Metric tons	*Percent*[1]	
Peanuts	Raw in the shell	4,907.3	40.0	238.2
	Raw, shelled		29.3	238.2
	Prepared or preserved		40.0	66.0
Dairy products	Powdered milk, not more than 1.5% fat	896.3	20.0	189.2
	Buttermilk		20.0	92.0
	Powdered milk, more than 1.5% fat	496.6	40.0	189.2
	Butter and fat or oil derived from milk	363.3	40.0	92.0
	Whey	43,822.0	[2]20.0	64.4
Potatoes	Fresh or chilled, not for seed	16,302.0	30.0	314.2
	Flour, meal, powder, flakes, granules, and pellets	[3]10.0	6.6	314.2
	Fresh or chilled for seed	1,644.6	-	314.2
Corn	Dried sweet corn, for seed	[4]247.0	-	382.3
	Other corn for seed		-	339.1
	Feed corn	[6]6,102,100.0	2.2	339.1
	Popcorn		2.2	651.0
	Corn other than feed, seed, or popping		[5]1.0	339.1
	Corn groats and meal		3.0	168.3
	Other corn, not for seed		3.0	172.7
	Corn starch		2.2	233.5
	Dried sweet corn, not for seed		3.0	382.3
Fruits and vegetables	Fruits of the genus capsicum	6,227.0	50.0	279.0 + 6,417 w/kg
	Oranges	43,011.0	50.0	64.7
	Fresh sweet potatoes	16,063.7	20.0	402.2 + 349 w/kg
	Other sweet potatoes		20.0	397.9
	Garlic	12,538.0	50.0	372.0 +1,860 w/kg
	Onions	17,886.4	50.0	139.5 + 186 w/kg

[1] Unless otherwise noted.

[2] The in-quota tariff for whey used for feed is 8 percent.

[3] The quota amount was raised to 60 metric tons on Mar. 23, 2001.

[4] The quota amount was raised to 377 metric tons on Mar. 23, 2001.

[5] The in-quota tariff was lowered from 3 percent on Jan. 1, 2001.

[6] The quota amount was raised to 9,908,028 metric tons on Mar. 23, 2001.

Source: Korea Customs & Trade Institute, *Tariff Schedules of Korea, 2001*; USDA, FAS, telegram, "Korea's 2001 Applied Tariff Schedule for Agriculture, Forestry, and Fishery Products," prepared by U.S. Embassy, Seoul, Jan. 5, 2001; USDA, FAS, *Korea, Republic Of: Agricultural Situation MMA Quota Increase 2001*, GAIN Report #KS1016, U.S. Embassy Seoul, Mar. 30, 2001.

licenses to fill the quota for the last two years.[26] Some Korean TRQs combine raw and value-added products in the same in-quota quantity. U.S. exporters of soybean and corn products have expressed concerns about this policy because it allows low-value raw products to displace higher value processed imports.[27] In addition, U.S. exporters object to the auction method that has been used in some cases to apportion in-quota quantities of agricultural goods such as onions, potatoes, nuts, and oranges. The auction system adds costs to the normal charges that Korean importers face and may be passed along to U.S. exporters.[28]

Korea maintains quantitative restrictions on rice, motion pictures, and television programming. Under the Uruguay Round Agreements, quotas on rice are scheduled to terminate in 2005. Imports are controlled by a state trading entity that administers Korea's minimum-access WTO commitment. Only low grade rice for industrial and processing uses has been imported under the quota. The United States produces primarily high grade rice and has not been competitive vis-a-vis Asian exporters for the low grade products.[29] The U.S. motion picture industry reports that Korea's screen quota represents an impediment to greater U.S. participation in the Korean film market.[30] Since 1986, Korean films must be screened a minimum of 40 percent of the days that a movie theater is open, a significant increase over the 30 day minimum in the early 1970s. Assuming that a theater is open every day, Korean movies must be shown no less than 146 days, although this number may be reduced to as low as 106 days, depending on market conditions or if the theater uses a computerized ticketing system.[31] A Korean Government official reported that 35 percent of ticket sales were generated by Korean films in 1999 and 2000.[32] Percentage restrictions similar to the screen quota are applied to foreign films and other programming on broadcast and cable television.[33]

Regulatory Regime

Exporters view the Korean regulatory regime as the most significant barrier to trade with Korea for nearly every product sector. Both the USTR's *Foreign Trade Barriers Report* and the EU's Market Access Database identify this regime as imposing vague, arbitrary, or unnecessarily burdensome standards, testing, and certification regulations that negatively affect foreign firms' ability to sell goods and services in Korea.[34] Exporters state that their principal problem with the Korean regulatory

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[26] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 280.
[27] Ibid., p. 278.
[28] Ibid.
[29] Ibid., pp. 278-279
[30] Motion Picture Association of America, "U.S. Economic Review," found at *www.mpaa.org*, retrieved Mar. 29, 2001.
[31] USITC staff interview with U.S. industry representative, Seoul, Korea, Apr. 22, 2001; and USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 288.
[32] USITC staff interview with Korean Government official, Seoul, Korea, May 2, 2001.
[33] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 288.
[34] EU, Market Access Sectoral and Trade Barriers Database; and USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, pp. 282-284.

process is lack of transparency. They claim that laws are not specific and that the details of implementation are left to regulators. Exporters also claim that the actual regulations do little to clarify the requirements, and significant differences exist between the objectives cited in law and the implementing regulations.[35] According to a U.S. Department of Commerce report, the rule-making process itself is not transparent and proposed or revised rules may be issued with little or no time provided for public comment or for making the necessary changes to comply with the rule.[36] In some cases, rules are applied retroactively.[37] Regulations are not necessarily made public and may be written in general terms that do not identify specific requirements, and regulators' internal guidance is usually unpublished. U.S. firms contend that the manner in which a regulation is applied depends mainly on the individual interpretation of the regulator.[38] As a result of these problems, exporters maintain that Korean regulations are applied inconsistently, raising the level of risk for foreign firms exporting to Korea and representing a significant barrier to market entry.[39]

Agricultural and Food Products

Product and safety standards are considered to be the greatest barriers to U.S. exports of agricultural and food products to Korea.[40] Food product imports need to be registered with the Korea Food and Drug Administration (KFDA) and must comply with the Korean Food Code, the Korean Food Safety Code, and the Korean Food Additives Code. These codes do not conform with international standards such as the Joint Food and Agriculture Organization/World Health Organization Expert Committee on Food Additives (JECFA) standards.[41] KFDA made changes in its food and labeling standards in 2000 to bring them closer to international standards, but significant differences remain.[42] The Food Additives Code still bans many ingredients that international standards deem safe and KFDA continues to require premarket approval for food products and additives.[43]

According to U.S. industry sources, one of the main causes of many standards-related problems is that Korean authorities approve food ingredients and additives from an authorized list and do not recognize JECFA or third-country competent authorities' decisions. The lack of flexibility in the list, the limited number of items on the list, and the unchanging nature of item formulations are the source of many food products

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[35] EU, Market Access Sectoral and Trade Barriers Database.

[36] U.S. Department of Commerce (USDOC), "Country Commercial Guide For Korea, Fiscal Year 2001," p. 88, found at *www.state.gov*, retrieved Apr. 25, 2001.

[37] Ibid.

[38] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 284; USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 88.

[39] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 284; USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," pp. 79, 88.

[40] USITC interview with U.S. industry representatives, Washington, D.C., Apr. 26, and May 21, 2001. Tariffs are more important for products that are price sensitive and/or have little product differentiation.

[41] USITC interview with U.S. industry representatives, Washington, D.C., Apr. 26, 2001 and May 21, 2001.

[42] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 281.

[43] Ibid., p. 282.

difficulties.[44] If a product's ingredients or ingredient formulations fall outside the narrow scope of the Korean regulation, it must pass a lengthy and difficult approval process, even though the same product has been accepted and used in many countries for a number of years.[45] Some companies, like Hershey, have found standards-related barriers so difficult to overcome that they have ceased exporting into Korea or have begun to produce their products in Korea.[46]

U.S. exporters contend that the administration of the food standards is arbitrary and not necessarily based on safety concerns. They claim, for example, color changes or widely accepted variations within ingredient formulation not accommodated in the Korean regulation can require new product testing of a previously tested and approved product. They cite instances where imports have been denied entry even though the Korean Government acknowledged that the change did not constitute a safety issue.[47] According to U.S. industry representatives, the sole criterion was that the ingredient did not appear exactly as it had before or as it does in the list of approved food additives. U.S. exporters cite Korean intransigence in adopting international food standards and in strictly interpreting their own Food Code, Food Safety Code, and the Food Additives Code as the reason that many food product imports do not reach the Korean market.[48]

Korea's beef regulations have been a subject of dispute between the United States and Korea. Korean regulations require imported beef to be sold in separate stores, limit the manner of its display, restrict the distribution and sale of imported beef by confining import authority to a small number of government and commercial entities, and impose a markup on sales of imported beef.[49] The United States filed a complaint with the WTO regarding Korea's beef regulations, charging that these regulations were discriminatory. In July 2000, a WTO Dispute Settlement Panel found that these requirements violated Korea's WTO commitments.[50] This decision was affirmed by the WTO Appellate Body in December 2000.[51] Korea has agreed to revise its regulations to comply with the ruling by September 10, 2001.[52]

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[44] USITC interview with U.S. industry representatives, Washington, D.C., Apr. 26, and May 21, 2001; EU, Market Access Sectoral and Trade Barriers Database.

[45] USITC interview with U.S. industry representatives, Washington, D.C., Apr. 26, and May 21, 2001; EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 106; and USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 282.

[46] USITC interview with U.S. industry representatives, Washington, D.C., Apr. 26, 2001.

[47] USITC interview with U.S. industry representatives, Washington, D.C., Apr. 26 and May 21, 2001.

[48] USITC interview with U.S. industry representatives, Washington, D.C., Apr. 26, 2001.

[49] WTO, *Overview of the State-of-Play of WTO Disputes*, May 2, 2001, found at *www.wto.org*, retrieved May 10, 2001.

[50] WTO, Dispute Settlement Panel, *Korea - Measures Affecting Imports of Fresh, Chilled, and Frozen Beef*, WT/DS161/R and WT/DS169/R, adopted January 2001 in WT/DS161/11 and WT/DS169/11.

[51] WTO, Appellate Body, *Korea - Measures Affecting Imports of Fresh, Chilled, and Frozen Beef*, WT/DS161/AB/R and WT/DS169/AB/R, AB-2000-8, adopted January 2001 in WT/DS161/11 and WT/DS169/11.

[52] WTO, *Overview of the State-of-play of WTO Disputes*, May 2, 2001.

A proposed regulation, initially scheduled to be implemented in January 2001 but delayed until 2002, imposes new rules of origin for animals slaughtered for export to Korea. Because the Korean Government stated that this regulation is not a public or animal health requirement, the United States is concerned that this regulation may be an attempt to continue the trade-distorting policies that were ruled noncompliant by the WTO.[53]

Other obstacles to trade in agricultural products include prohibitions on the sale of rice, sanitary and phytosanitary measures, and shelf-life limitations. Controls on imported rice are the most severe and have effectively stopped U.S. exports of rice to Korea. A state trading company controls every aspect of rice imports and Korean law limits imported rice to processing uses and prohibits the sale of imported table rice to consumers.[54] Because the minimum quality standard for rice destined for processing is relatively low, U.S. exporters have been unsuccessful in the quota bidding process, compared to Asian producers.[55] A number of food products, including perishable products such as apples and shelled walnuts, have been delayed on phytosanitary grounds, to evaluate U.S. fumigation or pest management programs or documents. Although other U.S. export markets clear agricultural products without similar examinations, Korean reviews have posed serious obstacles for U.S. exporters.[56] One example is the requirement that all U.S. oranges be fumigated to eliminate red scale; U.S. exporters feel that such fumigation is excessive.[57] Shelf-life limitations on many products have eased but those on bottled water remain unnecessarily restrictive and burdensome for exporters to Korea.[58]

Pharmaceuticals and Medical Equipment

USTR has found Korean pharmaceutical testing requirements to be burdensome, redundant, and nonscience-based.[59] Korean regulations make no provision for accepting pharmaceuticals manufactured to approved and accepted international standards and accompanied by the manufacturer's Certification of Quality Assurance without additional local testing.[60] Product registration requires local testing of three lots of imported drugs, vaccines, and biologics.[61] After registration, KFDA requires local testing of each batch of imported finished drugs. Testing requirements are particularly burdensome for finished biological products during the registration process because KFDA demands at least three local certificates of analysis for at least three batches each from the local importer in addition to results from overseas testing by the foreign manufacturing company. In addition to the added cost and delays in

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[53] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 279.
[54] USITC interview with Korean Government representative, Seoul, Korea, Apr. 27, 2001.
[55] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 279.
[56] Ibid., pp. 282-283.
[57] Andrew Lavigne, Executive Vice President and CEO, Florida Citrus Mutual, written submission to the Commission, May 25, 2001.
[58] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 282.
[59] USTR, *Identification of Trade Expansion Priorities Pursuant to Executive Order 13116*, Apr. 30, 2001, p. 26, found at *www.ustr.gov*, retrieved May 10, 2001.
[60] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 180.
[61] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 283.

entering the market caused by these requirements, importers contend that there is often a lack of testing facilities with the appropriate technology to perform the tests.[62]

According to Korean Government officials, December 2000 testing guidelines removed the requirements to conduct clinical trials in Korea to register new medicines and to submit data proving the drug's safety for the Korean population unless clinical trials elsewhere have shown "ethnic sensitivity."[63] Pharmaceutical manufacturers contend that the revised rules do little to relieve the testing burden because the Korean regulations, contrary to international norms, require that ethnic sensitivity data "be generated from Korean people living inside or outside Korea."[64] In addition, exporters feel that there is a presumption of ethnic sensitivity on the part of the KFDA.[65]

The Korean Ministry of Health and Welfare (MHW) checks wholesale pharmaceutical prices and margins in hospitals and clinics twice a year under the "Actual Transaction Prices" (ATP) system established in November 1999 and sets a schedule of reimbursement prices.[66] In some instances the reimbursement prices under the ATP are so low that products have been withdrawn from the market. According to the USTR's *Foreign Trade Barriers Report*, ATP's lack of transparency and explanations of rate cuts also remain problematic.[67] Another problem identified by exporters is that foreign companies receive different treatment under the ATP. According to European industry sources, the November 2000 reimbursement price adjustment shows different pricing for the same product depending on the manufacturer. In many cases, multinational pharmaceutical companies were compensated at lower levels than were Korean manufacturers or Korean import companies.[68] In addition, if a wholesaler narrowed its margin, the MHW lowered the suppliers' prices to wholesalers. More troubling to exporters are cases where the MHW broadened price cuts from a specific product to all products in the same category.[69]

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[62] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 180.

[63] Korean Government representative, interview by USITC staff, Seoul, Korea, Apr. 27, 2001.

[64] EU, *Trade Barriers Regulation*, pp. 17-19, found at Internet address *http://europa.eu.int*, retrieved May 10, 2001. The International Conference on Harmonization's (ICH) guidelines state only that data need to be relevant to the population in which the new drug is to be introduced and include Korea in the Asian ethnic group. Pharmaceutical Research and Manufacturers of America (PhRMA), "Issues Around the World," found at Internet address *www.phrma.org*, retrieved May 19, 2001.

[65] Korean Government representative, interview by USITC staff, Seoul, Korea, Apr. 27, 2001; EU, *Trade Barriers Regulation*, pp. 17-19, found at Internet address *http://europa.eu.int*, retrieved May 10, 2001; PhRMA, "Issues Around the World," found at Internet address *www.phrma.org*, retrieved May 19, 2001; and, USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 283.

[66] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 186.

[67] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 295; and USTR, *Identification of Trade Expansion Priorities Pursuant to Executive Order 13116*, Apr. 30, 2001, p. 26, found at *www.ustr.gov*, retrieved May 10, 2001.

[68] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 166; EU, *Trade Barriers Regulation*, p. 23, found at *http://europa.eu.int*, retrieved May 10, 2001.

[69] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 186.

The regulations for approving medical equipment can be lengthy and costly.[70] EU industry representatives contend that these regulations do not automatically grant acceptance of products that have minor differences from previously approved products. Machines that differ only slightly in shape or configuration must be registered as if they were new products. EU sources state that a new product registration is also required if an option is added to subsequent imports of an approved product.[71]

Cosmetics

U.S. exporters of cosmetics regard the testing and import authorization requirements as the most burdensome regulations that they face in Korea.[72] In 2000, a new law was passed that separated cosmetic and pharmaceutical regulation and created a new category called "cosmeceuticals," cosmetics that manufacturers claim have functional or therapeutic effects. Unlike pharmaceutical regulations, no protection of trade secrets or intellectual property is provided for the information that is submitted to prove functional or therapeutic claims.[73] The new regulations require that cosmeceutical manufacturers prove their claims, but the definition of cosmeceutical is broad and the standards of efficacy are vague.[74] Because there are no published standards, KFDA is processing cosmeceutical applications on a nontransparent basis that raises concerns regarding the fairness of its decisions. Of the first 500 applications submitted since July 2000, 101 have been approved and all but one are for Korean products.[75]

Cosmetic advertising is regulated by MHW and is broadly defined to include all product information, including labels, brochures, inserts, and in-store advertising.[76] Cosmetic advertising must be submitted to the Korean Cosmetic Industry Association (KCIA) for review and approval. However, U.S. exporters report that KCIA approval guidelines are unclear, increase market risk, and are concerned that the approval process may not be impartial.[77] In addition, the review process gives Korean competitors advance notice of advertising campaigns and new product introductions.[78] U.S. exporters feel that cosmetic advertising regulations give the Korean industry control over terminology, packaging, and promotion, and access to confidential business information.[79]

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[70] USDOC, "Country Commercial Guide for Korea, Fiscal Year 2001," p. 78.

[71] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 166.

[72] USITC, *U.S.-Korea FTA: The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea*, May 17, 2001, transcript of the hearing, p. 13.

[73] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 295-296.

[74] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 295; and USITC, *U.S.-Korea FTA*, May 17, 2001, transcript of the hearing, pp. 8-10.

[75] USITC staff interview with U.S. industry representative, Washington, D.C., Apr. 26, 2001; and USITC, *U.S.-Korea FTA*, May 17, 2001, transcript of the hearing, pp. 9-11. It is not known how many of the 500 applications were for products not made in Korea.

[76] USITC staff interview with U.S. industry representative, Washington, D.C., Apr. 26, 2001.

[77] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 288.

[78] Ibid.

[79] USITC, *U.S.-Korea FTA,* May 17, 2001, transcript of the hearing, p. 12.

Foreign cosmetic manufacturers view Korea's packaging regulations as restricting their ability to market their products. Korean packaging regulations are based on the Law of Economy and Recycling of Resources and Notice 68 of the Ministry of Environment and set limits on the amount and size of packaging relative to the product.[80] Korean regulations limit cosmetics packaging to two layers, including an outer layer of cellophane. However, most imported cosmetics have two layers of packaging plus a third, outer wrapper of cellophane. Foreign cosmetic manufacturers consider these three layers essential to maintaining the product's fragrance and efficacy. The same regulation limits empty space to 10 percent in the product container and 25 percent in the box. Cosmetic exporters consider the product container as a marketing tool that conveys brand image and feel that these restrictions limit their ability to market their products.

Automobiles

Under the 1998 U.S.-Korea Automotive MOU, the Korean Government agreed to simplify its standards and certification requirements.[81] Although Korea recently acceded to the 1998 Global Technical Regulations for Wheeled Vehicles, Equipment, and Parts, it continues to adopt and maintain standards that "impose serious barriers to imported products" that are not recognized internationally.[82] Korea's application of U.S., EU, and Korean standards results in a unique system of requirements that makes adapting existing vehicle models difficult and expensive.[83] In addition, the Korean Government has proposed a number of revisions to current standards or the adoption of new standards.[84] These changes would require modifications in the design and manufacture of automobiles sold in the Korean market. U.S. exporters claim that these changes, coupled with the uncertainty caused by the lack of transparency in Korean regulations, would further impede market access.[85]

Professional and Financial Services

Foreign service providers encounter significant regulatory obstacles in the Korean market for construction, engineering and banking services. Foreign construction and engineering companies find registration and bonding procedures burdensome.[86] A deposit of 1 billion won, approximately $780,000, is required to obtain a construction license and the volume of construction that may be performed in the first year is limited.[87] To perform construction supervision, a separate license is required.

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[80] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 88.

[81] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 294.

[82] Charles D. Uthus, Vice President, ATPC, written submission to the Commission, May 25, 2001; and USTR, *Identification of Trade Expansion Priorities Pursuant to Executive Order 13116*, Apr. 30, 2001, p. 19.

[83] USITC, *U.S.-Korea FTA*, May 17, 2001, transcript of the hearing, p. 79.

[84] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 283.

[85] USITC, *U.S.-Korea FTA*, May 17, 2001, transcript of the hearing, p. 27.

[86] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 287.

[87] AmCham Korea, *Guide to Doing Business in Korea 2000/2001*, p. 172.

Obtaining this license is a lengthy, complicated process that requires government and industry approvals and extensive corporate documentation in Korean that must be notarized by the embassy of the firm's home country.[88]

Capital requirements for banks are applied differently to foreign and local banks. Korean banks are measured in terms of global capital, while foreign banks, despite their branch status, are measured in terms of local capital. This capital requirement standard for foreign banks is contrary to the concept of global equity supported by the Bank of International Settlements. Lending and business ratios are determined in Korea based on these measures of capital. Such requirements effectively limit business opportunities for foreign bank branches.[89]

Broadcast Advertising

U.S. firms claim that approval and censorship of advertising increase the risk and cost of doing business in Korea.[90] The Korean Broadcast Commission is the governmental authority that approves local broadcast advertising and the Korean Advertising Review Board (KARB) carries out censorship procedures.[91] The KARB is made up of Korean advertising companies and has a significant amount of discretion, which has raised concerns regarding its impartiality. Under the Korean Broadcast Law, television and radio advertising must be submitted in final form to the KARB for approval, which can be an expensive undertaking if the advertising is rejected. Censorship procedures are also subject to inconsistent interpretation with little opportunity for review of negative decisions.[92] In addition, the Korean Fair Trade Commission determines whether an advertisement accurately portrays its claims and certain Korean industry trade associations have the power to approve or reject advertisements related to their industries.[93]

Labeling

U.S. exporters consider Korea's labeling requirements arbitrary, inconsistent, and excessive.[94] Different requirements apply to different categories of goods, but information such as batch codes and date of manufacture must be included for most products.[95] Country of origin marking is required on both the package and the good

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[88] Ibid., p. 174.

[89] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, pp. 40 and 50; USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 290; industry representatives, electronic communication, Mar. 30, 2001; and USITC staff interview with AmCham representative, Seoul, Korea, Apr. 22, 2001.

[90] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 298.

[91] USITC staff interview with Korean Government official, Seoul, Korea, May 2, 2001; AmCham Korea, *Guide to Doing Business in Korea 2000/2001*, p. 160; USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 35.

[92] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 106.

[93] USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 35, found at *www.state.gov*, retrieved Apr. 25, 2001.

[94] U.S. industry representative, interview by USITC staff, Washington, DC, Apr. 26, 2001.

[95] AmCham Korea, *Guide to Doing Business in Korea 2000/2001*, p. 217.

itself. Because other markets do not have this requirement, companies exporting to Korea must either change their marking process for all goods or set up separate manufacturing and packaging procedures for goods intended for Korea. Either option would increase the manufacturer's costs.[96] A pending rule would require that a country of origin marking be prominently displayed on the front label of food products. Not only would this require a new label design but it would interfere with product names, trademarks, and marketing strategies.[97] Industry representatives contend that such placement distinguishes foreign products and is likely to facilitate negative perceptions of imports.[98]

Another important labeling concern for U.S. exporters are the new and pending regulations regarding the labeling of products that contain genetically modified organisms (GMOs). As is the case in many other economies, including the EU and the United States, Korea is currently developing regulations to deal with any potential public health and safety issues associated with GMOs. Since March 2001, biotechnology labeling of unprocessed corn, soybeans, and soybean sprouts is required if the shipment contains at least 3 percent genetically enhanced commodities. Starting in July 2001, 27 categories of processed food products must be labeled if they incorporate 3 percent GMOs or more. These regulations will be extended to genetically modified potatoes in 2002. Exporters are concerned that because no verification procedures have been approved and the required documentation has not been specified, inconsistencies in the application of the regulation are likely.[99]

Intellectual Property Rights Protection

Trademarks, Patents, and Trade Secrets

Korea's laws regarding intellectual property have been moving toward international norms[100] and Korean government officials contend that Korea's intellectual property rights regime conforms to the TRIPS Agreement.[101] However, many WTO members, including the United States, the EU, and Japan, have expressed concern that Korean laws are not fully TRIPS compliant, and that enforcement has been inadequate.[102]

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[96] U.S. industry representative, interview by USITC staff, Washington, DC, May 21, 2001; and EU, Market Access Sectoral and Trade Barriers Database, found at Internet address *http://mkaccdb.eu.int*, retrieved Apr. 25, 2001.

[97] U.S. industry representative, interview by USITC staff, Washington, DC, Apr. 26, 2001.

[98] AmCham Korea, *Guide to Doing Business in Korea 2000/2001*, p. 217.

[99] USDA, FAS, *Korea: Biotechnology: Biotech Labeling Requirements for Processed Food Products*, May 16, 2001, found at Internet address *www.fas.usda.gov*, retrieved May 10, 2001; USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 284, found at Internet address *www.ustr.gov*, retrieved Apr. 25, 2001.

[100] Recent revisions to Korea's IPR laws include broader protection for well-known trademarks (Jan. 9, 2001), expedition of the examination process for patents and utility models and an upward adjustment to the penalty amount for infringement (July 1, 2001), adoption of a quick registration system of utility models (July 1, 1999), and adoption of an electronic filing system (Jan. 1, 1999).

[101] WTO, *Trade Policy Review, Republic of Korea, Minutes of Meeting,* Oct. 31, 2000, WT/TPR/M/73.

[102] Ibid.

Counterfeiting and piracy deter U.S. exporters from entering the Korean market, and the infringing goods erode the potential U.S. exporters' market share. Korea was placed on the Special 301 priority watch list in 2000 due to the large number of complaints made regarding the government's failure to protect intellectual property rights.[103] According to the American Chamber of Commerce in Korea, counterfeit merchandise is readily available in Korea, and many Korean counterfeiters manufacture infringing goods solely for export.[104]

One of the most common intellectual property infringements affecting U.S. exporters is unauthorized use of a protected trademark.[105] Although the Korean Trademark Act provides protection for holders of foreign trademarks, it only prohibits the use of an identical or similar trademark on goods that are identical or similar to the "designated goods for which the trademark is registered."[106] If, for example, a trademark was registered for use on food packaging, such as a soft drink label, under the Korean Trademark Law this trademark might legally be used on luggage or clothing by other than the registrant.[107] The Korean trademark registration system is based on "first to file," unlike the U.S. system that is based on "first commercial user." As a result, the first person to file a successful application with the Korean Intellectual Property Office (KIPO) is the legal owner of the trademark in Korea. The fact that a foreign company had registered the trademark outside Korea and had been using it in commerce does not automatically invalidate the Korean trademark holder's claim.[108] According to a U.S. industry representative, citrus exports to Korea by a number of U.S. producers were blocked because a Korean company had registered their brand in Korea.[109]

The lengthy and costly process of getting infringing trademarks canceled has deterred some U.S. companies from pursuing legal remedies.[110] Also, U.S. industry representatives assert that enforcement actions are taken mainly in cases of obvious trademark piracy and although some penalties have been increased over the past few years, current criminal sanctions provide little deterrent to pirates and are usually far below the maximum allowed by law.[111] Although the number of trademark infringement raids, prosecutions and convictions increased by approximately 65 percent from 1996 to 1999, jail terms declined significantly from 866 (32 percent of

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[103] USTR, "Fact Sheet," *Special 301 on Intellectual Property Rights*, May 1, 2000, found at *www.state.gov*, retrieved July 13, 2001.

[104] AmCham Korea, *Guide to Doing Business in Korea 2000/2001*, p. 120.

[105] USDOC, "Country Commercial Guide for Korea, Fiscal Year 2001," pp. 43-4.

[106] KIPO, *Anti-counterfeiting Activities in Korea*, pp. 7-8.

[107] USITC staff interview with U.S. industry representative, Washington, D.C., Apr. 26, 2001.

[108] USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," pp. 43-4.

[109] Andrew Lavigne, Executive Vice President and CEO, Florida Citrus Mutual, written submission to the Commission, May 25, 2001.

[110] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 287, found at *www.ustr.gov*, retrieved Apr. 25, 2001.

[111] AmCham Korea, *Guide to Doing Business in Korea 2000/2001*, p. 120. The maximum criminal penalty under the revised Trademark Law is 7 years in prison or a fine of approximately $77,000. Under the Unfair Competition Prevention and Trade Secrets Protection Law, which protects companies' proprietary or confidential information, the maximum punishment for trademark infringement is 3 years in prison or a fine of approximately $23,000. Korean Intellectual Property Office (KIPO), *Anti-counterfeiting Activities in Korea*, pp. 7-8.

convictions) in 1996 to only 134 (3 percent of convictions) in 1999. Convictions resulting in a fine of $4,200 or less made up 90 percent of the total in 1996 and 94 percent in 1999.[112]

Many Korean approval, testing, and certification procedures require the submission of proprietary information, from business and marketing plans to formulas and schematic drawings. U. S. firms report that, although the release of business confidential information to unauthorized entities is forbidden by Korean law, submitted information has not been given sufficient protection by government officials and, in some cases, has been made available to Korean competitors or to their trade associations.[113] In other instances, the designated approving or certifying body is the local industry association and is made up of Korean competitors. For example, imported medical equipment is inspected by associations and institutes closely associated with the domestic industry.[114] U.S. firms in many industries, especially chemicals and confectionary, have had problems with the unauthorized release of proprietary information submitted to gain regulatory approval.[115] As a result, companies may limit the number or type of products they export to Korea or forgo the Korean market entirely rather than compromise their intellectual property.

The pharmaceutical industry reports problems with protection of patents as well as with protection of proprietary information submitted to government agencies.[116] Information submitted to KFDA is granted protection under the Pharmaceutical Affairs Act. However, proprietary information is also submitted to the Korean Pharmaceutical Manufacturers Association (KPMA), which has many regulatory roles. Because the KPMA's members include the major Korean pharmaceutical companies, U.S. exporters are required to reveal their research and other proprietary information to their Korean competitors, who are not required by law to protect it.[117] In addition, foreign companies' clinical data submitted to KFDA for registration has been used in support of local producers' registration applications, even though such practices are contrary to the TRIPS Agreement.[118] Another problem for pharmaceutical companies is the lack of coordination between KFDA and KIPO. As a result, drugs may be granted marketing approval by KFDA even though they violate existing patents that have been filed with KIPO.[119] Both the lack of coordination between KFDA and KIPO concerning

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[112] WTO, *Trade Policy Review, Republic of Korea, Minutes of Meeting*, WT/TPR/M/73, Oct. 31, 2000, p. 109. The fine used in this example is 5,000,000 won and was converted using the 1999 exchange rate of 1188.8 won/dollar.

[113] USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 87.

[114] EU, Market Access Sectoral and Trade Barriers Database.

[115] USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 87.

[116] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, pp. 285, 294.

[117] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, pp. 198-199.

[118] PhRMA, "Issues Around the World," found at *www.phrma.org*, retrieved May 19, 2001; USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 87; USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 296; EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, pp. 184, 198-199.

[119] PhRMA, "Issues Around the World;" USDOC, *Country Commercial Guide for Korea, Fiscal Year 2001,* p. 87; USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 286.

marketing approval for pharmaceuticals and the inadequate data protection discourage the introduction of innovative drugs.[120] Only a company that possesses a Korean Good Manufacturing Practices (KGMP) approved factory may manufacture drugs or contract to manufacture drugs in Korea. As a result, companies without manufacturing facilities in Korea that prefer to export intermediate products for final processing must license their product to a local manufacturer. Some research-based pharmaceutical companies are hesitant to do this because they will have to surrender confidential information to the local manufacturer in order to get marketing approval.[121]

Copyright

The International Intellectual Property Alliance (IIPA) estimates losses to U.S. companies as a result of copyright infringement in Korea of $325 million in 2000. The largest segment was video and personal computer game software, with losses estimated at $157 million and accounting for 90 percent of the Korean market for that product; business software applications was the second largest category accounting for $102 million of total estimated losses.[122] According to IIPA's *2001 Special 301 Report: South Korea*, copyright violations are so pervasive that a police raid of an electronics market found that 96 percent of vendors were installing pirated operating systems and 80 percent were loading illegal applications software on computers that they were selling.[123] Unauthorized copying of audio and video recordings and books is extensive. For-profit Internet sites in Korea distribute audio recordings, and pirated books and videos appear in the Korean markets within days of the authorized releases.[124] Unauthorized copying and binding of textbooks and other printed materials at universities and retail photocopy stores is responsible for widespread copyright infringement.[125]

The IIPA report identifies the most important issues as deficiencies in the Copyright Act and the Computer Program Protection Act, a lack of strong consistent enforcement, and the inability of the judicial system to provide a deterrent to future piracy.[126] Current Korean legislation contains provisions that do not comply with international agreements or that allow unauthorized copying and distribution of protected works. The Copyright Act does not provide full retroactive protection for pre-existing works as required by the TRIPS Agreement.[127] This law also contains a provision that allows

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[120] USTR, *Identification of Trade Expansion Priorities Pursuant to Executive Order 13116*, Apr. 30, 2001, p. 26.

[121] EU Chamber of Commerce in Korea, *Trade Issues & Recommendations 2001*, p. 178; EU, *Trade Barriers Regulation*, p. 20.

[122] International Intellectual Property Alliance (IIPA), *2001 Special 301 Report: South Korea*, p. 214, found at *www.iipa.com*, retrieved Apr. 25, 2001.

[123] Ibid.

[124] Ibid., pp. 217-219.

[125] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 286 and IIPA, *2001 Special 301 Report: South Korea*, p. 218.

[126] IIPA, *2001 Special 301 Report: South Korea*, p. 211.

[127] EU, Market Access Sectoral and Trade Barriers Database; USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 86; USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 285.

libraries and similar institutions to make unlimited copies of copyrighted material, including sound recordings, for outside use and for transmission over interlibrary networks.[128] The Computer Program Protection Act contains exceptions to copyright protection that give pirates some degree of protection. First, the Act permits the use of software for judicial proceedings and in public or private schools. The latter exception allows public or school libraries to share freely the electronic versions of publications, raising serious concerns for the U.S. business software industry.[129] Second, the Act permits copying for personal use in a "limited place" which has been taken to mean the consumer's home. Computer vendors have used these exceptions to escape prosecution by installing "complimentary" software on computers in their customers' homes.[130]

Lack of strong enforcement and minimal penalties for violations contribute to the high rate of copyright infringement in Korea. Enforcement actions are sporadic and are often announced in advance, either as general crackdowns or to the companies and government offices that are the targets of the investigation, allowing pirated material to be removed before inspectors arrive.[131] Investigations generally exclude types of software, such as operating systems, that are not ordinarily produced by Korean companies. In those cases where a defendant is found guilty, sentences are rarely made public and most fines for copyright infringement are less than $1,000.[132] As a result, legal remedies offer little deterrent.[133]

Other Barriers

Industry representatives claim that Korean organizations that perform regulatory and administrative functions support anti-import sentiment. The KPMA, which has a role in pharmaceutical regulation, recently sent out letters requesting doctors to prescribe only Korean-made drugs.[134] The National Agricultural Cooperative Federation, an organization that assists the Korean Ministry of Agriculture in its loan program, participated in a boycott against the products of Korean companies that imported citrus. The Cheju Citrus Cooperative, the industry association that administers the citrus TRQ, received complaints about imported citrus from Korean producers and subsequently canceled its tender for in-quota citrus.[135] Industry groups and unions have organized anti-import demonstrations.[136]

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[128] IIPA, *2001 Special 301 Report: South Korea*, p. 221.

[129] USDOC, "Country Commercial Guide For Korea, Fiscal Year 2001," p. 87.

[130] AmCham Korea, *Guide to Doing Business in Korea 2000/2001*, p. 122.

[131] USITC staff interview with AmCham Korea representative, Seoul, Korea, Apr. 22, 2001; IIPA, *2001 Special 301 Report: South Korea*, p. 214.

[132] WTO, *Trade Policy Review, Republic of Korea, Minutes of Meeting,* p. 109.

[133] IIPA, *2001 Special 301 Report: South Korea*, p. 212.

[134] USITC staff interview with AmCham Korea representative, Seoul, Korea, Apr. 22, 2001.

[135] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 286 and IIPA, *2001 Special 301 Report: South Korea*, p. 293.

[136] U.S. Department of State telegram, "Australian Cattle Imports Trigger Farmer Demonstrations and Anti-Import Violence," message reference No. 110502Z, prepared by U.S. Embassy, Seoul, May 11, 2001 and Jay Solomon and Hae Won Choi, "For Korea's Daewoo Motor, a hard sale," *Wall Street Journal*, p. A21, May 23, 2001.

In the past, Korean industrial policies have encouraged overproduction and exports through allocation of bank lending, government financial assistance, and incentives to expand or maintain excess capacity and nonviable companies.[137] The government-controlled Korean Development Bank (KDB) has organized financial support to several large companies that were on the verge of defaulting on their obligations, and a significant share of this assistance has been directed toward export-oriented companies.[138] Of particular concern to U.S. companies is KDB's and creditor banks' purchase or refinancing of 80 percent of the maturing bonds of financially strapped Korean companies such as Hynix, a semiconductor manufacturer that was part of the Hyundai group.[139] This company alone accounts for more than 4 percent of total Korean exports.[140] U.S. industry representatives contend that this financial assistance is a subsidy and, because of Korean companies' export focus, could be inconsistent with the WTO Agreement on Subsidies and Countervailing Measures.[141] The Hyundai group is one of the main beneficiaries of financial support–nearly $9 billion in loans and other aid was provided to the various members of this group between May 2000 and April 2001.[142] KDB reportedly is planning additional financing to Hynix and other companies to cover $15 to $20 billion in bonds coming due in 2001. The Korean Government asserts that KDB support will not continue into 2002 and that it is only a temporary measure to avoid economic disruption.[143]

Recent reforms are addressing these issues, but the effects of past policies may take some time to change. The government-controlled Korea Industrial Bank's stake in POSCO, Korea's largest steel producer, has been decreasing and is currently at 3.02 percent.[144] However, U.S. firms contend that Korean Government involvement in and assistance to the steel industry and support to steel-consuming industries in Korea that use Korean steel have disadvantaged U.S. steel exports in the Korean market and assisted Korean exports to the United States.[145]

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[137] Maureen R. Smith, American Forest and Paper Association, statement submitted to the Commission, May 30, 2001; and USTR and USDOC, *Subsidies Enforcement Annual Report to Congress*, Feb. 2001, p. 23.

[138] USTR and USDOC, *Subsidies Enforcement Annual Report to Congress*, Feb. 2001, p. 23, found at *www.ustr.gov*, retrieved May 10, 2001.

[139] *The Korea Herald*, "Creditors to buy maturing bonds," Apr. 16, 2001, found at *www.koreaherald.co.kr*, retrieved June 11, 2001.

[140] *The Korea Herald*, "Creditors of Hynix Semicon close to accepting plan," May 7, 2001, found at *www.koreaherald.co.kr*, retrieved June 11, 2001.

[141] USTR and USDOC, *Subsidies Enforcement Annual Report to Congress*, Feb. 2001, p. 23, found at *www.ustr.gov*, retrieved May 10, 2001; and Gilbert B. Kaplan, Hale and Dorr for Micron Technology, statement submitted to the Commission, p. 2, May 25, 2001.

[142] *The Korea Herald*, "Large bailout funds to Hyundai feed talk of downturns," Apr. 24, 2001, found at *www.koreaherald.co.kr*, retrieved June 11, 2001.

[143] USTR and USDOC, *Subsidies Enforcement Annual Report to Congress*, Feb. 2001, p. 23.

[144] POSCO Form 6-K, filed July 28, 2001 with Securities and Exchange Commission, found at *www.posco.kr*, retrieved August 7, 2001.

[145] H.L. Kephart, Chairman, Specialty Steel Industry of North America, submission to the Commission, May 22, 2001.

Although many changes have been made in investment laws since the financial crisis, some restrictions on foreign investment still exist. Foreign investment is not permitted in broadcast (terrestrial) television and radio operations and is limited to minority holdings in cable television.[146] Foreign investment is also prohibited in inshore and coastal fisheries. Korea maintains foreign investment restrictions on various media, schools, beef wholesalers, and state-owned firms.[147]

The United States has objected to Korea's government procurement practices in the construction of Inchon International Airport and in May 1999 brought a complaint to the WTO. The main aspects of the U.S. complaint were Korean requirements that contractors have manufacturing facilities in Korea and partner or subcontract to Korean firms and that bid deadlines were too short. Although the United States felt that this was a violation of the Government Procurement Agreement (GPA), the WTO Dispute Settlement Panel found that the entities responsible for procuring goods and services for the airport construction were not covered by Korea's obligations under the GPA.[148] Other products not included in Korea's commitments under the GPA are telecommunications commodity products and network equipment purchased by Korea Telecom.[149]

Finally, Korean building and fire codes, conceived as a means of preventing the spread of fires in dense urban areas, limit the use of wood in all types of construction and encourage the use of alternative materials. These regulations indirectly affect both imports and the domestic wood products industry. Supplies of wood construction products are limited in Korea and much of demand is met through imports whereas major domestic industries, such as steel and cement, produce alternative materials. U.S. exporters contend that these regulations have no scientific basis and are not based on health or safety concerns. Despite technological improvements in wood products and construction, no wood products are certified as part of a fire resistant assembly in Korea. For example, buildings of more than two stories may not have wood walls, columns, floors, beams, roofs, or main stairs, and no wood frame construction is allowed in "fire protection zones," a term that U.S. exporters contend is so vaguely defined that it may apply to most parts of Korea. The complexity of the regulatory system and the exclusion of foreign firms from the standards-making process impede foreign firms' access to the Korean market.[150]

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[146] USITC staff interview with Korean Government representative, Seoul, Korea, May 2, 2001.

[147] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 289.

[148] WTO, Dispute Settlement Panel, *United States–Anti-Dumping Act of 1916*, WT/136/R, March 2000; WTO, Appellate Body, *United States–Anti-Dumping Act of 1916*, WT/DS136/AB/R and WT/DS162/AB/R, AB-2000-5, AB-2000-6, adopted August 2000.

[149] USTR, *2001 National Trade Estimate Report on Foreign Trade Barriers*, p. 284.

[150] Maureen R. Smith, Vice President, International, American Forest & Paper Association, statement submitted to the Commission, May 30, 2001.

Import Policies

Tariffs and Taxes

Most U.S. tariffs are low or have been eliminated, resulting in a trade-weighted average duty rate on total imports of 1.6 percent ad valorem in 2000. Over one-third of all tariff lines impose no normal trade relations duty and nearly $800 billion in imports entered free of duty in 2000. With the exception of two tariff provisions,[151] all U.S. tariffs in chapters 1 through 97 of the Harmonized Tariff Schedule are bound. Applied and bound rates, based on the staging schedule, are the same, except when exporters are eligible for preferential duties on particular shipments. However, Korean companies have cited tariffs in several product categories, especially textiles and apparel, as impediments to Korean exports. Other products identified as having high tariffs are footwear, leather goods, ceramic and glassware, rolling stock, trucks, television picture tubes, and jewelry (table 4-6).[152]

In addition to tariffs, Korean exporters have identified the Harbor Maintenance Fee as a U.S. barrier that lessens the competitiveness of their exports. Because this is an ad-valorem assessment, higher valued goods are particularly disadvantaged because they are assessed a greater amount of tax. Korean exporters also point out that, because it is an ad-valorem tax, it is not based on the amount of harbor services used and, because it is not imposed on U.S. exports, it is discriminatory.[153]

Clearance Procedures

The most frequently cited customs clearance barrier was excessive delays caused by inspection or quarantines, principally of agricultural products. As a result, some Korean exporters have incurred unnecessary costs and lost some or all of their shipments due to spoilage. One example of such delays was a shipment of Korean garlic held in Los Angeles by U.S. Customs while examinations were conducted to determine whether or not the garlic was of Chinese origin. According to Korean government officials, the process took so long that the entire shipment of garlic was

[151] The two tariff provisions are HTS 2709.00.10 and 2709.00.20 and comprise crude petroleum oils and oils obtained from bituminous minerals.

[152] USITC staff interview with Korean Government representative, Seoul, Korea, Apr. 26, 2001; Korean Ministry of Foreign Affairs and Trade (MOFAT), *A Comprehensive Survey of the Trade Environment*, 2000.

[153] KITA, post-hearing statement to the Commission, May 25, 2001, p. 4; MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000. The United States Court of International Trade and subsequently the U.S. Supreme Court declared the Harbor Maintenance Fee an unconstitutional tax on exports. Beginning Apr. 25, 1998, this tax was no longer collected on U.S. exports. In February 1998, the EU requested consultations on the Harbor Maintenance Fee, alleging that it is a violation of WTO commitments, and consultations were held later that year. USTR, *Dispute Settlement Update;* and WTO, *Overview of the State-of-the-Play of WTO Disputes.*

Table 4-6
United States: Selected peak tariff rates, 2001

Description		2001 tariff
		Percent
Travel goods, handbags, wallets, sports bags, and similar containers	With an outer surface of plastic, vulcanized fiber, or paperboard	20.0
	With an outer surface of textile materials, except cotton	18.3
Woven fabrics of synthetic filament yarn	Dyed, containing 85% or more of nontextured polyester filaments, less than 77 cm wide	[1]21.0
	Of yarns of different colors, wholly of polyester	[1]15.8
	Of yarns of different colors, containing at least 85% but not 100% polyester filaments	[1]15.4
	Containing 85% or more by weight of polyester filaments	15.5
Knitted or crocheted fabrics of manmade fibers	Long pile	17.9
	Looped pile	17.9
	Other pile	17.9
Knitted or crocheted apparel	Men's or boys' shirts of manmade fibers	32.8
	Women's or girls' blouses and shirts, of manmade fibers	32.8
	Sweaters, pullovers and similar articles, of manmade fibers	32.7
	T-shirts, tank tops and similar garments, of manmade fibers	32.6
	Babies' cotton blouses and shirts, not parts of sets	20.1
Apparel, not knitted or crocheted	Women's or girls' synthetic trousers, breeches, and shorts	29.1
	Men's or boys' anoraks, windbreakers, and similar articles of manmade fibers	28.2
	Men's or boys' shirts of manmade fibers	[1]28.1
	Women's or girls' synthetic suit-type jackets and blazers	27.8
	Women's or girls' blouses and shirts of manmade fibers	27.4
Sports footwear with outer soles of rubber or plastics	With rubber or plastics uppers valued over $3 but not over $6.50/pair	[1]48.5
	With textile uppers, valued over $6.50 but not over $12/pair	[1]31.0
	With rubber or plastics uppers, valued over $6.50 but not over $12/pair	[1]24.6
Motor vehicles	Trucks	25.0

[1] Ad valorem equivalent.

Source: *Harmonized Tariff Schedule of the United States (2001).*

ruined.[154] Apples and ginseng have been subject to similar delays for pest inspections and risk assessment quarantines.[155] Korean citrus growers cite the restriction on Cheju tangerines as a barrier to their exports to the United States. Although a plant quarantine plan was adopted in 1995 to allow Korean tangerines into the United States, five states from the principal tangerine growing region still prohibit entry into their jurisdictions.[156] Other reasons cited for lengthy clearance delays were inspection for possible counterfeit items and for verification of country of origin.[157]

Processed food products and drugs reportedly have problems clearing customs as a result of USDA and Food and Drug Administration (FDA) regulation.[158] For example, under U.S. law the Food Safety and Inspection Service of the USDA must review the exporting country's processed food regulations and guidance related to raw

[154] USITC staff interview with Korean Government representative, Seoul, Korea, Apr. 26, 2001; MOFAT, *A Comprehensive Survey of the Trade Environment,2000.*

[155] USITC staff interview with Korean Government representative, Seoul, Korea, Apr. 27, 2001.

[156] MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.

[157] Ibid.

[158] USITC staff interview with Korean industry representative, Seoul, Korea, Apr. 26, 2001.

materials, sanitation, handling, and processing to determine if they meet U.S. requirements. Without this review and certification that the requirements are equivalent to those of the United States, products are not permitted to enter. Korean exporters of foods such as chicken ginseng soup feel that this review and certification is unnecessary because their products are regarded as safe in Korea and for export to other markets, including Japan, Singapore, and Australia.[159] In another instance, a shipment of ginseng drink was delayed for more than a month while the alcohol content was measured.[160]

Trade Remedy Laws

Korean industry representatives assert that U.S. trade remedy laws, such as antidumping, countervailing duty, and safeguards statutes, allegedly act as a disincentive to many Korean firms that fear being subject to penalties under their provisions.[161] Reportedly, some Korean firms may refrain from exporting to the United States because they feel the risk posed by these laws is too great. Korean exporters contend that the Byrd Amendment, which allows U.S. firms to receive funds collected from antidumping duties, gives U.S. firms an incentive to initiate antidumping cases. Korean steel companies, in particular, are concerned that trade remedy laws will be used to limit steel imports.[162] Korean companies believe that the U.S. antidumping system is arbitrary in its determination of dumping and injury assessment and that it is used to restrict imports to the United States.[163] Korean officials have stated that "ambiguous" language in these provisions should be clarified so that antidumping rules cannot be used as industrial policy.[164]

In addition to the uncertainty caused by the perceived threat of these laws, Korean companies that are the subject of antidumping cases must deposit large amounts of money while awaiting judgment for tariffs that might be imposed, and, subsequent to a finding of dumping, are subject to costly and burdensome annual reviews.[165] They also cite the Antidumping Act of 1916, which allows U.S. importers to be sued in U.S. courts for dumping with intent to injure the domestic industry, as a further disincentive to trade. Both the EU and Japan have filed complaints with the WTO regarding this statute and the United States was found not to be in compliance with its obligations.[166]

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[159] MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.

[160] Ibid.

[161] USITC staff interview with Korean industry representative, Washington, D.C., Apr. 19, 2001; MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000; KITA, post-hearing statement to the Commission, May 25, 2001.

[162] KITA, post-hearing statement to the Commission, May 25, 2001.

[163] MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.

[164] USITC staff interview with Korean Government representative, Seoul, Korea, Apr. 23, 2001.

[165] USITC staff interview with Korean industry representative, Seoul, Korea, Apr. 28, 2001; MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.

[166] WTO, Dispute Settlement Panel, *United States–Anti-Dumping Act of 1916*, WT/136/R, March 2000; WTO, Appellate Body, *United States–Anti-Dumping Act of 1916*, WT/DS136/AB/R and WT/DS162/AB/R, AB-2000-5, AB-2000-6, adopted August 2000.

Quantitative Restrictions

Korean textile products currently face tariff and quota barriers in the United States.[167] U.S. quotas on textiles and apparel from Korea and other WTO members are scheduled to be eliminated by January 1, 2005, under the Uruguay Round Agreement on Textiles and Clothing, but Korean producers are concerned that the U.S. industry will seek to extend these quotas or use other provisions to provide similar levels of protection.[168] In addition to acting as a quantitative restriction on imports, quotas may influence the purchasing decisions of U.S. importers who want the flexibility to increase orders without worrying if the annual quota will fill before they receive their shipment. Concerns such as these make nonquota countries more attractive suppliers.[169]

Regulatory Regime

Korean companies find the standards, testing, and certification system in the United States complex and nontransparent. Korean officials contend that the U.S. system consists of a vast number of requirements at the federal, state, and local levels, many of which do not conform to international norms and are not uniform among the various U.S. standards jurisdictions. The lack of a centralized source of information makes it very difficult and expensive for foreign firms, especially small-and medium-sized companies, to obtain the necessary certifications.[170] In general, Korean companies believe U.S. standards and testing regulations are not based solely on safety issues and result in unnecessary modifications of products to meet the requirements for sale in the United States.[171]

Korean companies contend that U.S. standards for electrical and electronic machines, one of the largest Korean export categories, are barriers to trade because these standards require unnecessary local testing. A particular problem exists in obtaining the Underwriters Laboratories (UL) mark. Although the UL mark is required in only a few locations, many retailers will not sell products without it and many consumers will not purchase goods without it. As a result, Korean companies whose products already meet Korean standards must submit their products for testing and certification again. In addition, certain jurisdictions require the UL mark on industrial machinery. In these cases, Korean companies feel it is unreasonable not to recognize that the safety requirements have already been met in Korea, and would like the UL standard eliminated for machines not sold to consumers.[172]

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[167] USITC staff interview with Korean industry representative, Seoul, Korea, Apr. 26, 2001.
[168] USITC staff interview with Korean industry representative, Washington, D.C., Apr. 19, 2001.
[169] KITA, post-hearing statement to the Commission, May 25, 2001.
[170] USITC staff interview with Korean Government representative, Seoul, Korea, Apr. 26, 2001; MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.
[171] USITC staff interview with Korean industry representative, Washington, D.C., Apr. 19, 2001.
[172] MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.

Labeling

Korean companies view certain labeling requirements in textiles and in retail packaging as barriers. Korean textile exporters feel that burdensome textile labeling requirements go far beyond the information necessary for most Customs or statistical purposes and impose extra costs.[173] For example, shipments of goods of textile fibers must be marked with the generic names and percentages, by weight, of the constituent fibers present in amounts of more than 5 percent. Wool products have to be clearly marked with information on weight and importer to satisfy the requirements of the Wool Products Labeling Act of 1939.[174] Marking and labeling rules for retail packaging reportedly are not transparent and impose additional costs on Korean exporters who must redesign their packaging especially for the U.S. market. Korean producers find labeling for nutritional content particularly difficult.[175]

One of the most significant labeling issues is embodied in the American Automobile Labeling Act, which requires country of origin labels based on content levels.[176] Korean producers feel that the origin labeling rules for automobiles discriminate against non-North American companies in the method of calculating origin. The calculation is not based on cars sold only in the United States, but on the average car type produced by the company in all countries.[177] They assert that other factors that enter into the calculation of vehicle origin, such as location of painting and final assembly or subsidiary relationships, also disadvantage Korean producers. In addition, the requirement for large volumes of records to calculate origin reportedly discourages U.S. firms from purchasing Korean auto parts. In general, Korean automakers find U.S. labeling regulations to be lacking in transparency, discriminatory, burdensome in record-keeping requirements, and an anti-import, buy-American policy that discourages consumers from buying Korean cars.[178]

Maritime

Korean companies identified U.S. cabotage laws[179] as barriers to Korean shippers and shipbuilders because they preclude the use of Korean-built vessels in U.S. domestic marine activities.[180] These laws govern the transportation of passengers and cargo between two domestic points. Specifically, the Merchant Marine Act of 1920, section 27, known as the Jones Act, requires that merchandise transported entirely or partly by water between U.S. points be carried in U.S.-built, U.S.-owned, U.S.-crewed, and U.S.-documented vessels. This rule prevents Korean-built, -owned, -crewed, or -documented ships from picking up goods or passengers in one U.S. port and transporting them to another U.S. port.

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[173] USITC staff interview with Korean industry representative, Seoul, Korea, Apr. 26, 2001.

[174] EU, Market Access Sectoral and Trade Barriers Database, found at *http://mkaccdb.eu.int*, Apr. 25, 2001.

[175] USITC staff interview with Korean industry representative, Washington, D.C., Apr. 19, 2001.

[176] USITC staff interview with Korean industry representatives, Seoul, Korea, Apr. 26, 2001; EU, Market Access Sectoral and Trade Barriers Database, found at *http://mkaccdb.eu.int*, Apr. 25, 2001.

[177] Final assembly place and country of origin of the engine and transmission are determined for each individual vehicle.

[178] MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.

[179] Laws pertaining to the transportation of merchandise between U.S. ports, either directly or via a foreign port.

[180] Korea International Trade Association, submission dated May 25, 2001, p. 3.

Other Barriers

Visas

The United States maintains a visa waiver program with many industrialized countries, but requires a visa for the entry of all Koreans, regardless of purpose.[181] This requirement can cause problems for Korean companies that want to send foreign employees to the United States for short periods of time, as there are often long waits and much uncertainty associated with the visa application process.[182] The visa requirement also creates a collateral problem for U.S. service companies, because Korean tourists, students, healthcare seekers, or travelers for other purposes may find it more difficult to enter the United States.[183] More Koreans are traveling to the EU, Canada, and Australia because Koreans are not required to obtain visas for these countries. As a result, potential U.S. tourist, education, and medical services revenues may be reduced.[184]

Government Procurement

Although Korea is a major exporter to the United States, it has almost no share of the government procurement market. Korean firms attribute this in part to the fact that government procurement in the United States is very complex, with the federal government, 50 state governments, and many local governments, each with a separate procurement regime.[185] Both the United States and Korea are signatories to the Government Procurement Agreement (GPA), but the GPA applies only to contracts exceeding a certain value and to only 37 of the 50 U.S. States.[186] Textiles, in particular, are a problem for Korean companies. Since September 1996, U.S. law has extended national security provisions of U.S. Department of Defense (DoD) procurement to cover all textile fibers and yarns used in the production of fabrics. As a result, Korean fibers and yarns cannot be used by U.S. manufacturers for the production of fabrics sold to the DoD. Waivers can be negotiated, but they are subject to annual review and can be rescinded at any time, thus creating uncertainty for suppliers.[187]

State government procurement regulations often specify a high share of local content and impose a price penalty if this level is not met. Some state transportation contracts are excluded from the GPA, leaving Korean exporters subject to Buy America provisions. Some states, particularly those that produce steel, have laws which prohibit the use of foreign steel in state-funded projects. In addition, contractors who work in multiple states may avoid using imported steel because it would have to be segregated for use only on those projects that allow foreign steel.[188]

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[181] Korea does not require a visa for a U.S. tourist to stay for up to 30 days, but does require a visa for other types of travel or for longer stays.

[182] USITC staff interview with Korean industry representative, Seoul, Korea, Apr. 26, 2001.

[183] USITC staff interview with Korean industry representative, Washington, D.C., Apr. 19, 2001.

[184] USITC staff interview with AmCham Korea, Washington, D.C., Mar. 26, 2001.

[185] USITC staff interview with Korean industry representative, Seoul, Korea, Apr. 26, 2001.

[186] MOFAT, *A Comprehensive Survey of the Trade Environment*, 2000.

[187] USITC staff interview with Korean industry representative, Washington, D.C., Apr. 19, 2001.

[188] Ibid.

CHAPTER 5
Analysis of Eliminating Existing Trade Barriers

Introduction

This chapter investigates the likely economic effects of a preferential elimination of trade barriers between the United States and Korea, using multiple approaches. First, a computable general equilibrium (CGE) model and its corresponding database are used to illustrate the possible effects on a number of economic measures, including the volume of trade in goods and services between the two countries and, for each country, the gross domestic product (GDP), sectoral output, wages and employment across industry sectors, and the final prices paid by consumers.[1] Next, a partial equilibrium analysis is used to estimate the likely impact of bilateral trade liberalization on U.S. exports to Korea and Korean domestic production for a number of agricultural products at a detailed commodity level. Finally, a qualitative assessment is offered on the likely impact of removing nonquantifiable barriers to trade between the United States and Korea.

Summary of Findings

The Commission found that, four years following the implementation of a U.S.-Korea FTA, total U.S. exports and imports are estimated to be approximately 0.8 percent and 1.0 percent higher than if the FTA had not been implemented. At the bilateral level, U.S. exports to Korea would likely increase by 54 percent, while U.S. imports from Korea would be 21 percent higher. At the sectoral level, the estimated impacts are relatively large for those sectors with high initial trade barriers. U.S. agricultural exports to Korea are estimated to increase by more than 200 percent. In the other direction, U.S. imports of textiles and apparel from Korea would be 125 percent higher following the FTA. These results correspond to the revealed comparative advantage indices described in chapter 3. For example, one of the United States' strengths vis-a-vis Korea is in agriculture, and one of Korea's strengths vis-a-vis the United States is in textiles and apparel. It follows, then, that an elimination of reciprocal tariffs and barriers will likely generate increased trade in these sectors.

[1] Economic simulation models, such as the one used here, are used to organize analysis and reflect key economic and trade relationships in the U.S. and world economy. Model results should be interpreted as illustrative as to what might occur given the assumptions of the model and the focus on trade-related changes. Many economic, political, and natural events are likely to occur that would affect the results of this analysis.

Full preferential trade liberalization has a minimal impact on U.S. production and a slightly larger impact on Korean production. Overall U.S. GDP is expected to increase by 0.2 percent, while Korean GDP is projected to increase by about 0.7 percent as a result of the FTA. The textiles and apparel sector–the most affected sector–is estimated to shrink by about 1 percent in the United States and to grow by about 18 percent in Korea. U.S. agricultural output is projected to increase by about 1 percent, and Korean output is expected to contract by roughly 5 percent.

Several tariff peaks exist at the detailed commodity level, and in response to the request letter, a number of agricultural products are considered individually. For example, U.S. exporters face double-digit tariffs on certain agricultural and processed food products, such as beef, beer, and cheese. Partial equilibrium modeling results suggest that bilateral tariff reductions are likely to result in substantial percentage increases in the volume of U.S. exports to Korea in these products–61 percent for beef, 101 percent for beer, and 64 percent for cheese. In sectors facing lower tariffs, such as wheat, flour, and industrial corn, the results suggest that bilateral trade liberalization will result in more modest increases in U.S. exports to Korea–3 percent for wheat, 7 percent for flour, and 4 percent for industrial corn. Korean domestic production would likely fall by 4 percent in the beef sector, but have little or no change in the other sectors.

The removal of nontariff barriers (NTBs), including tariff-rate quotas, import clearance and customs procedures, and restrictions on media such as motion pictures and television programming, would likely lead to increased opportunities for U.S. exporters. The modification of certain other domestic Korean policies also is likely to benefit U.S. exporters, such as certain changes to Korea's regulatory regime and tax system (chapter 4). Lastly, more effective protection of intellectual property rights in Korea would benefit U.S. exporters in a number of sectors, including software, audio and video recordings, pharmaceuticals and cosmetics.

General Equilibrium Analysis

Database and Aggregation

The Global Trade Analysis Project (GTAP) modeling framework, which serves as a basis for the present analytical exercise, consists of a static computable general equilibrium model and a global database on international trade.[2] In addition to the data on trade in each of the commodities between each pair of countries or regions in the model, there are data on the domestic production and use of each commodity,

[2] For additional information, see T.M. Hertel (ed.), *Global Trade Analysis: Modeling and Application*. (Cambridge: Cambridge University Press), 1997.

including use in the production of other commodities; the supply and use of land, labor, and capital; population, and GDP. The database also contains information on tariffs, some nontariff barriers, and other taxes. An additional component of the data is the set of behavioral parameters which, in the context of the model's equations, determines behavioral responses to changes in price, among other things.

The GTAP database divides the world into 45 countries (or regions) and has 50 commodity aggregates (or sectors) and five primary factors of production. For the purpose of the present analysis, the database has been aggregated into five regions and 10 commodity groups (table 5-1). The commodity aggregation adopted here reflects the Senate Finance Committee's request to pay special attention to agricultural goods.

Table 5-1
Commodity and regional aggregation

Commodity aggregation	Regional aggregation
Rice	United States
Meat products	Korea
Fruits and vegetables	Rest of East Asia (including China and Japan)
Dairy products	European Union
Rest of agriculture	Rest of the world
Natural (extractive) resources	
Textiles and apparel	
Mineral and metal products	
Other manufacturing	
Services[1]	

[1] The GTAP database contains only a limited and highly aggregated representation of the servces sector. Unlike the other sectors in the database, services are not fully tradable and the border measures captured in the GTAP protection data do not fully represent the actual restrictions to trade in services.

Source: GTAP database.

Simulation Design

The Senate Finance Committee requested a static and dynamic analysis of the effect of bilateral trade liberalization. The analysis conducted by the Commission incorporates both approaches in a single analysis, employing a static framework with a dynamic element. The effects of the FTA are examined by means of a series of comparative static analyses with multiple sequential simulations extending out to 2009.[3]

There are limitations to a comparative static framework, which allows for the comparison of the global economy in which the base values of policy instruments are unchanged, and the global economy in which the policy is changed. A change in policy makes itself felt throughout the countries and regions depicted in the model. However, the basic model says nothing about the speed with which changes occur, what has happened to various dimensions of the economies in the meanwhile, or what

[3] In the simulations that follow, beginning of period dates are used to characterize time. Thus, the appearance of the date, 2009, signifies the beginning of 2009, not the end.

may have happened to change some of the underlying dynamic structures of the economies, such as specific patterns of investment or technological changes that may alter the future growth pattern of economies.

In an effort to address these limitations, the static GTAP model is solved sequentially so as to approximate a dynamic process in which the world's economies change over time.[4] In this framework, the modeled changes include 1) a projection of changes that are likely to occur irrespective of the studied policy changes (i.e., the counterfactual baseline), 2) the policy changes (i.e., the reciprocal trade liberalization between the United States and Korea), and 3) the affected economies' responses to the policy changes. In essence, the analysis presented here is of a comparative dynamic nature. That is, it addresses the following question: *if an FTA were established between the United States and Korea, how would the time-paths of the relevant variables differ compared to the projected baseline*?

Policy Experiment

The first step in this approach is to define the policy experiment–or the shock–that would reflect the formation of the hypothetical trade arrangement. In the current study, it is assumed that the contemplated trade arrangement between the United States and Korea takes the form of an elimination of all tariffs and some quantifiable nontariff border measures between the two countries.[5] For the sake of simplicity and in the absence of information to the contrary, the analysis assumes that all bilateral trade barriers will be eliminated in 2001, with no gradual phase-in provisions. The model addresses rules of origin by implicitly assuming that one country's imports are not re-exported to another country.

Solution Technique

The modeling technique employed in this study produces results that can be visualized in a manner consistent with figures 5-1 and 5-2.[6] The figures show the expected evolution of a variable of interest (bilateral trade between the United States and Korea, in this case) over a given time period (1995 to 2009). The "no FTA" (solid) line illustrates how the variable is expected to evolve if the studied FTA were not implemented. This is the projected baseline. The "with FTA" (dashed) line shows the evolution of the variable if the FTA were implemented in 2001, with the assumption that

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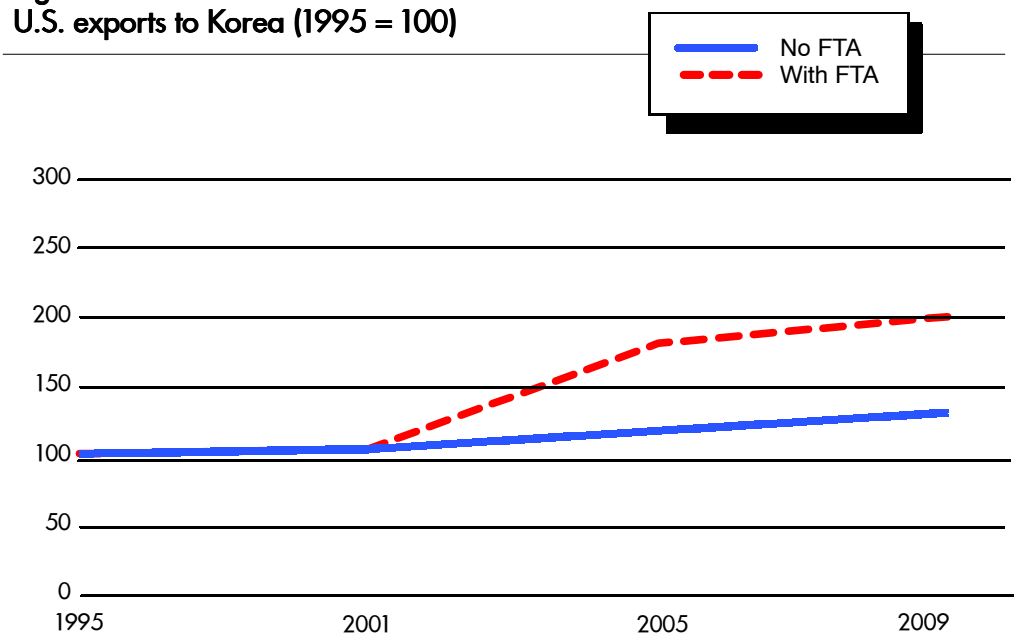
[4] In the request letter, the Senate Finance Committee asked the Commission to "undertake, to the maximum extent possible, a dynamic as well as a static, analysis of the economic effects of removing barriers to trade between the United States and Korea." In essence, the approach adopted here is to do a series of static analyses in a dynamic environment where macro-variables are changing over time.

[5] According to WTO provision of Regional Integration Arrangement, "a free trade area shall be understood to mean a group of two or more customs territories in which the duties and other restrictive regulation of commerce (...) are eliminated on substantially all trade between the constituent territories in products originating in such territories." Article XXIV of General Agreement on Tariffs and Trade (GATT), 8(b).

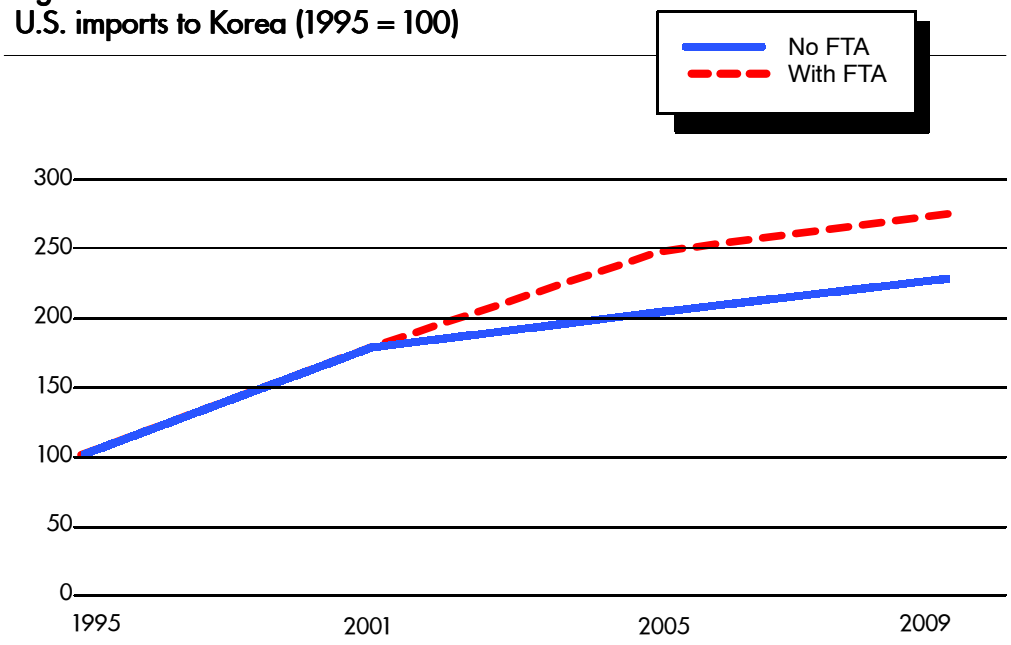
[6] The data presented in Figures 5-1 and 5-2 are results from the simulation below.

Figure 5-1
U.S. exports to Korea (1995 = 100)



Sources: GTAP simulation and USITC calculations.

Figure 5-2
U.S. imports to Korea (1995 = 100)



Sources: GTAP simulation and USITC calculations.

full economic adjustment to trade policy changes does not occur until four years after the policy change, in 2005.[7] The two figures show that in 2005, four years after the establishment of the FTA between the two countries, U.S. exports to Korea are estimated to be about 54 percent higher than the baseline, while imports from Korea would be 21 percent higher. In this chapter, the vertical distance between the two lines is reported for a number of variables, and is interpreted as the estimated impact of the U.S.-Korea FTA for each variable.

Projected Baseline

The standard GTAP database (Version 4) is based on 1995 measures, including trade flows, trade barriers, population, and other data for that year. To build the projected baseline, data and forecasts of population growth and economic growth from The World Bank are applied to the model in order to represent the projected evolution of the different regional aggregates from 1995 to 2009.[8] At the same time, capital is assumed to grow at the same rate as GDP. Figure 5-3 reports the projected annual growth rates for the whole 2001-2009 period for GDP, capital stock and labor supply. According to The World Bank, Korea's economy is projected to grow by 5.33 percent per year during the period under consideration, while the U.S. annual growth projection rate is 2.53 percent.

Figure 5-3
Projected average annual growth rate, 2001-09

Region	GDP	Capital	Labor
		Percent growth rate	
United States	2.53	2.53	0.80
Korea	5.33	5.33	0.69

Sources: The World Bank and USITC calculations.

For each of the three time intervals comprising the projected baseline, the protection database is adjusted to reflect the phasing-in of the trade policy measures ratified under the Uruguay Round and the WTO Agreement on Textiles and Clothing (ATC). Thus, the first period (1995-2000) includes policy measures implemented up to 2000, the second period (2001-2005) contains scheduled liberalization up to 2004, and the third period (2005-2009) includes the remaining Uruguay Round and ATC liberalizations.[9]

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[7] The choice of a four year period–the length of a common business cycle–for full adjustment acknowledges that there is no explicit modeling of the transition process. Because it is assumed that economies require a four-year transition period to fully respond to the tariff cuts, the effects of the cuts are evaluated against the baseline four years after the cuts go into effect. That is, the year 2001 cuts are solved relative to the 2005 baseline data.

[8] For the period 1995-2000, recent data are used to match bilateral trade flows between the United States and the other regions (Source: Official Statistics of the U.S. Department of Commerce).

[9] The ATC and Uruguay Round liberalizations are scheduled to be completely phased in by 2005.

Table 5-2 shows the adjusted protection rates for the United States and Korea (from the GTAP protection database) for the year 2001– the year in which the FTA is assumed to be implemented.[10] The highest incidences of trade barriers imposed on U.S. imports from Korea are projected to occur in the dairy products sector (52 percent) and the textiles and apparel sector (12 percent). In Korea, the United States faces substantial trade barriers in the five agricultural sectors (rice, meat products, fruits and vegetables, dairy products, and the rest of agriculture) and relatively moderate tariffs in the remaining sectors. U.S. manufacturing exports to Korea face the equivalent of a 6.9 percent ad valorem tariff rate.

Table 5-2
Tariff equivalent of quantifiable import barriers between the United States and Korea, by commodity, 2001[1]

Imported commodity	U.S. tariff equivalent	Korean tariff equivalent[2]
	Percent ad valorem rate	
Rice	0.27	74.44
Meat products	0.57	40.32
Fruits and vegetables	0.08	35.53
Dairy products	51.78	100.89
Rest of agriculture	2.9	54.07
Natural (extractive) resources	1.36	3.52
Textiles and apparel	11.72	4.71
Mineral and metal products	3.88	4.22
Other manufacturing	2.41	6.92

[1] 1995 tariffs and tariff equivalents reported in GTAP database, adjusted to include the Uruguay Round and MFA measures implemented up to 2001. Trade barriers are captured to the extent they are reflected in the difference between the domestic price and the world price. There are no trade barriers on services in the GTAP database. For additional information, see chapter 13 of Robert McDougall et al., *Global Trade, Assistance, and Protection: The GTAP 4 Data Base*, West Lafayette: Center for Global Trade Analysis, Purdue University.

[2] Other sources provide generally higher measures of protection for Korean agriculture. In *Measuring the Costs of Visible Protection in Korea*, Institute for International Economics, author Namdoo Kim cites sources that report rates of 499.6 percent and 595 percent for rice; 13.1 percent for vegetables; 140.1 percent for fruits; 150.1 percent for dairy products; and 159.7 percent for agriculture in general (pp. 14, 19, 30-31).

Sources: GTAP database and USITC calculations.

Model Limitations

A number of caveats are in order regarding this modeling framework.[11] The static model has a number of limitations that also apply to the multiple-stage simulations. First, the standard GTAP database is based on the year 1995. Trade flows and barriers, assumptions about parameters and structural relationships refer to the world

[10] GTAP protection data are limited to tariffs, and to a smaller extent, partial quantification of nontariff barriers associated with agriculture products as well as EU and U.S. Multi-Fiber Agreement quotas applied to the rest of the world.

[11] Any modeling effort necessarily abstracts from reality and is limited in its ability to reflect the degree of complexity evident in the real world.

in that year. Because the model's simulation results are based upon established trade patterns, the model is unable to project potential changes in trade in commodities which have not been historically traded between the partners.[12]

A second limitation stems from a bias found in virtually any quantitative analysis of economic data that arises from the process of data aggregation. In particular, international trade occurs in thousands of different products and services. For data collection and reporting purposes, the United States collects trade data under 17,000 statistical categories and some 10,000-plus tariff-rate lines. For most general equilibrium analysis, these groupings represent far too much detail to be computationally tractable. Furthermore, analysis and comparison of data collected from different countries require that data be aggregated into categories that are generally comparable from one country to another. This reduction and aggregation process introduces two general sources of bias into a modeling exercise.

One first source of bias involves the calculation of tariffs for aggregated product categories. In this study, trade-weighted average tariffs were calculated, using the value of trade in a tariff line to weight the tariff in that line. This procedure tends to mask the importance of those products within the aggregate that have particularly high tariffs (tariff spikes), and which therefore present a greater barrier to imports than would be the case if all goods within the aggregation had the same average tariff. The relationship between the level of an import-weighted average tariff and the effects of the individual tariffs that comprise the group depend on the correlation between the level of these tariffs and the price responsiveness of final demand for the goods in question.[13] As a result, modeling the reduction of an aggregate average tariff would tend to understate the effect of reducing the tariff of a high-tariff component of the aggregate.

Another source of aggregation bias is due to the likelihood that goods within an aggregate may not be close substitutes for one another. In particular, imported goods of a particular category may be quite dissimilar to a country's domestic product in that category. However, when the price of an import falls, for example, the trade model may indicate a certain amount of substitution of that import for the domestic product when, in fact, they are not close substitutes. In this case, the model would overstate the impact of a given average tariff reduction.

A number of further caveats apply to the dynamic analysis, which requires some additional assumptions about the timing and nature of the economies' responses to the proposed policy shocks. First, the static model makes no specific assumptions about the speed with which changes affect the relevant economies. Because the dynamic modeling technique applied here requires a time frame to the adjustment process, assumptions about adjustment times are necessary. Second, the model assumes a single macroeconomic time path, and so does not allow for consideration of

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[12] That is, if zero trade now exists in the database between two regions for a particular commodity, then no amount of change in trade barriers can lead to the introduction of trade in that commodity.

[13] See James E. Anderson and J. Peter Neary, "Measuring the Restrictiveness of Trade Policy," *World Bank Economic Review*, vol. 8, No. 2, May 1994, pp. 151-169.

unexpected macroeconomic events such as recessions or large currency movements. Assumptions about the path of the projected baseline can affect estimates of the impact of the FTA. Finally, the model assumes no changes in the economies' input-output structures, so that economic or technical changes that lead an industry to substitute one input for another are not considered.

Despite these limitations, the GTAP modeling framework, and the dynamic extensions used here, can be quite useful in providing insights on the effects of an FTA on a number of economic measures. The model presents a unified theoretical framework in which to assess the likely effects of the policy. Tying the proposed trade policy framework to a time line that includes expected future economic changes produces additional realism under reasonable assumptions about the future.

Simulation Results

The request letter from the Senate Finance Committee directed the Commission to report the impact of eliminating all quantifiable trade barriers on the volume of trade in goods and services between the two countries and, for each country, GDP, sectoral output, wages and employment across industry sectors, and the final prices paid by consumers. This section presents the estimated general equilibrium effects of a U.S.-Korea FTA on selected aggregates for the year 2005, under the assumption that the effects of an FTA implemented in 2001 will not be fully observed until four years later.[14]

Trade Volumes

Trade agreements are generally designed to increase trade flows between the participating countries. The results suggest that U.S.-Korea bilateral trade would increase as a result of the FTA. Removing trade barriers in a preferential manner can generate increased trade through trade creation and/or trade diversion. Trade creation refers to the substitution of imports for higher priced domestically produced goods. Trade diversion refers to the displacement of imports from other countries outside the free trading region.

The general equilibrium analysis indicates that, four years following the implementation of a U.S.-Korea FTA, U.S. exports to Korea would be 54 percent ($19 billion) higher and U.S. imports from Korea would be 21 percent ($10 billion) higher than the projected baseline (tables 5-3 and 5-4). Total U.S. exports would be 0.8 percent ($7 billion) higher than if the FTA had not been implemented and total U.S. imports would be 1 percent ($13 billion) higher. Accordingly, while the U.S. trade balance with Korea improves by $9 billion, the overall U.S. trade deficit increases by $5 billion.

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[14] Because the FTA is implemented completely and immediately in 2001, the full effects of the FTA are realized by 2005. Thus, the results for the year 2009 are very similar to those for 2005 and are presented in appendix D. The differences between the 2005 and 2009 results reflect the projected growth in the economy.

Table 5-3
Effects on U.S. exports, by destination (2005, relative to baseline)

Commodity	Korea	World	Korea	World
	Percent change		*Value change million of 1995 dollars*	
Rice	1,026.93	-1.47	(2)	-14
Meat products	120.70	7.12	716	602
Fruits and vegetables	108.73	(1)	69	-26
Dairy products	954.62	15.46	207	190
Rest of agriculture	216.00	9.27	9,432	8,084
Natural (extractive) resources	17.61	-1.00	91	-20
Textiles and apparel	49.19	-1.13	163	-196
Mineral and metal products	21.39	(1)	396	-236
Other manufacturing	37.40	(1)	8,021	1,109
Services	1.26	-1.07	8	-2,098
Total	53.95	0.84	19,175	7,396

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table 5-4
Effects on U.S. imports, by source (2005, relative to baseline)

Commodity	Korea	World	Korea	World
	Percent change		*Value change million of 1995 dollars*	
Rice	1.72	1.13	(2)	4
Meat products	14.04	0.87	(2)	31
Fruits and vegetables	1.55	1.10	(2)	56
Dairy products	550.35	1.39	15	28
Rest of agriculture	31.73	1.17	178	1,229
Natural (extractive) resources	0.56	(1)	1	252
Textiles and apparel	125.19	3.37	7,008	3,150
Mineral and metal products	14.45	0.76	383	808
Other manufacturing	8.30	0.87	2,887	5,860
Services	-4.95	0.61	-209	1,094
Total	21.40	0.98	10,262	12,512

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Trade responses to FTAs are generally large in sectors facing substantial trade barriers, because the FTA-led market access improvement tend to be larger in those sectors. Given that agriculture is among the most protected sectors in Korea, its liberalization would lead to a substantial supply response from the United States. The results suggest that U.S. exports of rice, meat products, fruits and vegetables, dairy products, and other agricultural products to Korea would increase by more than 100 percent in terms of value, although it must be stressed that these increases are from relatively small bases. In value terms, U.S. manufacturing exports to Korea are projected to experience an $8 billion rise while exports of agricultural products increase by $10 billion.

U.S. sectoral imports from Korea would also increase following the FTA, with the exception of the services sector. Given that the dairy and textiles and apparel sectors have the highest incidences of barriers imposed on imports from Korea, these two sectors exhibit the largest import responses in percentage terms, with dairy increasing by 550 percent and textiles and apparel by 125 percent relative to the baseline, four years following the FTA. In value terms, U.S. imports of textiles and apparel and other manufacturing products from Korea constitute the bulk of the growth, with textiles and apparel increasing by $7 billion and other manufacturing products by $2.9 billion.

Free trade agreements, by definition, involve some degree of discrimination with respect to non-participating countries. The preferential nature of a U.S.-Korea FTA would give U.S. firms cost advantages relative to their competitors from other countries and vice versa. This would enhance the attractiveness of exporting to Korea, both in absolute terms and relative to exporting to other regions.[15] The increase in U.S. exports to Korea occurs at the expense of exports to other trading partners: U.S. exports to the rest of East Asia decline by 1.5 percent ($2.9 billion), to the EU by 1.4 percent ($3.4 billion), and the rest of the world by 1.4 percent ($5.5 billion) four years after implementation. Sectoral level results are similar: in each individual sector, U.S. exports to Korea increase substantially while those to the other regions drop slightly–by less than 3 percent.

Because the FTA involves a preferential liberalization of the U.S. market with respect to imports from Korea, it should also improve the market access of Korean firms in both absolute and relative terms. That is, the direction of trade should change as imports from Korea become relatively cheaper, encouraging U.S. consumers to substitute these for local production (trade creation) and for imports from other regions (trade diversion). There is no evidence, at least at the aggregate level, of imports from Korea displacing imports from other regions. In fact, U.S. imports from the EU, the rest of East Asia, and the rest of the world are even slightly higher relative to the projected baseline. This non-intuitive result is explained by the increased imports from non-Korean sources which are, in part, replacing U.S. goods that are being redirected from serving the domestic market towards serving the Korean market. At the sectoral level, only in the textiles and apparel sector do the higher U.S. imports from Korea seem to displace imports from other regions, which decline by around 4.5 percent. For the remaining sectors, U.S. imports from the other regions increase slightly.

An FTA would raise total Korean exports by 3.5 percent ($8 billion) relative to the baseline while total imports would be 6.2 percent ($11 billion) higher (tables 5-5 and 5-6). The former effect is almost entirely driven by a 21.4 percent ($10 billion) rise in Korean exports to the United States as Korean firms would take advantage of the improved access to the U.S. market. At the sectoral level, overall Korean exports substantially increase in dairy products (84 percent) and textiles and apparel (27 percent), due mainly to the preferential elimination of the significant U.S. barriers in

[15] For a fixed amount of resources available to one given country, an increase in exports to another country would, everything else equal, mean a decrease in either domestic sales, or exports to other countries.

Table 5-5
Effects on Korean exports, by destination (2005, relative to baseline)

Commodity	United States	World	United States	World
	Percent change		*Value change million 1995 dollars*	
Rice	1.72	([1])	([2])	([2])
Meat products	14.04	10.57	([2])	19
Fruits and vegetables	1.55	([1])	([2])	1
Dairy products	550.35	84.09	15	15
Rest of agriculture	31.73	17.88	178	1,066
Natural (extractive) resources	0.56	-0.69	1	-17
Textiles and apparel	125.19	27.27	7,008	9,184
Mineral and metal products	14.45	-3.02	383	-563
Other manufacturing	8.30	([1])	2,887	-359
Services	-4.95	-5.40	-209	-1,314
Total	21.40	3.51	10,262	8,032

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table 5-6
Effects on Korean imports, by source (2005, relative to baseline)

Commodity	United States	World	United States	World
	Percent change		*Value change million of 1995 dollars*	
Rice	1,026.93	([1])	([2])	([2])
Meat products	120.70	33.86	716	410
Fruits and vegetables	108.73	28.40	69	38
Dairy products	954.62	71.74	207	128
Rest of agriculture	216.00	26.73	9,432	3,820
Natural (extractive) resources	17.61	([1])	91	-75
Textiles and apparel	49.19	11.55	163	860
Mineral and metal products	21.39	2.06	396	395
Other manufacturing	37.40	5.28	8,021	4,421
Services	1.26	2.43	80	625
Total	53.95	6.19	19,175	10,623

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

those sectors. The results indicate that some of Korea's exports to other regions would be redirected towards the U.S. market, especially in the manufacturing and mineral and metal products sectors. In fact, Korean exports to the rest of East Asia contract by 1 percent ($978 million) and to the EU by 2.2 percent ($715 million).

Preferential liberalization by Korea improves market access for U.S. firms in absolute terms and relative to the other trading partners, especially in the highly protected sectors such as agriculture. Improved market access leads to a large increase in imports from the United States (54 percent). Some increase takes place at the expense of imports from the other regions, which decline by more than 5 percent for the rest of East Asia and the EU. This pattern is generally consistent at the sectoral level, with the

exceptions of the textiles and apparel and services sectors where Korean imports increase from all regions. The bulk of added Korean production of textiles and apparel is being redirected from the domestic market towards the export market, so that imports from other regions are needed to supplement domestic production to satisfy the domestic demand.

Domestic Production

The changes in trade flows have different impacts on output at the sectoral and aggregate level in both countries. Generally, an increased incentive to export would lead to an increase in the output of a sector. Conversely, increased competition taking the form of a higher volume of imports may shrink domestic production in a sector, at least in the short term. As the incentives to produce in a particular sector change, productive resources are reallocated across sectors, and cross-sectoral demands for different factors of production are altered. Because the supply of factors of production is constrained at any given time, expansion of one sector usually means contraction of another. Generally then, membership to an FTA has implications for almost all parts of the economy with some sectors expanding while others contract.

The results of the simulations indicate that changes in domestic sectoral production, four years following the FTA implementation, are generally small in percentage terms, especially for the United States (table 5-7). These results are not unexpected given that U.S. trade with Korea is small relative to total U.S. trade and total U.S. production. For the United States, the FTA-led increase in agricultural exports to Korea would expand production in those sectors by around 0.9 percent. The textiles and apparel sector experiences the largest negative impact, with output declining by 1.3 percent. This drop is driven by the sharp increase in textiles and apparel imports from Korea, which decreases incentives for (or profitability of) domestic production; and the expansion of agricultural production, which squeezes factors of production out of the textiles and apparel sector.

Table 5-7
Effects on sectoral output, by commodities (2005, relative to baseline)

Commodity	United States	Korea	United States	Korea
	Percent change		*Value change million of 1995 dollars*	
Rice	([1])	-0.82	4	-300
Meat products	0.72	-2.97	1,006	-24
Fruits and vegetables	([1])	-0.78	99	-136
Dairy products	0.54	-2.32	641	-137
Rest of agriculture	0.98	-8.44	13,636	-8,222
Natural (extractive) resources	([1])	([1])	-39	-85
Textiles and apparel	-1.30	18.19	-3,678	12,525
Mineral and metal products	([1])	-0.95	-108	-1,217
Other manufacturing	([1])	([1])	584	-1,519
Services	([1])	1.41	22,857	7,352

[1] Less than 0.5 percent.

Sources: GTAP database and USITC calculations.

The reverse would occur in Korea:[16] production in the textiles and apparel sector would increase by 18.2 percent, while production would decline in the remaining sectors, with the exception of services. Factors of production move into the textiles and apparel sector and out of the other sectors, as textiles and apparel exports increase following preferential trade liberalization by the United States. Total agricultural production would decline by around 5.5 percent due to increased imports and competition from the United States and due to the booming textiles and apparel sector.

As one could expect from the magnitudes of the changes reported above, the effects of the U.S.-Korea FTA on each country's GDP are quite small (figure 5-4). In fact, simulation results show that four years following the implementation of the FTA, Korea's GDP is only 0.7 percent ($3.9 billion) higher than the projected baseline. Given that trade with Korea is small compared to the total trade and total output of the United States, the FTA has an even smaller relative effect on U.S. GDP, which increases by about 0.2 percent ($20 billion). Due to trade diversion and loss of market access competitiveness, other regions stand to lose from the FTA in terms of GDP. GDP for the rest of East Asia would drop by 0.16 percent ($13 billion), and the EU by 0.10 percent ($9 billion).

Figure 5-4
Effects on GDP, by region (2005, relative to baseline)

Region	*Percent change*	*Value change million of 1995 dollars*
United States	0.23	19,620
Korea	0.69	3,851

Sources: GTAP database and USITC calculations.

Industrial Employment and Rate of Return

The effects of the FTA on sectoral output would engender small changes in the demand for labor in the United States and Korea. General equilibrium results indicate that for each sector the impact of the FTA is almost identical for skilled and unskilled labor in both countries (table 5-8). In the absence of technological development, changes in demand for the different factors of production should be closely related to changes in the incentives to produce. It is, therefore, not surprising that the effect of the FTA on demand for labor, in general, tends to be very similar to the impact on sectoral output reported earlier. Sectoral demand for labor in the United States increases in agriculture and decreases in the other sectors. Labor demand in textiles and apparel decreases by 1.4 percent. In Korea, labor demand increases by almost 20 percent in the textiles and apparel sector and declines in the remaining sectors.

[16] However, since the United States is one of Korea's largest trading partners, the effects on Korean output are slightly larger in this case.

Table 5-8
Effects on demand for labor, by commodity (2005, relative to baseline)

Commodity	United States		Korea	
	Skilled labor	Unskilled labor	Skilled labor	Unskilled labor
	Percent change			
Rice	([1])	([1])	-1.53	-1.57
Meat products	0.51	0.51	([1])	-0.57
Fruits and vegetables	([1])	([1])	-1.10	-1.13
Dairy products	([1])	([1])	-1.93	-2.00
Rest of agriculture	0.81	0.80	-5.64	-5.73
Natural (extractive) resources	([1])	([1])	-0.55	-0.60
Textiles and apparel	-1.37	-1.38	19.65	19.47
Mineral and metal products	([1])	([1])	-2.04	-2.17
Other manufacturing	([1])	([1])	-0.87	-1.01
Services	([1])	([1])	([1])	([1])

[1] Less than 0.5 percent.

Sources: GTAP database and USITC calculations.

Changes in demand for the different primary factors of production would affect their real rate of return (i.e., the payment made factor's to the owner). In general, an output expansion in a particular sector is accompanied by an increase in the returns to the factors that are intensively used in that sector, and a decrease in returns to factors less intensively used. Simulation results indicate that four years into the FTA, real wages for both unskilled and skilled labor increase in both United States and Korea, although the increase is larger in Korea (figure 5-5). In Korea's textiles and apparel industry the increased demands for unskilled labor raise real wages by 2.7 percent and for skilled labor real wages rise by 2.6 percent. Given that agriculture uses land intensively, the rental rate on land is 2.6 percent lower in Korea when the sector is opened up to U.S. imports. Conversely, the return to land increases by 0.9 percent in the United States. The declining output in the mineral and metal products sector leads to a downward pressure on the returns to natural resources (used mainly in mining) in both countries.

Figure 5-5
Effects on real rate of return on primary factors in the United States and Korea (2005, relative to baseline)

Factor	United States	Korea
	Percent change	
Land	0.93	-2.60
Unskilled labor	0.07	2.70
Skilled Labor	0.06	2.58
Capital	0.08	2.56
Natural resources	-0.20	-2.66

Sources: GTAP database and USITC calculations.

Prices Paid by Consumers

The bilateral tariff eliminations associated with the FTA affect the domestic market prices in each country through various channels. Given that the price paid by the consumer is equal to a good's international price plus any trade taxes, the removal of a trade barrier on that good should decrease its domestic price. At the same time, a policy change that leads to an increase in the demand for (or, a decrease in the supply of) a particular good tends to increase its price. The effects of the FTA on the domestic prices depend on the relative strength and interaction between those offsetting forces. Simulation results indicate that the price changes triggered by the FTA in the United States are positive but very small, ranging from 0.08 percent to 0.34 percent. These price increases are related to the increases in the payments made to the factors of production (leading to greater demand) as well as the general increase in income levels in both countries. Korean domestic prices for agricultural products tend to decline. In fact, prices for meat products drop by 2.5 percent and in the rest of agriculture by 3.6 percent. These declines occur because of the removal of the almost prohibitive import taxes directly reduces the prices paid by consumers, and the increase in imports due to the removal of protection leads to more competition which indirectly tends to lower prices.

Partial Equilibrium Analysis

CGE analysis provides estimates of the possible effects of removing trade barriers at a broad level, but restricts the level of detail in certain sectors of the economy; the degree of sectoral disaggregation is generally limited.[17] The request letter asks the Commission to pay "special attention to agriculture." Therefore, the partial equilibrium analysis estimates the likely impact of the removal of Korean tariffs on imports of selected agricultural products from the United States.[18] In the context of a U.S.-Korea FTA, trade liberalization would give U.S. producers preferential access to the Korean market. As such, only the tariffs applied to U.S. imports are removed, and Korea maintains its tariffs on imports from the rest of the world. Modeled increases in U.S. exports to Korea would be diminished if Korea were also to reduce the tariffs it imposes on other foreign suppliers.

The modeling framework is that of the Commercial Policy Analysis System (COMPAS) partial equilibrium modeling system.[19] An advantage of the partial equilibrium

[17] As noted earlier, the GTAP database breaks out production and trade into 50 sectors.

[18] The products that were selected are those that 1) are traded between the United States and Korea, 2) have been flagged by government agencies and industry as areas of concern, and 3) have sufficiently comprehensive data to allow credible modeling. There are several products that meet these criteria, but to model them all is outside the scope of this report. The purpose is to give the reader a sense of the bilateral trade effects of removing existing tariffs.

[19] In one application, two stages of a production chain are linked together in a way that allows a better understanding of the interactive effects that might accompany joint liberalization of linked markets. Case study 5 explores the effects of the joint removal of tariffs on milling wheat and flour imports.

modeling approach is that the basic structure allows for an analysis at the detailed product level. The data requirements are only a few production, trade and policy variables for the product of interest. However, partial modeling does not account for reallocation of resources across industries, and as a result, does not indicate the interindustry effects of the policy change.[20]

There are several inputs necessary to implement the model. First, the model requires the share of the Korean market accounted for by Korean production, imports from the United States, and imports from the rest of the world. Second, the model requires an initial tariff facing each import source. Additional inputs include model parameters such as the elasticity of substitution among varieties of the product, the elasticity of import supply, the elasticity of domestic supply, and the elasticity of Korean aggregate demand for the product. A discussion of these parameters, and the numerical choices used in the simulation are outlined in greater detail in appendix D.

Table 5-9 reports key model inputs and results. The first two columns report important model inputs–the initial U.S. market share and the level of the initial Korean tariff on imports from the U.S. The final columns report median estimated changes in the three variables: 1) U.S. exports to Korea, 2) rest of world (ROW) exports to Korea, and 3) Korean production.[21] In general, the magnitude of the effect of tariff removal on U.S. exports to Korea depends upon the level of the initial tariff.[22] In the beef, beer, and cheese sectors, the removal of double-digit tariffs leads to substantial increases in U.S. exports to Korea. In the wheat, flour, and industrial corn sectors, the removal of single-digit tariffs induces single-digit percentage changes in Korean imports from the United States. However, these results only apply to a removal of the tariffs; with a history of nontariff barriers on agricultural products in Korea, simply removing the tariffs may or may not generate the reported effects on U.S. exports.

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[20] The partial equilibrium modeling that follows also does not address the impact of nontariff barriers on U.S. imports. Two sectors, beef and industrial corn, are affected by important nontariff barriers not included in the modeling exercise. For example, Korean regulations require that domestic and imported beef not be sold in the same retail outlets. These restrictions may reduce the market access available to U.S. beef imports. Industrial corn is subject to a tariff rate quota administered by the buyers of industrial corn. While the industrial corn buyers allow over quota corn imports at the in-quota tariff rate, the initial setting of the quota may distort the corn market in important ways.

[21] The reported figures are medians calculated from several model runs under various assumptions about input parameters. Model results are best interpreted as informative about the relative magnitudes of predicted changes, rather than as precise estimates of the economic effects of Korean tariff removal.

[22] The results are also sensitive to choices in model parameters. Model parameters were varied over ranges to determine the degree to which model results were sensitive to the choice of parameters. The magnitudes of the reported changes were generally similar across multiple model simulations. Details of the sensitivity analysis are reported in appendix D.

Table 5-9
Estimated effects of the removal of Korean tariffs on U.S. products[1]

Commodity (HS code)	Initial U.S. market share	Initial tariff on imports from the United States	Korean imports from: United States	Korean imports from: Rest of world	Korean production
	Percent			*Percent change*	
Beef (0201 and 0202)	25.7	41.6	61	-9	-4
Beer (2203)	0.2	30.0	101	(2)	(2)
Corn for Industrial use (1005.90.9000)[3]	78.6	3.0	4	-4	(4)
Cheese (0406)	3.7	39.25	64	-1	(2)
Wheat (1001.90.9030)[5]	79.3	2.16	3	-2	(4)
Flour (1101)[5]	40.2	5.0	7	-2	(2)

[1] Median estimated effects reported. See appendix D for full table of results.

[2] Less than 1 percent

[3] Korean commodity code. U.S. classification differs slightly at the 10-digit level

[4] No change. Initial Korean production set to zero.

[5] Wheat and flour estimates are derived from a linked model in which certain varieties of milling wheat serve as an input into Korean flour production. The model considers joint liberalization of flour and wheat tariffs.

Sources: U.S. Department of Commerce statistics and USITC calculations.

Qualitative Assessment of Removing Nonquantifiable Barriers

A number of barriers and other impediments to trade between the United States and Korea that were discussed in chapter 4 are difficult to measure and do not lend themselves to a quantitative analytical approach. The earlier general equilibrium and partial equilibrium analyses do not fully take into account the potential impact of the removal of such barriers and impediments. This section offers a qualitative assessment of the probable impact of the removal of selected barriers.[23]

This section only addresses the probable effects on U.S. exports to Korea.[24] Table 5-10 summarizes the primary Korean nontariff barriers and the potential impact of their removal, while table 5-11 presents the probable effects of the modification of other rules and regulations that restrict trade. In general, the removal of the nontariff barriers and measures would benefit all exporters to Korea; however, only the effects on U.S. exporters are addressed.

[23] The underlying assumption of this section is that these barriers will be eliminated–no attempt is made to assess the probability that the elimination of these barriers would be included in a prospective FTA.

[24] For a discussion of U.S. import restraints, see USITC, *The Economic Effects of Significant U.S. Import Restraints, Second Update: 1999*, USITC pub. 3201, May 1999.

Table 5-10
Qualitative assessment of the effects on U.S. trade of removing certain Korean nontariff barriers as a result of a U.S.-Korea FTA

Korean nontariff barrier	Sectors affected	Effects
Agricultural tariff rate quotas Certain agricultural tariff rate quotas are administered by agricultural cooperatives in Korea. Others are administered by Korean government agencies.	Oranges, corn, soybeans, vegetables, and other fruits	Increased U.S. export opportunities. In certain products, the scope of benefits also depends on the future role of state trading organizations.
Import clearance and customs procedures Lengthy and unpredictable procedures of inspection, certification, and quarantine. Strict labeling requirements.	Food products, agricultural goods, pharmaceuticals	Increased U.S. export opportunities due to the decreased risk of spoilage in transit, lowered costs in testing, and time savings.
Restrictions on motion pictures and television programming The screen quota requires that Korean films be shown a minimum of 106-146 days in Korean theaters. There are also other restrictions on the maximum foreign content of television broadcasts.	Motion pictures and television programming	Increased U.S. export opportunities due to the removal of quotas on exhibition and broadcast of foreign media. The magnitude of potential opportunities depends on whether the current quotas are binding.

Source: USITC compilation.

Table 5-11
Qualitative assessment of the effects on U.S. trade of modifying certain Korean rules and regulations as a result of a U.S.-Korea FTA

Korean nontariff barrier	Sectors affected	Effects
Tax system Korea's tax system taxes autos based on engine size, with large-displacement engines facing a relatively heavier tax burden.	Automobiles	Increased U.S. export opportunities in luxury auto exports due to reduced cost of ownership.
Regulatory regime Vague and arbitrary rules and regulations regarding standards, testing, and certification; sanitary and phytosanitary rules; conformity assessment; labeling; and pricing and distribution.	Agricultural and food products, pharmaceuticals, medical equipment, cosmetics, automobiles, and professional and financial services	Increased U.S. export opportunities due to streamlined implementation and more transparent enforcement of rules and regulations.
Protection of intellectual property Lax enforcement of existing intellectual property laws and lack of confidentiality in the regulatory process.	Pharmaceuticals, cosmetics, "cosmeceuticals", software, audio and video recordings	Increased U.S. export opportunities due to reductions in counterfeiting and piracy and the introduction of more IPR-sensitive products to the Korean market.

Source: USITC compilation.

Agricultural Goods

In terms of trade, the United States is particularly competitive in many food items[25] both on a global scale and bilateral scale (see chapter 3), and U.S. exporters of these products would likely gain increased market share over their competitors in Korea as a result of preferential access from an FTA (tables 5-10 and 5-11). As already discussed, until recently Korea had not imported rice for cultural, environmental, and security reasons. However, as part of the Uruguay Round,[26] Korea now imports a small and growing amount. In 2000, Korea's quota for rice imports was 102,614 metric tons or about 2 percent of the domestic market (5.2 million MT; see chapter 3). Korea's rice quota is scheduled to rise to 205,228 MT in 2004.

The CGE results reported above suggest that U.S. exports of rice to Korea would rise by more than 1,000 percent. Given the extremely low baseline level of U.S. rice exports to Korea, this represents an increase of less than $500,000 in value. However, general equilibrium analysis tends to understate the effects of the removal of prohibitive trade barriers; potential exports could be substantially higher. For example, if U.S. exports captured two percent of Korea's market (comparable to Korea's current rice quota), these exports would be worth approximately $47 million.[27] This represents a thousandfold increase in U.S. rice exports compared to the elevenfold increase suggested by the CGE results.

The situation for corn and soybeans is quite different. While there is a high over-quota tariff on these items, the in-quota amount has been relatively flexible historically to accommodate demand changes.[28] Thus, removing this quota through an FTA might not lead to as strong an increase in U.S. exports to Korea as the size of the quota might imply. The current issue most affecting food grade corn and soybean imports is the negative perception of genetically modified organisms (GMO) in processed foods. This is likely to negatively affect U.S. export growth, despite liberalization. To avoid the possibility of purchasing GMO commingled food grade corn, the Korean Corn Processors Industry Association has sought alternative sources of corn and is currently contracting with South American suppliers. The Korean Agricultural and Fishery Marketing Corporation has paid a premium of more than 10 percent to guarantee GMO-free soybean imports.[29] This would suggest that Korean demand for U.S. food

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[25] Korean imports of fresh oranges are up sharply despite high tariffs and phytosanitary and customs clearance issues.

[26] The Final Act of the Uruguay Round of trade negotiations (annex 5, Agreement on Agriculture) allows Korea to maintain nontariff border measures on rice during the period of tariff reductions. As part of the agreement, the import quota must steadily increase. WTO, The Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, WT/LET/38, found at Internet address *www.wto.org,* retrieved July 12, 2001.

[27] This is based on the year 2000 unit value of milled rice (SITC 04231) exports to Korea of $456 per MT, calculated from USDOC data; and Korea Customs & Trade Institute, *Tariff Schedules of Korea, 2001*, pp. 1272-1273.

[28] USDA, FAS, *Korea, Republic of: Agricultural Situation MMA Quota Increase 2001*, GAIN Report #KS1016, U.S. Embassy, Seoul, Mar. 30, 2001, found at *www.fas.usda.gov*, retrieved May 10, 2001

[29] USDA, FAS, *Korea, Republic of: Grain and Feed Annual 2001*, GAIN Report #KS1014, U.S. Embassy, Seoul, March 30, 2001, found at *www.fas.usda.gov*, retrieved May 10, 2001; USDA, FAS, *Korea, Republic of: Oilseeds and Products Annual 2001*, GAIN Report #KS1007, U.S. Embassy Seoul, Feb. 28, 2001, found at *www.fas.usda.gov*, retrieved May 10, 2001.

grade corn and soybeans would be less responsive to a cut in tariffs or removal of nontariff barriers than modeling indicates, unless the United States successfully segregates GMO and non-GMO production. Such recent changes in preferences are not captured by the general equilibrium modeling above.

Pharmaceuticals and Cosmetics

U.S. exports of pharmaceuticals and cosmetics to Korea would likely increase if the registration procedures, standards, and labeling rules were streamlined, Korean intellectual property right (IPR) laws were more strictly enforced, and the pharmaceuticals pricing regime were modified to ensure equal national treatment. A complex and lengthy registration procedure and the required disclosure of sensitive documents to Korean regulatory authorities[30] have deterred U.S. pharmaceutical and cosmetics companies from exporting to Korea, particularly products that are IPR-sensitive.[31] The U.S. pharmaceutical industry estimates that its share of the innovative drug market would increase by at least $500 million,[32] although pressures in Korea to contain health care costs could moderate U.S. export growth. These gains would be greater in more IPR-intensive goods since Korean companies are competitive in generic and over-the-counter drugs.

Services

Changes in laws and regulations are likely to increase exports of entertainment services. The removal of screen quotas and restrictions on foreign programming on cable and broadcast television would likely spur an increase in U.S. market share in Korea. The potential gains depend on the degree to which the restrictions are binding.[33]

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[30] USTR, *Identification of Trade Expansion Priorities Pursuant to Executive Order 13116*, Apr. 30, 2001, p. 26, found at Internet address *www.ustr.gov*, retrieved May 10, 2001.

[31] USITC, *U.S.-Korea FTA: The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea*, May 17, 2001, transcript of the hearing, pp. 86-87.

[32] PhRMA, "Issues Around the World," found at *www.phrma.org*, retrieved May 19, 2001.

[33] Approximately 35 percent of ticket sales were generated by Korean films in 1999 and 2000 (chapter 4). If the effective screen quota is the maximum of 146 days, then the average daily receipts for Korean films is approximately 19 percent lower than the average daily receipts for foreign films, suggesting that the screen quota is binding. However, because theaters can receive exceptions that reduce the quota to as low as 106 days, the effective screen quota could be significantly below 146 days. Because the effective quota is unreported, it is difficult to determine the degree to which the screen quota is, in fact, binding. Thus, it is difficult to determine the extent to which lifting the screen quota would generate additional U.S. exports of motion pictures to Korea.

Audio and Video Recordings and Software

More vigorous enforcement of copyright and software piracy laws would likely result in a significant increase in U.S. sales of business software, game software, and audio and video recordings in the Korean market. Industry representatives estimate current annual lost sales at over $300 million.[34] With the Korean software market projected to grow by 30 percent per year,[35] greater enforcement of IPR through an FTA would represent a substantial benefit to U.S. industry.

[34] IIPA, *2001 Special 301 Report: South Korea*, p. 214, found at *www.iipa.com*, retrieved Apr.25, 2001.

[35] USITC staff interview with Korean Government official, Seoul, Korea, Apr. 26, 2001.

APPENDIX A
Request Letter from the U.S. Senate Committee on Finance

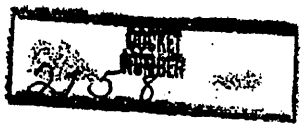
Recd: 12/18/00
ER - Response
SE - Docket
Comm.

United States Senate

COMMITTEE ON FINANCE

WASHINGTON, DC 20510–6200

December 14, 2000



The Honorable Stephen Koplan
Chairman
U.S. International Trade Commission
500 E Street, SW
Washington, D.C. 20436

Dear Mr. Chairman:

In 1998, we initiated a broad review of U.S. trade policy aimed at restoring American leadership on trade. One of the concerns that motivated our review was that, absent American leadership on trade, the process of liberalizing trade and America's trading interests would suffer as a consequence. While there has been progress in the interim, most notably with the negotiation of China's accession to the World Trade Organization ("WTO") and the launch of WTO negotiations on agriculture and services as part of the "built-in agenda," there have also been notable failures such as the failure to launch a new round of multilateral trade negotiations in Seattle this past year.

While the United States has largely remained on the sidelines, a number of our trading partners have aggressively pursued free trade area negotiations that raise the prospect of segmenting markets to our commercial disadvantage. Canadian negotiations with Chile, Mexican negotiations with the European Union ("EU"), and the EU's negotiation of a series of bilateral arrangements with eastern and central European states represent a small sample of agreements that have been cut without U.S. participation. Furthermore, at least in the case of the EU's bilaterals with eastern and central European states, the agreements go beyond simply offering preferences that will undercut American competitiveness in world markets. In some cases, barriers to U.S. trade are affirmatively raised. That in turn raises the separate question of how such arrangements could be justified under the terms of Article XXIV of the GATT 1994 with respect to such arrangements.

In light of those developments, we would be interested in obtaining the Commission's advice on the economic effects of negotiating trade liberalizing arrangements of our own that would serve America's trading interests. In part, what the Committee is looking for is an assessment of where the United States, both consumers and producers, would benefit most from the negotiation of trade liberalizing arrangements. There is little doubt that, given the size of the United States market relative to the rest of the world, we would benefit most from the initiation of a new round of multilateral talks within the WTO framework. But, the question remains, in the absence of such negotiations, where can the United States obtain the greatest benefit from engaging in bilateral or regional arrangements?

In the interests of addressing that question and advancing the cause of American trading interests, we expect to ask the Commission over the course of the next several months for a series of investigations under section 332(g) of the Tariff Act of 1930, as amended, examining the economic effects of negotiating bilaterally or regionally with particular trading partners to advance the United States' interests. Those requests will follow on the report requested this past year with respect to the economic effects of negotiating a free trade arrangement with the United Kingdom, which was delivered to the Committee this past August.

As the next step in that process, we would like to have the Commission's assessment of the economic effects of the establishment of a free trade agreement between the United States and the Republic of Korea. Korea's economic growth throughout the last two decades has been remarkable, even taking into account the effects of the financial crisis that struck Asian markets in 1997-98. Korea may have been the first to reignite economic growth, based largely on the willingness of the Kim Dae Jung government to undertake liberalizing reforms. What that offers is the prospect of opening negotiations with Korea that, consistent with Korea's own reform intiatives, move our trading relationship beyond the series of bilateral hurdles that beset our bilateral relationship in the past.

As a part of its report, the Committee requests that the Commission provide, to the extent possible, the following:

- An overview of the Korean economy;
- An overview of the current economic relationship between the United States and the Republic of Korea, including a discussion of the important industry sectors in both countries;
- An inventory and analysis of the main barriers (tariff and non-tariff) to trade between the United States and the Republic of Korea.;
- To the extent data are available, the estimated economic effects of eliminating all quantifiable trade barriers (tariffs and non-tariff), with special attention to agricultural goods, on:
  - the volume of trade in goods and services between the two countries;
  - sectoral output and Gross Domestic Product for each country;
  - wages and employment across industry sectors for each country;
  - final prices paid by the consumers in each country.
- A qualitative assessment of the economic effects of removing non-quantifiable trade barriers.

The Commission should provide its completed report no later than 9 months from the receipt of this request. We would also ask that you undertake, to the maximum extent possible, a dynamic, as well as a static, analysis of the economic effects of removing barriers to trade between the United States and Korea.

Sincerely,

William V. Roth, Jr.
Chairman

Daniel Patrick Moynihan
Ranking Member

APPENDIX B
Federal Register Notice

ddress from public disclosure, which ve will honor to the extent allowable by aw. There also may be circumstances in vhich we would withhold a espondent's identity from public lisclosure, as allowable by law. If you vish us to withhold your name and/or ıddress, you must state this ɔrominently at the beginning of your ɔomment. We will make all submissions rom organizations or businesses, and rom individuals identifying themselves ıs representatives or officials of ɔrganizations or businesses, available for public disclosure in their entirety.

You may request a Summary of the DEIS or the entire DEIS (with appendices in printed copy or on computer disk). Copies may be obtained from the above address, by telephone (605) 394–9757 ext. 3004, or through email at kparr@gp.usbr.gov. Copies are also available for public inspection and review on the internet at "www.dka.gp.usbr.gov" in the "Current Activities" section under "Angostura Unit".

See SUPPLEMENTARY INFORMATION section for additional addresses where the DEIS is available for public inspection and review.

FOR FURTHER INFORMATION CONTACT: Kenneth Parr, Rapid City Field Office, 515 9th Street, Room 101, Rapid City, SD 57701 telephone—(605) 394–9757 ext. 3004, or email kparr@gp.usbr.gov

SUPPLEMENTARY INFORMATION:

DEIS Public Inspection and Review Locations

Offices

- Bureau of Reclamation, Rapid City Field Office, 515 9th Street, Room 101, Rapid City, SD 57701—telephone (605) 394–9757 ext. 3004.
- Bureau of Reclamation, Dakotas Area Office, 304 East Broadway Ave., Bismarck, ND 58502—telephone (701) 250–4242.
- Bureau of Reclamation, Great Plains Regional Office, 316 North 26th Street, Billings, MT 59101—telephone (406) 247–7638.
- Bureau of Reclamation, Reclamation Service Center Library, Building 67, Room 167, Denver Federal Center, Sixth and Kipling, Denver, CO 80225—telephone (303) 445–2072.
- Bureau of Reclamation, Program Analysis Office, Room 7456, 1849 C Street NW, Washington, DC 20240—telephone (202) 208–4662.
- Angostura Irrigation District in South Dakota, Main Street, Oral, SD 57766.

Libraries

South Dakota State Library, Mercedes MacKay Building, 800 Governors Drive, Pierre, South Dakota 57501–2294.

Rapid City Public Library, 610 Quincy Street, Rapid City, SD 57701–3655.

Hot Springs Library, 1543 Baltimere Avenue, Hot Springs, South Dakota 57747.

Custer County Library, 447 Crook #4, Custer, South Dakota 57730.

Oglala Lakota College, 3 Mile Creek, Piya Wiconi Road, Kyle, South Dakota 57752.

Cheyenne River Community College, Main Street, Box 212, Eagle Butte, South Dakota 57625.

Lower Brule Tribal Library, Lower Brule Sioux Tribe, Lower Brule, South Dakota 57548.

Pine Ridge Library, Main St., Box 439, Pine Ridge, South Dakota 57770.

Hearing Process Information

Organizations and individuals wishing to present oral statements are strongly encouraged to contact Kenneth Parr, Bureau of Reclamation, Rapid City Field Office, at the address above, telephone (605) 394–9757 ext. 3004, or email at kparr@gp.usbr.gov, to announce their intention to participate in the public hearing. Requests to make presentations will also be accepted at the hearings. Written statements may also be submitted at the hearings.

Oral statements at the public hearings will be limited to 5 minutes. If time permits, the hearing officer may allow speakers to extend their oral statement after all persons wishing to comment have been heard. Whenever possible, speakers will be scheduled according to the time preference requested in their letter or telephone request. Scheduled speakers not present at the public hearing when called will lose their privilege in the scheduled order and will be recalled at the end of all the scheduled speakers. Those registering at the meetings may choose from the remaining time slots.

Please notify Reclamation at least 2 weeks in advance of the scheduled hearing if you require special needs in order to participate in the public hearing. Those having special needs should contact Kenneth Parr at (605) 394–9757 or through the Federal Relay System at (800) 877–8339 or via e-mail at kparr@gp.usbr.gov. Smoking will be prohibited in the hearing room and surrounding area.

Dated: January 3, 2001.

Gerald Kelso,

Assistant Regional Director.

[FR Doc. 01–1530 Filed 1–17–01; 8:45 am]

BILLING CODE 4310–MN–P

INTERNATIONAL TRADE COMMISSION

[Investigation 332–425]

U.S.-Korea FTA: The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation and scheduling of public hearing.

EFFECTIVE DATE: January 9, 2001.

SUMMARY: Following receipt of a request on December 18, 2000, from the Senate Committee on Finance (Committee), the Commission instituted investigation No. 332–425, U.S.-Korea FTA: The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)). The Commission plans to submit its report by September 18, 2001.

As requested by the Committee, in its report the Commission will provide to the extent possible:

- An overview of the Korean economy
- An overview of the current economic relationship between the United States and the Republic of Korea, including a discussion of the important industry sectors in both countries
- An inventory and analysis of the main barriers (tariff and nontariff) to trade between the United States and the Republic of Korea
- To the extent data are available, the estimated effects of eliminating all quantifiable trade barriers (tariff and nontariff), with special attention to agricultural goods, on:
- The volume of trade in goods and services between the two countries
- Sectoral output and gross domestic product for each country
- Wages and employment across industry sectors for each country
- Final prices paid by consumers in each country
- A qualitative assessment of the effects of removing nonquantifiable trade barriers

FOR FURTHER INFORMATION CONTACT: Information may be obtained from Christine McDaniel, Project Leader (TEL: 202–708–5404; EMAIL: cmcdaniel@usitc.gov), Office of Economics, or Alan Fox, Deputy Project Leader (TEL: 202–205–3267; EMAIL: afox@usitc.gov), Office of Economics, U.S. International Trade Commission, Washington, DC, 20436. For information on the legal aspects, contact William

Gearhart (TEL: 202–205–3091; EMAIL: wgearheart@ustic.gov), Office of the General Counsel. Hearing impaired individuals are advised that information on this matter can be obtained by contacting the TDD terminal on (202) 205–1810.

Background: In its letter to the Commission, the Committee stated that a number of the United States' trading partners have aggressively pursued free trade area negotiations that may segment markets to the commercial disadvantage of the United States. The Committee indicated that over the course of the next several months it expects to ask the Commission for a series of investigations under section 332 related to the economic impact of negotiating bilaterally or regionally with particular trading partners in the absence of a new round of multilateral talks.

Public Hearing: A public hearing in connection with the investigation will be held at the U.S. International Trade Commission Building, 500 E Street SW, Washington, DC, beginning at 9:30 a.m. on May 17, 2001. All persons shall have the right to appear, by counsel or in person, to present information and to be heard. Requests to appear at the public hearing should be filed with the Secretary, United States International Trade Commission, 500 E Street SW, Washington, DC 20436, no later than 5:15 p.m., April 27, 2001. Any prehearing briefs (original and 14 copies) should be filed no later than 5:15 p.m., May 4, 2001; the deadline for filing post-hearing briefs or statements is 5:15 p.m., May 25, 2001. In the event that, as of the close of business on April 27, 2001, no witnesses are scheduled to appear at the hearing, the hearing will be canceled. Any person interested in attending the hearing as an observer or nonparticipant may call the Secretary of the Commission (202–205–1806) after April 27, 2001, to determine whether the hearing will be held.

Written Submissions: In lieu of or in addition to participating in the hearing, interested parties are invited to submit written statements (original and 14 copies) concerning the matters to be addressed by the Commission in its report on this investigation. Commercial or financial information that a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available in the Office of the Secretary of the Commission for inspection by interested parties. To be assured of consideration by the Commission, written statements relating to the Commission's report should be submitted to the Commission at the earliest practical date and should be received no later than the close of business on May 25, 2001. All submissions should be addressed to the Secretary, United States International Trade Commission, 500 E Street SW, Washington, DC 20436. The Commission's rules do not authorize filing submissions with the Secretary by facsimile or electronic means.

Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its Internet server (http://www.usitc.gov).

List of Subjects

Republic of Korea, Free Trade Agreement, Tariffs, and Imports.

Issued: January 10, 2001.
By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 01–1489 Filed 1–17–01; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 731–TA–919–920 (Preliminary)]

Certain Welded Large Diameter Line Pipe From Japan and Mexico

AGENCY: United States International Trade Commission.

ACTION: Institution of antidumping investigations and scheduling of preliminary phase investigations.

SUMMARY: The Commission hereby gives notice of the institution of investigations and commencement of preliminary phase antidumping investigations Nos. 731–TA–919–920 (Preliminary) under section 733(a) of the Tariff Act of 1930 (19 U.S.C. 1673b(a)) (the Act) to determine whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Japan and Mexico of certain welded large diameter line pipe [1] that are alleged to be sold in the United States at less than fair value. Unless the Department of Commerce extends the time for initiation pursuant to section 732(c)(1)(B) of the Act (19 U.S.C. 1673a(c)(1)(B)), the Commission must reach a preliminary determination in antidumping investigations in 45 days, or in this case by February 26, 2001. The Commission's views are due at the Department of Commerce within five business days thereafter, or by March 5, 2001.

For further information concerning the conduct of these investigations and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A through E (19 CFR part 201), and part 207, subparts A and B (19 CFR part 207).

EFFECTIVE DATE: January 10, 2001.

FOR FURTHER INFORMATION CONTACT: Diane J. Mazur (202–205–3184), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202–205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its internet server (http://www.usitc.gov).

SUPPLEMENTARY INFORMATION:

Background.—These investigations are being instituted in response to a petition filed on January 10, 2001, by Berg Steel Pipe Corp., Panama City, FL; American Steel Pipe Division of American Cast Iron Pipe Co., Birmingham, AL; and Stupp Corp., Baton Rouge, LA.

Participation in the investigations and public service list.—Persons (other than petitioners) wishing to participate in the investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in sections 201.11 and 207.10 of the Commission's rules, not later than seven days after publication of this notice in the Federal Register. Industrial users and (if the merchandise under investigation is sold at the retail level) representative consumer organizations

[1] For purposes of these investigations certain welded large diameter line pipe are welded circular carbon and alloy products of a kind used in oil and gas pipelines with an outside diameter greater than 16 inches, regardless of stenciling. The products provided for in subheadings 7305.11.10, 7305.11.50, 7305.12.10, 7305.12.50, 7305.19.10, 7305.19.50 of the Harmonized Tariff Schedule of the United States.

APPENDIX C
List of Submissions and List of Hearing Participants

USITC Docket Report as of 7-15-2001
332-TA-425 (Final)

12-18-2000	Petition filed by William V. Roth to Koplan, United States Senate, on behalf of United States Senate (ITC -Seq# 200012180002 - Public)
01-10-2001	Institution of investigation filed by Donna R. Koehnke, Secretary, on behalf of Commission (ITC -Seq# 200101100016 - Public)
01-11-2001	News release filed by Peg O'Laughlin 01-003, Office of External Relations, on behalf of Commission (ITC -Seq# 200101110010 - Public)
01-11-2001	Institution of investigation filed by Donna R. Koehnke, Secretary, on behalf of Commission (ITC -Seq# 200101110031 - Public)
01-18-2001	Federal Register notice filed by Donna R. Koehnke, Secretary, on behalf of Commission (ITC -Seq# 200101180009 - Public)
01-31-2001	Appearance filed by Carlos Moore, American Textile Manufacturers Institute, on behalf of American Textile Manufacturers Institute (ITC -Seq# 200101310021 - Public)
04-20-2001	Appearance filed by Mitchell J. Cooper, Mitchell J. Cooper, on behalf of Rubber and Plastic Footwear Manufacturers Association (ITC -Seq# 200104200017 - Public)
04-23-2001	Appearance filed by Louis Santucci, the Cosmetic toiletry and Fragrance Association, on behalf of the Cosmetic Toiletry and Fragrance Association (ITC -Seq# 200104230069 Public)
04-26-2001	Appearance filed by Max Baucus, United States Senate, on behalf of United States Senate (ITC -Seq# 200104260021 - Public)
04-27-2001	Appearance filed by Charles Uthus, Automotive Trade Policy Council, on behalf of Automotive Trade Policy Council (ITC -Seq# 200104270019 - Public)
04-27-2001	Comments filed by Bud Middaugh, American Potato Trade Alliance, on behalf of American Potato Trade Alliance (ITC -Seq# 200104270023 - Public)

05-09-2001	News release filed by Peg O'Laughlin 01-060, Office of External Affairs, on behalf of Commission (ITC -Seq# 200105090031 - Public)
05-16-2001	Statement filed by Charles Bremer, American Textile Manufacturers Institute, on behalf of American Textile Manufacturers Institute (ITC -Seq# 200105160030 - Public)
05-17-2001	Hearing material filed by William R. Bishop, Office of the Secretary, on behalf of Commission (ITC -Seq# 200105170034 - Public)
05-18-2001	Transcript filed by Donna R. Koehnke hearing, Secretary, on behalf of Commission (ITC -Seq# 200105180005 - Limited)
05-22-2001	Comments filed by H. L. Kephart, Specialty Sheel Industry of North America and G. O. Carlson Inc., on behalf of Specialty Steel Industry of North America and G. O. Carlson Inc. (ITC -Seq# 200105220056 - Public)
05-23-2001	Letter filed by Frank Shin, Hyundai Motor Company, on behalf of Hyundai Motor Company (ITC -Seq# 200105230046 - Public)
05-25-2001	Comments filed by Joon-Hwa Kwon, Korea International Trade Association, on behalf of Korea International Trade Association (ITC -Seq# 200105250029 - Public)
05-25-2001	Statement filed by Andrew Lavigue, Florida Citrus Mutual, on behalf of Florida Citrus Mutual (ITC -Seq# 200105250042 - Public)
05-25-2001	Comments filed by Gilbert B. Kaplan, Hale and Dorr, on behalf of Micron Technology Inc. (ITC -Seq# 200105250053 - Public)
05-29-2001	Comments filed by Charles D. Uthus, Automotive Trade Policy Council, on behalf of Automotive Trade Policy Council (ITC -Seq# 200105290004 -Public)
05-30-2001	Comments filed by Maureen R. Smith, American Forest and Paper Association, on behalf of American Forest and Paper Association (ITC -Seq# 200105300033 - Public)
06-01-2001	Comments filed by Hyun-Kyu Frank Shin, Hyundai Motor Company, on behalf of Hyundai Motor Company (ITC -Seq# 200106010074 - Public)

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject:	U.S.-Korea FTA: The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea
Inv. No.:	332-425
Date and Time:	May 17, 2001 - 9:30 a.m.

Sessions were held in connection with the investigation in the Main Hearing Room, 500 E Street, S.W., Washington, D.C.

Organization and Witness

The Cosmetic, Toiletry, and Fragrance Association (CTFA), Washington, D.C.

Louis Santucci, Vice President, International Affairs

American Textile Manufacturers Institute, Washington, D.C.

Charles N. Bremer, Director, International Trade Division

Mitchell J. Cooper Law Offices Washington, D.C. *on behalf of*

Rubber and Plastic Footwear Manufacturers Association (RPFMA)

Mitchell J. Cooper)–OF COUNSEL

Automotive Trade Policy Council, Washington, D.C.

Stephen J. Collins, President

APPENDIX D
Technical Appendix

APPENDIX D

The discussion that follows focuses on the three types of quantitative analysis incorporated in this report: the revealed comparative advantage index (chapter 3), computable general equilibrium analysis (chapter 5) and partial equilibrium analysis (chapter 5).

Revealed Comparative Advantage Index

The revealed comparative advantage (RCA) index is used to examine the structure of bilateral trade as well and the relative complementarity of each country's traded goods. The RCA index provides a simple measure of a country's sectoral strengths and weaknesses.[1] The traditional RCA index measures a country's comparative advantage in terms of its exports and the index can be calculated on a global and a bilateral scale. The global RCA index, using the United States as an example, is the U.S. share of exports in a given product in U.S. total exports relative to the world counterpart, or:

$$\frac{\left(\dfrac{\text{U.S. exports in a given product}}{\text{U.S. exports in all products}}\right)}{\left(\dfrac{\text{World exports in a given product}}{\text{World exports in all products}}\right)}$$

In the case of the United States, when the index is greater than unity, then a given product's share in U.S. total exports exceeds the average counterpart for the world. In other words, the United States is a relatively heavy exporter of a given product, and is said to have a revealed comparative advantage in that product. When the index is less than 1, it is considered to have a revealed comparative disadvantage in that product. The index is fairly robust to business cycle differences across trading partners since a business cycle would likely affect all sectors similarly. The index also is generally insensitive to the size of trade barriers as long as the barriers are not discriminatory against one country. The index is also altered by an unusual strength or weakness against the dollar.[2]

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[1] For a discussion of the RCA index, see Bela Balassa, "Trade Liberalization and ëRevealed Comparative Advantage'," Manchester School of Economic and Social Studies, vol. 33, pp. 90-123, May, 1965; and J. David Richardson and Chi Zhang, "Revealing Comparative Advantage: Chaotic or Coherent Patterns across Time and Sector and U.S. Trading Partner?" National Bureau of Economic Research, Working Paper 7212, July 1999.

[2] The latest year for which data are available is 1998 but it is not used in the analysis below since the value of the Korean Won against the dollar decreased notably during the Asian financial crisis. Thus, 1997 data are used.

In general, there is potential for increased trade in product categories for which one country has a comparative advantage (the RCA is greater than 1) and the other country does not (the RCA index is less than 1). The bilateral and global RCA indices for the United States and Korea for 1997 are reported in tables D-1 and D-2. The two countries have comparative advantages in several different products.

At the global level, sectors in which Korea has a comparative advantage and the United States does not include leather goods, textile yarn, rubber manufactures, iron and steel, and fish. The products in which the United States has a comparative advantage and Korea does not include some agricultural products (meat, cereals, miscellaneous edible products, animal oils and fats, oil seeds, animal feed), tobacco, hides and skins, pulp and waste paper, inorganic chemicals, fertilizers, chemical materials, certain machinery and equipment (specialized and power generating), professional instruments (optical, medical, and measurement instruments), and some resource-based products (coal, coke, cork and wood). Sectors in which both Korea and the United States have a comparative advantage include textile fibers, organic chemicals, and artificial resins and plastic materials.

In order to understand the structure of bilateral trade patterns, global and bilateral RCA indices were calculated to examine the comparative advantage of the United States and Korea in the global marketplace, and in each other's market, respectively. A U.S.-Korea bilateral RCA index is a measure of the U.S. share of exports to Korea in a given product in U.S. total exports to Korea relative to the world counterpart, or:

$$\frac{\left(\dfrac{\text{U.S. exports to Korea in a given product}}{\text{U.S. exports to Korea in all products}}\right)}{\left(\dfrac{\text{World exports to Korea in a given product}}{\text{World exports to Korea in all products}}\right)}$$

A U.S. (Korea) index greater than unity indicates that the U.S. (Korea) is a heavy exporter in a particular product relative to other countries that export to Korea (United States). Korea has a sole revealed comparative advantage in textile yarn and fabrics, travel goods and handbags, rubber manufactures, iron and steel, apparel and clothing accessories, and metal manufactures. The United States has a sole comparative advantage in agriculture products (oil seeds, meat, animal oils, fruit and vegetables, cereals, miscellaneous edible products, tobacco, live animals), some chemical products, pulp and waste paper, professional instruments, road vehicles, essential oils and perfumes, and specialized and power generating manufactured goods (see table 3-2).

Areas in which both countries have a comparative advantage include textile fibers, office and electrical machines, telecommunication equipment, armored fighting vehicles, and artificial resins and plastics. These are the sectors in which bilateral trade appears highly competitive and/or the United States and Korea are

production-sharing partners. Semiconductors would be an example in which the United States and Korea are production-sharing partners and competitive.[3]

Thus, overall, the comparative advantage indices illustrate that the structure of U.S.-Korea bilateral trade is largely complementary. U.S. firms have the greatest potential for exports to Korea in a wide range of agricultural products, and certain chemicals and manufacturing products. The greatest potential for Korean exports to the United States seems to be in textiles, apparel, leather goods, and iron and steel.

The GTAP Model

In general, the dynamic questions that are of interest to policymakers involve the ways in which the trade policy under consideration interacts with other changes that are expected in the economies of interest. In this report, the Commission used a sequential version of the standard static Global Trade Analysis Project (GTAP) model that was adjusted to address those specific issues.[4] This appendix details the procedures used to adapt the standard GTAP model in order to assess the likely impacts of a FTA between the United States and Korea. First, the basic features of the static GTAP model are introduced. Second, the adjustments made to the standard database are discussed. The third and fourth sections present various aspects of the baseline construction and solution techniques. Some simulation results (not presented in chapter 5) are reported in the fifth section.

The Standard GTAP Model[5]

The GTAP model is a static general equilibrium model consisting of a documented global data base on international trade, country and regional interindustry relationships, national income accounts, and a standard modeling framework to organize and analyze the data. It allows for comparisons of the global economy in two environments-one in which the base values of policy instruments such as tariffs or export restrictions are unchanged, and another in which these measures are changed–or shocked–to reflect the policies that are being studied. A change in policy makes itself felt throughout the countries or regions depicted in the model. The static model by design does not produce information about the speed with which changes occur, about what happens to various dimensions of the economies in the meanwhile,

[3] According to U.S. Department of Commerce data, Korea is among the top five U.S. semiconductor production-sharing partners. For a description of the production-sharing process, see USITC *Production Sharing: Use of U.S. Components and Materials in Foreign Assembly Operations, 1992-1995*, pub. 3032, April 1997.

[4] Other important issues such as adjustment costs and anticipated versus unexpected policies are not addressed here.

[5] For further information, see T.M. Hertel (ed.), *Global Trade Analysis: Modeling and Application*. Cambridge: Cambridge University Press, 1997.

Table D-1
Bilateral Revealed Comparative Advantage Indices for the United States and Korea, 1997

SITC	Description	United States	Korea
			Baseline=1
00	Live animals chiefly for food	2.06	0.00
01	Meat and meat preparations	2.21	0.00
02	Dairy products and birds' eggs	0.99	0.08
03	Fish, crustaceans, mollusks, and preparations thereof	0.63	0.37
04	Cereals and cereal preparations	2.05	0.67
05	Vegetables and fruit	1.59	0.06
06	Sugar, sugar preparations and honey	0.21	0.09
07	Coffee, tea, cocoa, spices and manufactures thereof	0.54	0.02
08	Feeding stuff for animals not including unmilled cereals	0.50	0.02
09	Miscellaneous edible products and preparations	2.05	0.85
11	Beverages	0.28	0.08
12	Tobacco and tobacco manufactures	1.74	0.23
21	Raw hides, skins and furskins	3.18	0.04
22	Oil seeds and oleaginous fruit	3.93	0.00
23	Crude rubber (including synthetic and reclaimed)	0.27	0.63
24	Cork and wood	0.95	0.00
25	Pulp and waste paper	1.93	0.00
26	Textile fibers (except wool tops)	1.72	4.29
27	Crude fertilizers and crude materials, n.e.s.	0.89	0.25
28	Metalliferous ores and metal scrap	1.15	0.05
29	Crude animal and vegetable materials, n.e.s	0.39	0.19
32	Coal, coke and briquettes	0.42	0.00
33	Petroleum, petroleum products and related materials	0.13	0.11
34	Gas, natural and manufactured	0.03	0.00
41	Animal oils and fats	1.67	0.04
42	Fixed vegetable oils and fats	0.92	0.00
43	Animal or vegetable fats and oils processed; waxes and inedibles	0.59	0.02
51	Organic chemicals	1.02	0.47
52	Inorganic chemicals	1.47	0.12
53	Dyeing, tanning and coloring materials	0.50	0.92
54	Medicinal and pharmaceutical products	0.69	0.07
55	Essential oils and perfume material, toilet cleansing preparations	1.10	0.19
56	Manufactured fertilizers	0.70	0.01
58	Artificial resins, plastic materials, cellulose esters	1.34	1.37
59	Chemical materials and products ,n.e.s.	1.09	0.48
61	Leather, leather manufactures, n.e.s. and dressed furs	0.65	0.44
62	Rubber manufactures, n.e.s.	0.97	1.75
63	Cork and wood manufactures other than furniture	0.44	0.10
64	Paper, paperboard and all articles thereof	1.71	0.34
65	Textile yarn, fabrics, made-up articles n.e.s.	0.27	2.99
66	Non-metallic mineral manufactures, n.e.s.	0.74	0.13
67	Iron and steel	0.11	1.69
68	Non-ferrous metals	0.37	0.17
69	Metal manufactures.	0.90	1.32
71	Power generating machinery and equipment	1.49	0.34
72	Machinery specialized for particular industries	1.24	0.66
73	Metalworking machinery	0.90	0.72

See notes at end of table.

Table D-1—*Continued*
Bilateral Revealed Comparative Advantage Indices for the United States and Korea, 1997

SITC	Description	United States	Korea
		Baseline=1	
74	General industrial machinery, equipment and parts n.e.s.	0.91	0.67
75	Office machines and automatic data processing machines	1.65	1.42
76	Telecommunications and sound recording apparatuses	1.78	1.26
77	Electrical machinery, apparatus and appliance	1.38	3.33
78	Road vehicles (including air cushion vehicles)	1.32	0.83
79	Other transport equipment, n.e.s.	3.75	0.81
81	Sanitary, plumbing, heating and lighting fixtures and fittings	1.12	0.52
82	Furniture and parts thereof	0.67	0.15
83	Travel goods, handbags and similar containers	0.39	1.80
84	Articles of apparel and clothing accessories	0.18	1.68
85	Footwear	0.21	0.57
87	Professional, scientific and controlling instruments	1.56	0.61
88	Photographic apparatus, optical goods, watches and clocks	0.41	0.75
89	Miscellaneous manufactured articles, n.e.s.	1.73	0.95
93	Special transactions and commodities, not classified according to kind	1.15	0.00
94	Animals, live, n.e.s.,incl. zoo-animals	0.89	0.03
95	Armoured fighting vehicles and arms of war	3.79	1.32

Note.—n.e.s.=not elsewhere specified.

Source: USITC calculations based on Statistics Canada data, two-digit SITC.

or what may have happened to change some of the underlying dynamic structures of the economies, such as specific patterns of foreign direct investment or technological changes that may alter the future growth pattern of economies.

Results from the GTAP model are based upon established global trade patterns. This means that the model is unable to estimate changes in trade in commodities that have not been historically traded. That is to say, if zero trade now exists between two countries for a particular commodity, the model will assume that there will always be no trade in that commodity. Furthermore, patterns of trade may exist for such reasons as the distance between countries or cultural preferences. The GTAP model does not directly account for historical or cultural factors as determinants of trade patterns. However, the model will realistically tend to show smaller effects of policy changes operating on smaller trade flows, and larger effects on larger flows.

In the GTAP model, domestic products and imports are consumed by firms, governments, and households. Product markets are assumed to be perfectly competitive (implying zero economic profit for the firm), with imports as imperfect substitutes for domestic products (i.e., consumers are aware of the source of the products and may distinguish between them based on the foreign or domestic origin), and sectoral production determined by global demand and supply of the output.

Table D-2
Global Revealed Comparative Advantage Indices for the United States and Korea, 1997

SITC	Description	United States	Korea
			Baseline=1
00	Live animals chiefly for food	0.59	0.00
01	Meat and meat preparations	1.18	0.22
02	Dairy products and birds' eggs	0.20	0.00
03	Fish, crustaceans, mollusks, and preparations thereof	0.45	1.13
04	Cereals and cereal preparations	1.74	0.21
05	Vegetables and fruit	0.90	0.13
06	Sugar, sugar preparations and honey	0.28	0.50
07	Coffee, tea, cocoa, spices, manufactures thereof	0.23	0.09
08	Feeding stuff for animals, not including unmilled cereals	1.57	0.04
09	Miscellaneous edible products and preparations	1.23	0.37
11	Beverages	0.35	0.19
12	Tobacco and tobacco manufactures	2.02	0.08
21	Raw hides, skins and furskins	1.85	0.07
22	Oil seeds and oleaginous fruit	3.77	0.00
23	Crude rubber (including synthetic and reclaimed)	0.93	0.79
24	Cork and wood	1.06	0.01
25	Pulp and waste paper	1.73	0.00
26	Textile fibers (except wool tops)	1.38	1.75
27	Crude fertilizers and crude materials, n.e.s.	0.97	0.35
28	Metalliferous ores and metal scrap	0.80	0.06
29	Crude animal and vegetable materials, n.e.s	0.63	0.54
32	Coal, coke and briquettes	1.25	0.01
33	Petroleum, petroleum products and related materials	0.20	0.62
34	Gas, natural and manufactured	0.11	0.07
35	Electric current	0.12	0.00
41	Animal oils and fats	2.28	0.03
42	Fixed vegetable oils and fats	0.55	0.04
43	Animal or vegetable fats and oils processed; waxes and inedibles	0.46	0.16
51	Organic chemicals	1.17	1.20
52	Inorganic chemicals	1.28	0.40
53	Dyeing, tanning and coloring materials	0.78	0.67
54	Medicinal and pharmaceutical products	0.79	0.14
55	Essential oils and perfume material, toilet cleansing preparations	0.99	0.19
56	Manufactured fertilizers	1.52	0.53
58	Artificial resins, plastic materials, cellulose esters	1.13	1.79
59	Chemical materials and products, n.e.s.	1.44	0.39
61	Leather, leather manufactures, n.e.s. and dressed furs	0.45	3.39
62	Rubber manufactures, n.e.s.	0.91	1.63
63	Cork and wood manufactures other than furniture	0.57	0.13
64	Paper, paperboard, and pulp products	0.91	0.64
65	Textile yarn, fabrics, made-up articles n.e.s.	0.44	3.19
66	Non-metallic mineral manufactures, n.e.s.	0.60	0.23
67	Iron and steel	0.36	1.61
68	Non-ferrous metals	0.60	0.64
69	Metal manufactures.	0.89	1.00
71	Power generating machinery and equipment	1.68	0.24
72	Machinery specialized for particular industries	1.44	0.71

See notes at end of table.

Table D-2—*Continued*
Global Revealed Comparative Advantage Indices for the United States and Korea, 1997

SITC	Description	United States	Korea
			Baseline=1
73	Metalworking machinery	1.08	0.51
74	General industrial machinery, equipment and parts n.e.s.	1.16	0.67
75	Office machines and automatic data processing machines	1.40	0.87
76	Telecommunications and sound recording apparatuses	1.01	1.53
77	Electrical machinery, apparatus and appliance	1.29	2.21
78	Road vehicles (including cushion vehicles)	0.94	1.05
79	Other transport equipment, n.e.s.	2.53	2.20
81	Sanitary, plumbing, heating and lighting fixtures and fittings	0.53	0.28
82	Furniture and parts thereof	0.72	0.16
83	Travel goods, handbags and similar containers	0.19	1.09
84	Articles of apparel and clothing accessories	0.37	0.91
85	Footwear	0.10	0.55
87	Professional, scientific and controlling instruments	2.14	0.53
88	Photographic apparatus, optical goods, watches and clocks	0.69	0.57
89	Miscellaneous manufactured articles, n.e.s.	1.09	0.74
93	Special transactions and commodities, not classified according to kind	1.02	0.00
94	Animals, live, n.e.s., incl. zoo-animals	1.00	0.44
95	Armoured fighting vehicles and arms of war	4.53	0.24

Note.—n.e.s.=not elsewhere specified.
Source: USITC calculations based on Statistics Canada data, two-digit SITC.

Updating the GTAP Database

The current version of the GTAP database (version 4) covers trade in 50 commodity aggregates, or GTAP sectors, among 45 countries and regions. For computational tractability in this study, the database has been aggregated to five regions and 10 commodity groups as shown in tables D-3 and D-4.

In addition to the data on trade in each of the commodities between each pair of countries or regions in the model, there are data on the domestic production and use of each commodity (including use in the production of other commodities), the supply and use of land, labor, capital, the population, and GDP. The database also contains information on tariffs, some nontariff barriers, and other taxes. Information on the services sector is limited and highly aggregated. An additional component of the data is a set of parameters which, in the context of the model's equations, determine its behavior. These are principally a set of elasticity values that determine, among other things, the extent to which imports and domestically produced goods are substitutes for one another.

Table D-3
Commodity and regional aggregation

Commodity aggregation	Regional aggregation
Rice	United States
Meat products	Korea
Fruits and vegetables	Rest of East Asia[2]
Dairy products	European Union
Rest of agriculture	Rest of the world
Natural (extractive) resources	
Textiles and apparels	
Mineral and metal products	
Other manufacturing	
Services[1]	

[1] The GTAP database contains only a limited and highly aggregated representation of the services sector. Unlike the other sectors in the database, services are not fully tradable and the border measures captured in the GTAP protection data do not fully represent the actual restrictions to trade in services.

[2] China, Hong Kong, Japan, Taiwan, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam.

Source: GTAP database.

Table D-4
Sectoral composition

Sectoral aggregation	GTAP sectors
Rice	Paddy rice, processed rice
Meat products	Cattle, sheep, goats, horses, meat products nec
Fruits and vegetables	Fruits and vegetables, fruit, nuts
Dairy products	Dairy products, raw milk
Rest of agriculture	Rest of agriculture
Natural (extractive) resources	Gas, oil, coal, petroleum, coal products
Textiles and apparels	Textiles, wearing apparel, leather products
Mineral and metal products	Metal products, ferrous metals, minerals nec, mineral products nec, metals nec
Other manufacturing	Chemical, rubber, plastic products, paper products, publishing, beverages and tobacco products, machinery and equipment nec, electronic equipment, motor vehicles and parts, transport equipment nec, manufactures nec
Services	Gas manufacture, distribution, water, dwellings, public administration, defense, education, health, electricity, construction, finance, business, rec service, trade, transportation

Source: GTAP database.

The current standard GTAP data is based on the year 1995–i.e., trade flows and barriers, population and other data refer to the world in that year. For the purpose of the present study, the standard data set was updated to reflect the year 2000 using data from The World Bank for two variables (population and GDP), as well as U.S. bilateral trade flows. The trade protection data set was also adjusted to represent a policy environment in which all policy measures ratified under the Uruguay Round and

the Agreement on Textiles and Clothing (ATC), and scheduled to be implemented by 2001, are in place.[6] This updated data set is used as the base data for the current analysis.

Construction of the Counterfactual Projected Baseline

In an effort to approximate a dynamic process in which the world's economies change over time, the impacts of the FTA are measured against an eight-year projected baseline (from 2001 to 2009) constructed using data from The World Bank.[7] In order to produce the projected baseline, the model should take into account expected growth in both resources (factors of production) and in the efficiency of the productive technology in each of the regions under consideration.

GTAP has five factors of production (capital, skilled labor, unskilled labor, land, and natural resources). In creating the projected baseline, the land and natural resource endowments were assumed to remain fixed, while both types of labor and capital are allowed to grow. Estimates of growth in the capital stock were assumed to be in line with The World Bank GDP forecasts. Growth rates of skilled and unskilled labor were assumed equal to the forecasts of population growth rates.[8] The projected annual growth rates for the whole 2001-2009 period for output and labor are reported in table D-5.

Table D-5
Projected annual growth rate, 2001-2009

Region	GDP	Labor
	(Percent growth rate)	
United States	2.53	0.80
Korea	5.33	0.69
Rest of East Asia	3.69	1.39
European Union	2.62	-0.02
Rest of the world	4.13	1.41

Sources: The World Bank and USITC calculations.

The World Bank data do not report expected growth in total factor productivity (TFP), a variable that represents the growth of economic efficiency in each country. However, the implicit rate of TFP growth can be derived from model simulations that estimate the

[6] Trade liberalization associated with the Uruguay Round and the ATC were obtained on a yearly basis from the dynamic GTAP database.

[7] This eight-year period is divided into two intervals (beginning of 2001 to beginning of 2005 and beginning of 2005 to beginning of 2009). Forecast data include projections of population and GDP.

[8] The World Bank forecasts supply estimates of population growth, but do not project how the composition of the population changes over time. There are likely to be changes over time in the rate of unemployment, the share of workers that could be considered "skilled," and the productivity of the average worker. Without projections on these variables, they are assumed fixed over time. The available forecasts from The World Bank (received in a communication from GTAP staff, July 14, 2000) only go through the year 2007, so average annual growth rates through 2007 are applied to the period between 2007 and 2009.

efficiency gains that would allow the projected growth in inputs to produce the expected growth in output.[9] In order to determine the baseline growth in TFP, the GTAP model is adjusted so that it addresses this, using forecasts of labor, capital, and GDP. The additional efficiency needed to produce the forecast change in output then becomes an *input* into the projected baseline.[10]

For each time interval of the counterfactual baseline, the protection data are adjusted to reflect the phasing-in of the trade policy measures ratified under the Uruguay Round and the ATC. Thus, the first period (2001-2005) contains scheduled liberalization up to 2005, and the second period (2005-2009) includes the remaining ATC and Uruguay Round liberalizations.[11] Liberalizations that are scheduled to occur in an intermediate year (2002), are not taken into account until the subsequent modeling year (2005 in this case).

Solution Techniques

A typical experiment conducted in the standard GTAP framework measures the long-term effects of a one-time, full implementation of an agreement.[12] It is assumed in the model that sufficient time is allowed to let the full effect of the agreement work its way through the economy. Reported figures show the effects of a trade policy shock as it would have appeared in the base year of the data. Such estimates require no assumptions about the time required for full adjustment. The primary disadvantage of the static approach is that it does not account for expected changes in the economy over time.

In the present counterfactual analysis, the baseline described earlier is assumed to represent a reasonable estimate of the likely evolution of the relevant variables in the absence of the U.S.-Korea FTA or other trade policy changes.[13] The modeling

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[9] Solving the model to produce TFP growth rates is equivalent in concept to the growth accounting approach typically used in simple calculations. In growth accounting, 3 percent growth in GDP and 2 percent growth in inputs (capital and labor) implies a 1 percent (3 - 2 = 1) increase in TFP. Because the mathematical structure of the GTAP model is more complicated than the model used in growth accounting, we could not use growth accounting, though the estimates calculated in growth accounting would be quite similar to those calculated within the model. Because the purpose of the exercise is to eventually replicate the GDP forecast exactly, TFP growth must be forecast within the context of the model.

[10] Economies undergo several kinds of technological change over time. These assumptions capture only the average change in an economy's ability to change a given bundle of inputs into output. One aspect of technical change is how the nature of an economy's input-output structure changes over time. For example, as a developing economy grows, it may begin to use a larger share of capital (tractors) in agricultural production. These projections assume no change in input-output structures over time.

[11] The ATC and Uruguay Round liberalizations are scheduled to be completely phased in by 2005.

[12] See, for example, USITC, *The Impact on the U.S. Economy of Including the United Kingdom in a Free Trade Arrangement with the United States, Canada, and Mexico*, USITC pub. 3339, August 2000, or USITC, *Overview and Analysis of the Economic Impact of U.S. Sanctions with Respect to India and Pakistan*, USITC pub. 3236, September 1999.

[13] It should be stressed that the projected baseline is not intended as a forecast, but as a projection that relies on average expected growth rates. Unexpected events may lead the actual macroeconomic evolution of the variables of interest to differ substantially from the projected baseline. The projected baseline is simply the Commission's best estimate of how these variables are expected to evolve, given the inputs from The World Bank forecasts of input and output growth.

approach is a sequential simulation of the static GTAP model, with an updating procedure that allows key macroeconomic variables in the model to match the World Bank forecasts of these variables.[14] This framework allows for changes in the productive resources (capital and labor) available in each region, as well as their productivity, so that the changing trade pattern can be affected both by the tariff cuts and by projected changes in inputs and in economy-wide output. The effects of the agreement at a given point in time are estimated by; 1) calculating baseline data by shocking the model with cumulative (from 2001) increases in labor, capital and TFP, 2) solving the model once again using the FTA liberalization, and 3) reporting the results of the modeling. This procedure is done for each solution point (2005 and 2009). In absence of information to the contrary, it is assumed that all trade barrier elimination take place at once, in 2001, with no gradual phase-in provision. Thus, the same FTA liberalization is used for each solution point. Economic agents portrayed in the model are not able to link the periods of time when they make their decisions.[15] Thus, the decision makers are neither forward- nor backward-looking, they simply act in each period as the relevant resource constraints bind them to do.

Measuring the Impacts of the FTA

The probable effects of the U.S.-Korea FTA reported here are simply the deviations of the relevant variables from their levels in the projected baseline, at any given solution point. Reported deviations in economic variables like production, trade, and income, indicate the likely degree to which the policy causes the modeled economies to deviate from their expected paths. Changes in the variables of interest are measured in percentage terms, relative to the projected baseline, four years (and then eight years) after the FTA goes into effect. This assumes that full adjustment to a trade policy shock occurs in four years. The effects of the 2001 trade liberalization measured on Korea and the United States in 2005 are reported and discussed in chapter 5. Because differences from the baseline are quite similar across years, the full results for 2009 are quite similar to those reported for 2005. This result is not very surprising given that they measure the effect of the same policy experiment, and that no dramatic changes have been applied to the baseline data.[16] For completeness, the full set of results are reported for both years are presented here (tables D-6 to D-20).

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[14] The inclusion of time-specific data forces the analyst to make specific assumptions about the timing of economic adjustment to the proposed tariff cuts. In this case, it is assumed that the economic adjustments to each proposed tariff cut will be completed within a six-year period following each round of cuts. The six-year adjustment period used in this modeling exercise is sufficiently long to make such assumptions plausible.

[15] In this sense, the model is not quite as rigorous as some dynamic CGE models, which allow the agents the possibility to consider future outcomes when making current decisions.

[16] The similarity of the 2005 and 2009 results show that the long-run impact of the FTA is generally unaffected by the baseline year in which the shocks are applied. As a result, measured long-run changes estimated in the dynamic analysis (the results estimated for 2009) are almost exactly equivalent to the long-run estimates that would have been estimated in a static exercise that contained no updated baseline. The solution procedures and economic forces that act in the dynamic analysis are exactly those that operate in a static analysis. The only differences between the results of dynamic and static analyses result from the policy shocks being applied to updated data. In general, these differences are quite small.

Table D-6
Effects on U.S. exports, by destination (2005, relative to baseline)

Commodity	Korea	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	1,026.93	-1.70	-1.34	-1.50	-1.47
Meat products	120.70	-1.49	-1.40	-1.40	7.12
Fruits and vegetables	108.73	-1.56	-1.76	-1.82	([1])
Dairy products	954.62	-1.49	-1.31	-1.42	15.46
Rest of agriculture	216.00	-1.78	-1.49	-1.58	9.27
Natural (extractive) resources	17.61	-0.85	-0.82	-0.82	([1])
Textiles and apparels	49.19	-2.83	-1.55	-2.09	-1.13
Mineral and metal products	21.39	-1.22	-1.42	-1.31	([1])
Other manufacturing	37.40	-1.51	-1.53	-1.36	([1])
Services	1.26	-1.15	-1.12	-1.19	-1.07
Total	53.95	-1.48	-1.36	-1.37	0.84
	Value change (million 1995 dollars)				
Rice	([2])	-0.66	-1.19	-12.33	-13.97
Meat products	715.56	-58.54	-5.57	-49.50	601.95
Fruits and vegetables	69.16	-39.80	-16.92	-38.10	-25.66
Dairy products	207.30	-3.38	([2])	-13.57	190.02
Rest of agriculture	9,431.94	-479.77	-239.91	-628.38	8,083.88
Natural (extractive) resources	91.09	-16.92	-26.64	-67.04	-19.51
Textiles and apparels	163.08	-71.66	-45.41	-241.68	-195.67
Mineral and metal products	395.56	-103.93	-156.84	-370.92	-236.13
Other manufacturing	8,021.43	-1,698.63	-1,839.98	-3,373.98	1,108.84
Services	80.03	-414.79	-1,054.68	-708.39	-2,097.83
Total	19,175.36	-2,888.08	-3,387.47	-5,503.89	7,395.92

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-7
Effects on U.S. exports, by destination (2009, relative to baseline)

Commodity	Korea	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	1,019.87	-1.72	-1.35	-1.51	-1.48
Meat products	119.61	-1.50	-1.41	-1.42	7.12
Fruits and vegetables	104.85	-1.62	-1.83	-1.87	([1])
Dairy products	934.48	-1.50	-1.32	-1.42	15.27
Rest of agriculture	213.08	-1.79	-1.51	-1.60	9.23
Natural (extractive) resources	17.63	-0.83	-0.80	-0.80	([1])
Textiles and apparels	48.45	-2.87	-1.58	-2.14	-1.20
Mineral and metal products	20.67	-1.23	-1.44	-1.32	-0.54
Other manufacturing	37.02	-1.53	-1.54	-1.38	([1])
Services	1.01	-1.16	-1.12	-1.20	-1.08
Total	53.54	-1.50	-1.37	-1.38	0.83
	Value change (million 1995 dollars)				
Rice	([2])	-0.78	-1.21	-14.24	-15.98
Meat products	738.31	-61.05	-5.55	-51.38	620.34
Fruits and vegetables	84.39	-50.23	-18.37	-45.73	-29.95
Dairy products	223.24	-3.61	([2])	-14.92	204.37
Rest of agriculture	9,927.36	-502.23	-249.75	-680.13	8,495.26
Natural (extractive) resources	101.61	-18.64	-27.00	-71.93	-15.96
Textiles and apparels	160.01	-71.67	-47.40	-252.71	-211.77
Mineral and metal products	368.93	-103.06	-157.54	-376.68	-268.36
Other manufacturing	8,227.47	-1,729.70	-1,928.17	-3,539.55	1,030.05
Services	69.34	-437.85	-1,089.32	-760.48	-2,218.31
Total	19,900.92	-2,978.81	-3,524.65	-5,807.75	7,589.72

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-8
Effects on U.S. imports, by source (2005, relative to baseline)

Commodity	Korea	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	1.72	1.16	0.79	1.08	1.13
Meat products	14.04	0.89	0.67	0.89	0.87
Fruits and vegetables	1.55	1.23	0.85	1.11	1.10
Dairy products	550.35	0.77	0.57	0.82	1.39
Rest of agriculture	31.73	1.08	0.79	1.05	1.17
Natural (extractive) resources	0.56	([1])	([1])	([1])	([1])
Textiles and apparel	125.19	-4.30	-4.74	-4.41	3.37
Mineral and metal products	14.45	([1])	([1])	([1])	0.76
Other manufacturing	8.30	0.56	([1])	([1])	0.87
Services	-4.95	0.85	0.64	0.84	0.61
Total	21.40	([1])	([1])	([1])	0.98
	Value change (million 1995 dollars)				
Rice	([2])	3.05	([2])	([2])	3.62
Meat products	([2])	0.84	2.63	27.75	31.33
Fruits and vegetables	([2])	0.64	1.35	53.67	55.71
Dairy products	14.54	([2])	7.27	5.88	27.70
Rest of agriculture	178.31	161.68	147.37	741.38	1,228.74
Natural (extractive) resources	0.77	7.93	14.49	228.98	252.17
Textiles and apparel	7,008.37	-1,739.58	-374.21	-1,744.83	3,149.75
Mineral and metal products	382.65	96.98	50.14	278.64	808.41
Other manufacturing	2,886.61	1,660.84	345.02	967.83	5,860.30
Services	-209.07	339.14	539.75	424.59	1,094.41
Total	10,262.34	531.53	733.92	984.35	12,512.14

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-9
Effects on U.S. imports, by source (2009, relative to baseline)

Commodity	Korea	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	2.92	1.19	0.80	1.11	1.16
Meat products	14.01	0.90	0.68	0.90	0.88
Fruits and vegetables	2.74	1.29	0.89	1.16	1.15
Dairy products	552.53	0.79	0.59	0.84	1.40
Rest of agriculture	31.09	1.10	0.80	1.07	1.19
Natural (extractive) resources	-0.83	([1])	([1])	([1])	([1])
Textiles and apparels	124.69	-4.30	-4.73	-4.40	3.26
Mineral and metal products	14.31	0.47	([1])	([1])	0.77
Other manufacturing	7.50	0.57	([1])	([1])	0.86
Services	-4.58	0.85	0.63	0.84	0.62
Total	20.59	([1])	([1])	([1])	0.98
	Value change (million 1995 dollars)				
Rice	([2])	3.00	([2])	([2])	3.56
Meat products	([2])	0.82	2.47	27.21	30.60
Fruits and vegetables	([2])	0.65	1.47	55.90	58.09
Dairy products	13.57	([2])	7.04	5.64	26.26
Rest of agriculture	169.92	163.18	151.38	751.68	1,236.16
Natural (extractive) resources	-1.35	8.47	16.70	230.81	254.62
Textiles and apparels	7,308.95	-1,818.96	-325.38	-1,935.97	3,228.65
Mineral and metal products	403.32	94.91	43.76	274.92	816.92
Other manufacturing	2,790.50	1,778.75	337.66	1,058.50	5,965.41
Services	-197.87	354.74	532.73	443.95	1,133.54
Total	10,487.22	585.56	767.94	913.09	12,753.81

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-10
Effects on Korean exports, by destination (2005, relative to baseline)

Commodity	United States	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	1.72	-0.66	([1])	([1])	([1])
Meat products	14.04	10.56	10.33	10.73	10.57
Fruits and vegetables	1.55	([1])	([1])	([1])	([1])
Dairy products	550.35	3.20	3.80	3.21	84.09
Rest of agriculture	31.73	16.27	16.96	16.88	17.88
Natural (extractive) resources	0.56	-0.77	-0.77	-0.72	-0.69
Textiles and apparel	125.19	7.31	8.69	8.18	27.27
Mineral and metal products	14.45	-5.86	-6.13	-6.00	-3.02
Other manufacturing	8.30	-3.04	-3.05	-2.90	([1])
Services	-4.95	-5.49	-5.47	-5.54	-5.40
Total	21.40	-1.05	-2.24	-0.96	3.51
	Value change (million 1995 dollars)				
Rice	([2])	([2])	([2])	([2])	([2])
Meat products	([2])	18.22	([2])	([2])	18.96
Fruits and vegetables	([2])	1.12	([2])	([2])	1.18
Dairy products	14.54	([2])	([2])	([2])	15.03
Rest of agriculture	178.31	647.62	65.70	173.95	1,065.58
Natural (extractive) resources	0.77	-17.50	([2])	([2])	-17.09
Textiles and apparel	7,008.37	1,135.22	235.96	804.92	9,184.47
Mineral and metal products	382.65	-651.02	-82.76	-211.70	-562.83
Other manufacturing	2,886.61	-1,448.73	-711.49	-1,085.25	-358.87
Services	-209.07	-662.98	-222.99	-218.88	-1,313.92
Total	10,262.34	-978.00	-715.16	-536.69	8,032.49

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-11
Effects on Korea exports, by destination (2009, relative to baseline)

Commodity	United States	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	2.92	([1])	1.01	0.88	0.94
Meat products	14.01	10.52	10.28	10.69	10.53
Fruits and vegetables	2.74	1.58	1.44	1.49	1.59
Dairy products	552.53	3.54	4.18	3.55	78.62
Rest of agriculture	31.09	16.28	16.97	16.89	17.79
Natural (extractive) resources	-0.83	-0.69	-0.69	-0.64	-0.69
Textiles and apparels	124.69	7.21	8.60	8.06	26.40
Mineral and metal products	14.31	-5.54	-5.82	-5.68	-2.84
Other manufacturing	7.50	-2.87	-2.87	-2.72	-0.38
Services	-4.58	-5.14	-5.10	-5.17	-5.04
Total	20.59	-0.94	-2.05	-0.85	3.33
	Value change (million dollars)				
Rice	([2])	([2])	([2])	([2])	([2])
Meat products	([2])	18.21	([2])	([2])	18.94
Fruits and vegetables	([2])	4.77	([2])	([2])	4.89
Dairy products	13.57	([2])	([2])	([2])	14.12
Rest of agriculture	169.92	647.58	64.90	179.19	1,061.58
Natural (extractive) resources	-1.35	-18.67	([2])	([2])	-20.40
Textiles and apparels	7,308.95	1,198.67	260.89	888.60	9,657.11
Mineral and metal products	403.32	-670.23	-85.56	-226.10	-578.58
Other manufacturing	2,790.50	-1,475.66	-751.18	-1,153.92	-590.27
Services	-197.87	-643.04	-213.22	-219.35	-1,273.48
Total	10,487.22	-938.31	-723.74	-531.24	8,293.92

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-12
Effects on Korea imports, by source (2005, relative to baseline)

Commodity	United States	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	1,026.93	([1])	([1])	([1])	([1])
Meat products	120.70	-49.51	-49.62	-49.52	33.86
Fruits and vegetables	108.73	-44.16	-44.37	-44.22	28.40
Dairy products	954.62	-50.06	-50.18	-50.06	71.74
Rest of agriculture	216.00	-56.54	-56.67	-56.56	26.73
Natural (extractive) resources	17.61	-0.79	-0.92	-0.89	([1])
Textiles and apparel	49.19	9.92	9.42	9.80	11.55
Mineral and metal products	21.39	([1])	([1])	([1])	2.06
Other manufacturing	37.40	-5.71	-5.97	-5.83	5.28
Services	1.26	2.87	2.65	2.86	2.43
Total	53.95	-5.38	-5.75	-8.19	6.19
	Value change (million 1995 dollars)				
Rice	([2])	([2])	([2])	([2])	([2])
Meat products	715.56	-78.76	-58.52	-168.53	409.75
Fruits and vegetables	69.16	-20.41	([2])	-10.52	38.05
Dairy products	207.30	-0.72	-60.07	-18.10	128.42
Rest of agriculture	9,431.94	-2,027.76	-669.46	-2,915.07	3,819.65
Natural (extractive) resources	91.09	-39.55	-1.28	-124.84	-74.58
Textiles and apparel	163.08	454.45	141.30	101.44	860.27
Mineral and metal products	395.56	3.44	-3.88	([2])	395.49
Other manufacturing	8,021.43	-2,422.65	-823.04	-354.61	4,421.13
Services	80.03	244.48	122.73	177.87	625.10
Total	19,175.36	-3,887.53	-1,352.39	-3,312.02	10,623.41

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-13
Effects on Korea imports, by source (2009, relative to baseline)

Commodity	United States	Rest of East Asia	EU	Rest of the world	Total
	Percent change				
Rice	1,019.87	-0.70	-1.04	-0.78	-0.38
Meat products	119.61	-49.75	-49.87	-49.76	33.38
Fruits and vegetables	104.85	-45.15	-45.36	-45.22	29.71
Dairy products	934.48	-51.03	-51.14	-51.02	73.79
Rest of agriculture	213.08	-56.94	-57.06	-56.95	26.98
Natural (extractive) resources	17.63	-0.79	-0.92	-0.89	-0.36
Textiles and apparels	48.40	9.44	8.95	9.33	11.03
Mineral and metal products	20.67	([1])	([1])	([1])	1.91
Other manufacturing	37.02	-5.55	-5.81	-5.66	5.06
Services	1.01	2.70	2.49	2.70	2.25
Total	53.54	-5.30	-5.79	-8.02	5.99
	Value change (million 1995 dollars)				
Rice	([2])	([2])	([2])	([2])	([2])
Meat products	738.31	-82.90	-58.94	-176.77	419.71
Fruits and vegetables	84.39	-23.70	([2])	-12.56	47.91
Dairy products	223.24	-0.79	-64.19	-19.17	139.10
Rest of agriculture	9,927.36	-2,136.16	-682.70	-3,064.99	4,043.51
Natural (extractive) resources	101.61	-44.08	-1.50	-133.63	-77.60
Textiles and apparels	160.01	452.81	123.65	102.75	839.22
Mineral and metal products	368.93	6.09	-3.07	3.38	375.32
Other manufacturing	8,227.47	-2,578.72	-780.79	-376.81	4,491.15
Services	69.34	256.60	121.29	186.33	633.55
Total	19,900.92	-4,151.25	-1,346.47	-3,491.63	10,911.58

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-14
Effects on sectoral output, by commodities (2005, relative to baseline)

Commodity	United States	Korea	Rest of East Asia	EU	Rest of the world
	Percent change				
Rice	([1])	-0.82	([1])	([1])	([1])
Meat products	0.72	-2.97	([1])	([1])	([1])
Fruits and vegetables	([1])	-0.78	([1])	([1])	([1])
Dairy products	0.54	-2.32	([1])	([1])	([1])
Rest of agriculture	0.98	-8.44	([1])	([1])	([1])
Natural (extractive) resources	([1])	([1])	([1])	([1])	([1])
Other manufacturing	([1])	([1])	([1])	([1])	([1])
Textiles and apparel	-1.30	18.19	-0.82	([1])	-0.63
Mineral and metal products	([1])	-0.95	([1])	([1])	([1])
Services	([1])	1.41	([1])	([1])	([1])
	Value change (million 1995 dollars)				
Rice	3.85	-299.96	-521.53	-5.15	-184.84
Meat products	1,005.76	-247.46	-204.60	-324.22	-448.97
Fruits and vegetables	98.94	-135.84	-355.83	-86.83	-301.94
Dairy products	640.63	-136.56	-93.55	-380.95	-364.52
Rest of agriculture	13,635.55	-8,221.99	-5,032.64	-3,019.23	-5,828.36
Natural (extractive) resources	-39.38	-85.30	-240.85	-389.83	-834.31
Other manufacturing	583.84	-1,518.69	-1,215.27	-1,710.69	844.55
Textiles and apparel	-3,678.47	12,524.50	-4,371.58	-1,852.95	-4,019.89
Mineral and metal products	-107.96	-1,216.52	-136.99	-1,190.23	404.76
Services	22,856.79	7,351.98	-11,772.26	-11,966.26	-10,187.09

[1] Less than 0.5 percent.

[2] Less than $500,000.

Sources: GTAP database and USITC calculations.

Table D-15
Effects on sectoral output, by commodities (2009, relative to baseline)

Commodity	United States	Korea	Rest of East Asia	EU	Rest of the world
	Percent change				
Rice	([1])	-1.14	([1])	([1])	([1])
Meat products	0.76	-3.02	([1])	([1])	([1])
Fruits and vegetables	([1])	-1.07	([1])	([1])	([1])
Dairy products	0.58	-2.52	([1])	([1])	([1])
Rest of agriculture	1.02	-8.48	([1])	([1])	([1])
Natural (extractive) resources	([1])	([1])	([1])	([1])	([1])
Textiles and apparels	-1.33	17.62	-0.83	([1])	-0.65
Mineral and metal products	([1])	-0.89	([1])	([1])	([1])
Other manufacturing	([1])	-0.52	([1])	([1])	([1])
Services	([1])	1.32	([1])	([1])	([1])
	Value change (million 1995 dollars)				
Rice	2.59	-418.43	-519.57	-4.95	-182.04
Meat products	1,054.92	-251.99	-203.02	-318.71	-450.20
Fruits and vegetables	104.12	-187.48	-351.40	-84.14	-296.21
Dairy products	684.20	-148.02	-91.70	-385.13	-358.76
Rest of agriculture	14,208.72	-8,252.04	-4,990.31	-2,958.84	-5,766.48
Natural (extractive) resources	-1.92	-82.42	-221.93	-358.31	-763.58
Textiles and apparels	-3,755.76	12,133.03	-4,423.55	-1,828.64	-4,108.83
Mineral and metal products	-132.74	-1,145.57	-100.71	-1,171.89	437.15
Other manufacturing	613.86	-1,692.19	-1,080.85	-1,589.13	953.07
Services	23,211.50	6,865.38	-11,501.73	-11,498.30	-9,915.03

[1] Less than 0.5 percent.

Sources: GTAP database and USITC calculations.

Table D-16
Effects on gross domestic product, by region (2005, 2009, relative to baseline)

Region	Percent change		Value change	
	2005	2009	2005	2009
			Million 1995 dollars	
United States	0.23	0.23	19,620.4	20,805.40
Korea	0.69	0.60	3851.1	3,810.30
Rest of East Asia	-0.16	-0.16	-12,741.4	-13,374.10
EU	-0.10	-0.09	-9,213.8	-9,330.30
Rest of the world	-0.16	-0.16	-10,906.9	-11,633.40

Sources: GTAP database and USITC calculations.

Table D-17
Effects on demand for labor, by commodity (2005, relative to baseline)

Commodity	United States		Korea	
	Skilled labor	Unskilled labor	Skilled labor	Unskilled labor
			Percent change	
Rice	([1])	([1])	-1.53	-1.57
Meat products	0.51	0.51	([1])	-0.57
Fruits and vegetables	([1])	([1])	-1.10	-1.13
Dairy products	([1])	([1])	-1.93	-2.00
Rest of agriculture	0.81	0.80	-5.64	-5.73
Natural (extractive) resources	([1])	([1])	-0.55	-0.60
Other manufacturing	([1])	([1])	-0.87	-1.01
Textiles and apparel	-1.37	-1.38	19.65	19.47
Mineral and metal products	([1])	([1])	-2.04	-2.17
Services	([1])	([1])	([1])	([1])

[1] Less than 0.5 percent.

Sources: GTAP database and USITC calculations.

Table D-18
Effects on demand for labor, by commodity (2009, relative to baseline)

Commodity	United States		Korea	
	Skilled labor	Unskilled labor	Skilled labor	Unskilled labor
			Percent change	
Rice	([1])	([1])	-1.61	-1.64
Meat products	0.54	0.54	-0.50	-0.62
Fruits and vegetables	([1])	([1])	-1.13	-1.15
Dairy products	([1])	([1])	-2.09	-2.16
Rest of agriculture	0.84	0.84	-5.69	-5.78
Natural (extractive) resources	([1])	([1])	-0.54	-0.58
Textiles and apparels	-1.41	-1.41	19.07	18.91
Mineral and metal products	([1])	([1])	-1.92	-2.04
Other manufacturing	([1])	([1])	-0.89	-1.02
Services	([1])	([1])	([1])	([1])

[1] Less than 0.5 percent.

Sources: GTAP database and USITC calculations.

Table D-19
Effects on real rate of return on primary factor in the United States and Korea (2005, 2009, relative to baseline)

Factor	2005		2009	
	United States	Korea	United States	Korea
	Percent change			
Land	0.93	-2.60	0.96	-2.91
Unskilled labor	(1)	2.70	(1)	2.50
Skilled Labor	(1)	2.58	(1)	2.39
Capital	(1)	2.56	(1)	2.39
Natural resources	(1)	-2.66	(1)	-2.80

1 Less than 0.5 percent.

Sources: GTAP database and USITC calculations.

Table D-20
Effects on market prices in the United States and Korea, by commodities (2005, 2009, relative to baseline)

Commodity	2005		2009	
	United States	Korea	United States	Korea
	Percent change			
Rice	(1)	(1)	(1)	(1)
Meat products	(1)	-2.48	(1)	-2.47
Fruits and vegetables	(1)	(1)	(1)	-0.52
Dairy products	(1)	-0.95	(1)	-1.03
Rest of agriculture	(1)	-3.58	(1)	-3.58
Natural (extractive) resources	(1)	(1)	(1)	(1)
Textiles and apparels	(1)	(1)	(1)	-1.38
Mineral and metal products	(1)	-1.39	(1)	1.04
Other manufacturing	(1)	1.10	(1)	(1)
Services	(1)	1.41	(1)	1.31

1 Less than 0.5 percent.

Sources: GTAP database and USITC calculations.

Partial Equilibrium Analysis

This section briefly discusses the analytical framework used to simulate the impact of import tariffs in selected countries and markets in the case studies. The modeling framework is an extension of the Commercial Policy Analysis System or COMPAS, a partial equilibrium trade model, which has been developed by the USITC.

The COMPAS framework is specifically designed to assess the impacts of imports and import tariffs on the prices and production of like goods in the domestic market (Glance, 1995).[17] The model assumes that demanders in a certain market respond to the availability of lower priced imports by switching their purchases away from the domestically produced variety of the good. Domestic producers respond to the reduced demand by lowering their selling price, reducing production, or both. The data requirements of the model, for each market, are domestic supply, imports from the United States and the rest of world and domestic demand, in monetary terms, i.e., expenditures and revenues.

An important feature of COMPAS is that demanders are assumed to differentiate goods by their place of origin: imports and domestic like goods are assumed to be close, but imperfect substitutes. The result of such product differentiation is that the market prices of domestic and imported goods are not equal. However, structural assumptions in the model allow all price changes to be expressed in percentage terms, so the initial prices can be normalized to one.

For a single market, the COMPAS model requires estimates of supply and demand elasticities and the constant elasticity of substitution among national production varieties, s. Changes in domestic and imported supplies are depend on own-price elasticities of domestic and imports supply. Because the model distinguishes U.S. imports from rest-of-the-world (ROW) imports, two elasticities of imports are required. Formally, the supply function for a given country i appears as:

1)
$$Q_i^S = \frac{Q_{0,i}}{\overline{Q}}\left(\frac{p_i}{(1+\tau_i)}\right)^{\varepsilon_S}$$

where Q_i^s is the quantity supplied by country i to the Korean market, $\overline{Q}_0$ is the initial quantity of all varieties sold in Korea, p_i is the price of country i's good in Korea, t_i is the tariff applied to country i, and Q_o^s is the initial quantity of the country i good sold in Korea. This framework is useful because $dQ_S/Q_S = \varepsilon_S \times dP/P$, i.e., the percent change in supply is equal to the supply elasticity, ε_s, times the percent change in the price received by domestic suppliers.

[17] See "Partial Equilibrium Modeling," by Joseph F. Francois and H. Keith Hall, in *Applied Methods for Trade Policy Analysis*, ed. by Joseph F. Francois and Kenneth A. Reinert, Cambridge University Press, and Glance, Simon, 1995. "COMPAS Model Documentation," Research Branch, Canadian International Trade Tribunal, March.

Demand is modeled to differentiate between domestic and imported varieties of a good with a constant elasticity of substitution function.[18] Formally, the demand equation takes the form:

2) $$Q_i^D = \frac{Q_{0,i}}{\overline{\overline{Q}}} \left(\frac{p_i^s}{\widetilde{P}} \right)^{-\varepsilon_D} E$$

where E is the value of Korean expenditure on all varieties (imports plus domestic production) of the good, and $\widetilde{P}$ is a CES price index for all varieties of the type:

3) $$\widetilde{P} = \left(\sum_{i \in I} \left(\frac{Q_{o,i}}{\overline{\overline{Q}}} \right)^{\sigma} \left(p_i \right)^{1-\sigma} \right)^{\frac{1}{1-\sigma}}$$

The elasticity of substitution, σ, determines the degree to which demanders are willing to substitute one country's goods for another's.

The impact of an import tariff is to increase the domestic price and lower the price received by the exporter of the good, with ad valorem wedge equal to the tariff rate. Removing this tariff lowers the price of U.S. imports and reduces demand for the domestic and other imported varieties. The model is solved by equating supply and demand equations 1 and 2. Model output includes equilibrium prices and quantities for each countries variety of the good.

The Linked Partial Equilibrium Model

For one of the studies reported in chapter 3, the case of wheat and flour, the COMPAS model has been extended to allow for linkages between the processed (or semiprocessed) foods and bulk agricultural commodities in order to gain a better understanding of the interactive effects that might accompany joint liberalization of linked markets. For instance, the model can determine the likely impact on U.S. exports of wheat of a removal of Korean tariffs on imported flour.

For interrelated markets of bulk commodities and processed goods, the model requires two sets (one for each market) of supply, demand and CES elasticities. The model of interrelated markets requires two more parameters that link the two markets: s_{cost}, the

[18] Varian, H.R., 1978. Microeconomic Analysis, W.W. Norton & Company, pp. 17-20,

cost share of the bulk commodity in the production of the processed commodity, and s_{market}, the proportion of the bulk commodity that is used in the production of the processed commodity.

A change in the market price of the bulk commodity will affect the processed food market via the s_{cost} parameter. For example, a reduction in the price of the intermediate input would result in cost savings in the processed good, or final product, (with cost savings being proportional to s_{cost}). At the new market equilibrium, the supply of the final product will be larger and its price lower than in initial equilibrium and the cost savings will be exhausted. Formally this occurs because the supply function (equation 1) can shift when prices change in the upstream market. Formally, the supply function in the downstream market appears as:

4) $$Q_i^s = \frac{Q_o^s}{\overline{Q}}\left(\frac{p_i}{(1+\tau_i)}\right)^{\varepsilon_s}\left(\tilde{P}^{INT}\right)^{-s_{Cost}}$$

where P^{INT} is the price of the intermediate good (wheat). Removal of the tariff on the intermediate lowers the price of imports from the U.S., which reduces the price index P^{INT}. The supply curve in equation 4 shifts out accordingly.

A change in the market price of the processed food item will affect the bulk commodity market via the s_{market} parameter. Formally this process is modeled by allowing Korea's total expenditure on all varieties of the intermediate (E^{INT}) to depend on the initial (before any tariff change) level of expenditure on the intermediate (E_0^{INT}), s_{market}, and the growth in the value of final goods production. Formally this appears as:

5) $$E^{INT} = E_0^{INT}\left(1 - s_{market} + s_{market}\frac{Val_{Korea}^{Fin}}{Val_{0,Korea}^{Fin}}\right)$$

where $Val_{0,Korea}^{Fin}$ is the initial (pre-shock) level of total Korean expenditure on all varieties of the intermediate, and Val_{Korea}^{Fin} is the value of Korean expenditures on the intermediate after the change in tariffs. Reduction in Korea's tariff on the US variety of the final good causes domestic production to fall. The new equilibrium value of Korean production falls below its initial value, and Korean expenditure on the intermediate falls. This reduces demand for all varieties of the intermediate.

Model solution occurs as it does in the single sector model. Supply and demand equations are set equal, and the model returns policy-induced percentage changes in the prices and quantities of each country's variety.

Model Inputs

Models such as those described above are useful because they allow straightforward analysis of the effect of policy changes with a limited amount of data. The inputs required for simulation are data documenting initial market shares, the initial tariffs, and a number of behavioral parameters that describe how agents respond to policy shocks. The collection of market share and tariff data is a straightforward exercise. The choice of model parameters is more difficult, as the relevant parameter estimates are not always directly available from the econometric literature. Instead, sensitivity analyses around reasonable estimates of the behavioral parameters were used to determine the degree to which model outcomes were sensitive to parameter choices.

The choice of an appropriate range of elasticities varies over commodities.[19] Nonetheless, parameter selection can be guided by a number of commodity characteristics based on a few criteria:

1) The elasticity of U.S. and other exporter's supply (to Korea) will be fairly high because Korea represents a relatively small share of world demand for the product. When Korean demand makes up a small share of global imports of each commodity, changes in Korean tariffs can induce large percentage changes in the quantity of Korean imports from a particular source. Large changes are possible because importers are able to divert exports that would otherwise go to alternative destinations. For example, U.S. exporters of wheat can respond to a small change in the price of wheat in Korea by diverting exports that would otherwise go to other countries such as China. If much of the response to changes in the Korean tariffs arises through trade diversion, the increase in U.S. exports to Korea will not induce equivalent changes in the quantity of total U.S. production.[20] The choice of a high elasticity of U.S. and rest of world supply to the Korean market reflects a recognition that most of the additional exports supplied to the Korean market will likely come from a redirecting of existing exports, rather than from an increase in total exports from either source.[21]

2) The elasticity of substitution describes the degree to which Korean consumers view U.S. imports as substitutes for other imports and for domestic production. Unlike many of the other parameters used in this modeling exercise, elasticities of substitution have been estimated econometrically for most commodities. Much of the formal research on elasticities of substitution is done

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[19] One parameter that is not discussed here is the elasticity of Korean supply. The results are generally insensitive to the choice of this parameter. It was set to 1 in all simulations.

[20] Put another way, changes in the Korean wheat tariff should not substantially change the world price for U.S. wheat if Korean demand for wheat imports is small, relative to global demand. If U.S. wheat production is assumed to respond only to changes in the world price for wheat, it is unlikley that Korean tariff changes will substantially affect U.S. production. Korean tariff changes can affect the level of bilateral exports, however, if it is easy to divert trade away from alternative sources. High elasticities of U.S. supply to the Korean market reflect an assumption that trade diversion is likely.

[21] In the case of cheese, the elasticity of U.S. supply is high for another reason. U.S. suppliers can easily respond to an increase in the price they receive in Korea by exporting surplus cheese that would otherwise go unsold in the United States.

with U.S. data,[22] and because the most recent estimates are at a suitable level of commodity disaggregation, these estimates are the primary input into the modeling excercise.[23] The simulations use a range for the elasticity of substitution, starting with the econometric estimate from the literature to twice the value of the respective estimate.

3) The choice of demand elasticities is ambiguous. On the one hand, these commodities typically make up a low share of consumer expenditures, a precondition for low elasticities of demand. On the other hand, narrow commodity groups allow relatively easy cross-commodity substitution, a condition that points toward higher elasticities of demand. In the simulations below, the elasticity of demand will typically be set to 1. Under this parameterization, total expenditure on the commodity (both imports and domestic production) remains constant; reductions in prices are offset by increases in the quantity purchased.[24]

Table D-21 reports the data and parameters used as inputs into the model. Market-share data were taken from various sources. In several cases, the value of U.S. and rest of world imports and of Korean production, were used to calibrate the initial (baseline) conditions of the model. In other cases, domestic (Korean) production data was only available in quantities, so market-share data was calculated in terms of quantities. Model parameters were guided by available estimates where possible. In other cases, ranges for the parameters were selected by the Commission.

Sensitivity Analysis

As in CGE modeling, the results of models like Compas can be sensitive to the choice of behavioral parameters, like the elasticity of supply, which are used as inputs into the model. The results in chapter 5 report the median estimated change in each country's quantity sold in the Korean market. This section reports the range of results that arise

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[22] Gallaway, McDaniel and Rivera estimate Armington elasticities for the United States at the 4-digit SIC level. See Michael Gallaway, Christine McDaniel, and Sandra Rivera, "Long-Run Industry Level Estimates of U.S. Armington Elasticities," USITC Working Paper No. 2000-09a, February, 2001. David Hummels estimated Armington elasticities with U.S. export data and found higher estimates, see David Hummels, "Toward a Geography of Trade Costs," Purdue University mimeograph, January 1999.

[23] In the simulations that follow, it is assumed that Korean consumers' responses to relative price changes between domestic and foreign varieties is similar to that of U.S. consumers' responses. This should not be taken to mean that consumers in both countries are assumed to have the same taste for each variety. The model explicitly allows for consumers' to prefer one variety or another. The use of elasticities of substitution estimated in U.S. data only requires that relative price changes (i.e., a reduction in the price of the U.S. variety, relative to the Korean variety) induce similar rates of substitution between varieties in both countries (in this case, percentage increases in purchases of the U.S. variety compared to percentage decreases in the Korean variety). In the sensitivity analysis below, the elasticity of substitution is varied across simulations to show the degree to which the results are sensitive to the choice of the elasticity of substitution.

[24] The results (in the variable of interest, changes in U.S. exports to Korea) are not especially sensitive to assumptions about either the aggregate elasticity of demand or the domestic (Korean) elasticity of supply.

Table D-21
Model inputs used in COMPAS modeling exercises

Input data		Beef	Beer	Industrial Corn	Cheese	Wheat	Flour
Market share		*Metric tons*	*Million dollars*	*Metric tons*	*Million dollars*	*Thousands of metric tons*	*Metric tons*
	Reporting year	2000	1999	Oct. 1999 - Sept. 2000	1999	2000	1999
	U.S.	[1]143,290	[3]1.4	[5]1,620	[3]6.7	[5]938.5	[7]688
	ROW	[1]136,710	[3]1.1	[5]440	[7]87.1	[5]244	[7]300
	Korea	[1]278,000	[4]924.9	[6]1	[8]87.5	[6]1	[7]782
Tariff[2]	U.S.	41.6	30.0	3.0	[9]39.25	2.16	*5*
	ROW	41.6	30.0	3.0	[9]38.27	2.16	*5*
Elasticity of substitution[10]		1.6 -3.2	3.3-6.6	3-5	1.4 -2.8	3-5	2.7 -5.4
Import supply		*5*-10	*5*-10	*5*-10	*5*-10	*5*-10	*5*-10
Domestic supply		1	1	[11]0	1	[11]0	1
Domestic demand		1	1	1	1	1	1

[1] U.S. Department of Agriculture, Economic Research Service, *Production, Supply and Distribution Database.*

[2] All tariff data taken from APEC Tariff database, available at *www.apectariff.org/.*

[3] Official Statistics of the U.S. Department of Commerce.

[4] Production data obtained from Korea National Statistical Office, *Korea Statistical Yearbook 2000*, pg 246. Pricing data obtained from Foreign Agricultural Service, USDA, "Market Brief- Product: Korea, Republic of: Beer" GAIN Report #KS8046.

[5] U.S. Department of Agriculture, Foreign Agricultural Service, GAIN Report #KS1014, "Republic of Korea: Grain and Feed Annual 2001," March 30, 2001. Varieties of wheat included in the simulation were hard and winter wheat varieties commonly used in the production in flour.

[6] *De minimis* value chosen to allow model solution. Korean production at or near zero. See footnote *5*.

[7] United Nations Trade Data

[8] Imputed from quantity and price data reported in FAS Gain Report #KS9088.

[9] Trade-weighted tariffs calculated by USITC staff from using APEC tariff data base and United Nations Trade data.

[10] Lower bound estimates for beef, beer, cheese, and flour taken from Gallaway, McDaniel and Rivera, USITC Working Paper 2000-09a, February 2000. Other estimates chosen by USITC staff.

[11] No domestic production. Elasticity of supply set to zero so *de minimis* production would not affect results.

Source: Commission calculations.

from different choices of model parameters. The results suggest that in most cases, the magnitude of the expected changes is reasonably robust to the choice of model parameters.

Table D-22 reports ranges of model results for the beef, beer, industrial corn and cheese sectors. In order to provide the reader with some perspective, percentage changes in U.S. exports to Korea are applied to recent export quantities. These figures reveal the likely quantitative impact of the removal of Korean tariffs on U.S. exports.

Table D-22
Range of changes, over parameter choices, in Korean imports from the removal of Korean tariffs on U.S. products

Commodity (HS code)	*Percent change* Korean imports from United States	Korean imports from Rest of world	Korean production	Implied increase in the quantity of U.S. exports *thousands*
Beef (0201 and 0202)	47 to 90	-4 to -19	-2 to -6	67 to 129 (metric tons)
Beer (2203)	68 to 182	([1])	([1])	1 to 3.2 (kilolitres)
Corn for industrial use (1005.90.9000)[2]	3 to 4	-2 to -6	([3])	64 to 86 (metric tons)
Cheese (0406)	43 to 101	0 to -2	0 to -1	0.8 to 1.9 (metric tons)

[1] Less than 1 percent.

[2] Korean commodity code. U.S. classification differs slightly at the 10-digit level.

[3] No change. Initial Korean production set to zero.

Wheat and flour estimates are derived from a linked model in which certain varieties of milling wheat served as an input into Korean flour production. The model considers joint liberalization of flour and wheat tariffs. The linked model requires two additional parameters, the cost share of wheat in flour production and flour production as a share of wheat consumption. These values are set to 0.81 and 1 respectively.[25]

The linked model allows multiple modeling scenarios, as one or more markets may be liberalized. The results of three separate experiments are considered here. Table D-23 reports the range of results for 1) removal of only the Korean tariff on U.S. wheat, 2) removal of only the Korean tariff on U.S. flour, and 3) joint removal of Korean tariffs facing U.S. varieties of wheat and flour. The rather small modeled changes in wheat and flour imports reflect both the large market share that U.S. producers already have, and the low existing tariffs.

[25] The 0.81 cost share is taken from the U.S. Census of Manufactures. Wheat represents 81 percent of U.S. flour producers input costs. The varieties of wheat relevant to this simulation (hard red and winter wheats) are those almost exclusively used in flour production. The modeling assumption is that all of the wheat (of these varieties) sold in the Korean market is used in flour production.

Table D-23
Likely economic effect of tariff removal on Korean wheat and flour markets under three liberalization scenarios

Modeled policy change	Commodity (HS code)	*Percent change*			Implied increase in the quantity of U.S. exports
		Korean imports from			
		United States	Rest of world	Korean production	*thousands*
Removal of tariffs on wheat only	Wheat (1001.90.9030) . . .	3 to 4	-1 to -3	([1])	27 to 36
	Flour (1101)	([2])	([2])	1	- 0.01
Removal of tariffs on flour only	Wheat (1001.90.9030) . . .	-1	-1	([1])	-7 to -12
	Flour (1101)	7 to 11	-1 to -2	-2 to -6	0.05 to 0.08
Joint removal of Korean tariffs on both wheat and flour	Wheat (1001.90.9030) . . .	2 to 3	-2 to -4	([1])	16 to 28
	Flour (1101)	7 to 10	-2 to -7	0 to -1	0.05 to 0.07

[1] No change. Initial Korean production set to zero.

[2] Small negative changes near zero.

Source: Commission calculations.