

THE ECONOMIC EFFECTS OF SIGNIFICANT U.S. IMPORT RESTRAINTS, PHASE III: SERVICES

**WITH A COMPUTABLE GENERAL
EQUILIBRIUM ANALYSIS OF
SIGNIFICANT U.S. IMPORT
RESTRAINTS**

**Report to the Committee on
Finance of the United States
Senate on Investigation
No. 332-262 Under
Section 332 of the
Tariff Act of 1930**

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PREFACE

On October 11, 1988, the United States International Trade Commission instituted investigation No. 332-262, The Economic Effects of Significant U.S. Import Restraints. The investigation, conducted under section 332(g) of the Tariff Act of 1930, is in response to a request from the Committee on Finance of the U.S. Senate (appendix A). The Committee requested that the investigation be conducted in three consecutive annual phases addressing the effects of significant U.S. import restraints on (1) imports of manufactured products, (2) imports of agricultural products and natural resources, and (3) imports of service industries. The purpose of the study is to assess the economic effects of significant U.S. import restraints on U.S. consumers, on the output and profits of U.S. firms, on the income and employment of U.S. workers, and on the net economic welfare of the United States. This report is the third of the three requested by the Finance Committee and assesses the economic effects of restraints on the imports of shipping and air transport services, banking, insurance services, broadcasting, and construction services.

Public notice of phase 3 of this investigation was given by posting a copy of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of July 5, 1990 (55 F.R. 27697-27698). See appendix B. A public hearing in connection with the investigation was held in the Commission hearing room on March 6, 1991. (See appendix C.)

The first part of the report deals with the general situation of the country, and the second part with the details of the various departments. The first part is divided into two sections, the first of which deals with the general situation of the country, and the second with the details of the various departments. The second part is divided into three sections, the first of which deals with the details of the various departments, the second with the details of the various departments, and the third with the details of the various departments.

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EXECUTIVE SUMMARY

This report is the third and final phase of a study that examines the economic effects of significant U.S. import restraints on consumers, on the output and profits of firms, on the income and employment of workers, on downstream customers of the protected industries, and on the net economic welfare of the United States.

This third phase is concerned with barriers to trade in service industries. The first phase, completed in September 1989, dealt with manufactured imports.¹ Phase 2, completed in September 1990, dealt with agricultural products and natural resources.² In addition to industry-by-industry analyses of restraints to the imports of services, this third report also contains an analysis of the combined effects of the import restraints covered in phases 1 and 2.

By their nature the products of a service industry are not generally observed when they cross a border; therefore it is difficult to impose a border restraint such as a tariff on their trade. Barriers to trade in services instead usually take the form of barriers to the mobility of the capital or labor required to produce a service, limits to foreign participation and investment in certain industries (which are essentially barriers to capital mobility), or regulatory systems that may or may not discriminate against foreign service providers but that may nonetheless be perceived as a hindrance to participation in a foreign market.

The U.S. market is generally very open to trade in services. Most U.S. regulations considered to be barriers by foreign service providers are in fact requirements that foreign firms adhere to the constraints of the domestic regulatory system, and thus should be considered as extending national treatment to foreign service providers. Under the provisions of the General Agreement on Tariffs and Trade (GATT), national treatment to foreign providers of goods would not be considered barriers to trade. Other barriers are intended to bring foreign service providers specifically into a domestic regulatory framework (such as requirements that foreign financial service providers maintain reserves within the United States). These also are essentially an extension of national treatment to foreign providers.

Five industries with barriers to trade that warrant further analysis were identified. These are transport, broadcast communications, financial services, insurance, and construction. In most cases it has not been possible to discern, much less to quantify, important effects on the U.S. economy of barriers to trade in these services. Nor do all of them have barriers which discriminate against foreign providers on the basis of nationality. These industries do share high visibility in international trade, however, and those that do not have specific barriers to foreign trade nevertheless exemplify regulatory structures that are often cited as impediments to trade.

One restraint to trade in services that is amenable to quantitative analysis, that has a clearly chilling effect on foreign participation in the U.S. market, and that has significant consequences for the U.S. economy is the prohibition against foreign participation in shipping between U.S. ports. This restriction, with related regulations, is generally known as the Jones Act.³ It requires that U.S.-flag ships be used for domestic oceanborne trade. Shipping activities covered by the Jones Act accounted for about 50 percent of the capacity of the privately owned U.S. ocean-going fleet. The bulk of protected trade is accounted for by oil tankers. Under a competitive pricing assumption, the mid-range estimate of the cost of Jones Act protection is \$5.9 billion per year. Downstream production and employment effects of Jones Act restrictions are concentrated in agriculture, forestry, and fisheries and the mining and oil sector. In agriculture, forestry, and fisheries output is reduced by \$142 million (in 1988 dollars); in mining and oil the reduction is about \$330 million. Each sector loses about 1000 full-time-equivalent jobs due to the restrictions.

¹ U.S. International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Phase I: Manufacturing*, USITC Publication 2222, October 1989.

² U.S. International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Phase II: Agricultural Products and Natural Resources*, USITC Publication 2314, September 1990.

³ The Merchant Marine Act of 1920.

The airline industry is governed by a complex system of bilateral agreements that cover the assignment of international routes and effectively bar foreign firms from participation in the domestic air transport market. While a quantitative assessment of this barrier cannot be made, the major effect of its removal would probably be to increase competition in international routes by enabling foreign providers to link their overseas flights more effectively to their feeder or ongoing flights in the United States.

Providers of financial services and insurance face barriers that consist primarily of the requirement to abide by regulations imposed by the various State regulatory bodies. These barriers are not imposed at a national level, they enable the extension of national treatment to foreign providers, and they do not appear to impose significant costs on the U.S. economy.⁴

Foreign (specifically Japanese) providers of construction services have faced a barrier enacted by Congress in the form of the Brooks-Murkowski Amendment to the Continuing Resolution for Fiscal Year 1988, reenacted for FY 1991 as an amendment to the Airport and Airways Improvement Act. Although imposed through Congressional action as a barrier to trade (specifically to induce reciprocity), there is little evidence that it has been a significant barrier to foreign providers of construction services (since it affects only Japanese firms, and bars them only from Federally funded construction) or that it has had discernible effects on the U.S. economy.

Foreign firms or citizens are barred from owning a controlling interest in U.S. television and radio broadcast facilities.⁵ Again, this is a federal barrier, but it does not appear to have significant effects on the U.S. economy. Nor does it totally bar foreign investment, although it does limit foreign control of domestic firms.

Following the above analyses of service industries, part II of the report presents an analysis of the simultaneous effects of U.S. import restraints in manufactured and agricultural goods, using a computable general equilibrium model of the U.S. economy. Such a model accounts for the relevant links between the protected sectors and the rest of the economy, and makes possible the examination of the effects of the import restraints as a complete set, considering their combined effects on the economy.

This analysis yields the following estimates. Removal of import barriers on manufactured and agricultural goods would increase U.S. welfare by an amount equivalent to an increase in GNP of about \$9.5 billion (in 1988 dollars), or two-tenths of 1 percent of the 1988 level. Imports of apparel would increase by \$6.6 billion 1988 dollars, followed by footwear (\$582 million), sugar (\$479 million), and textiles (\$427 million). Imports of durable and nondurable manufactured goods would decline by \$368 million and \$132 million, respectively, while exports in these sectors increase by \$626 million and \$133 million. Labor force adjustments include the displacement of 34,000 jobs in apparel and 8,000 in textiles, and gains of nearly 30,000 jobs in services and 20,000 jobs in durable goods manufacturing.

⁴In spite of the absence of national barriers to trade in such services, the U.S. domestic regulatory system operating chiefly at the State level is often perceived as a barrier to trade. See EC Commission, *Report on United States Trade Barriers and Unfair Trade Practices 1990*, pp. 54-57. Also note that the foreign accounting industry is also concerned about barriers that are essentially similar, as evidenced by the appearance of representatives of foreign accounting bodies at the USITC hearing for this report (appendix C).

⁵Section 310 of the Communications Act of 1934, 47 U.S.C. 310.

PART ONE
THE SERVICE INDUSTRIES



CHAPTER 1 INTRODUCTION

This study was requested in a letter from the Senate Finance Committee dated September 9, 1988. That letter specifically called for an analysis of "significant restraints on U.S. imports, . . . whether they result from an Act of Congress, an action taken under the fair trade laws of the United States, such as section 201 investigations, or an international agreement." There are in fact few restrictions on services that meet these criteria—the U.S. economy is largely open to service imports. The choice of specific services and barriers for analysis is intended to be more inclusive than exclusive. Although certain categories of restrictions are excluded, among the barriers analyzed are some that would probably not be regarded as significant in a quantitative sense, as well as measures that were not established with the intent of restricting international trade. Consultation with practitioners and industry specialists at the International Trade Commission and at other agencies, as well as the examination of documentation from international agencies, has permitted the construction of an extensive list of practices that might be considered to be restraints to trade in services. A careful process of elimination has reduced this list to five industries with barriers that merit consideration for analysis on various grounds. These are (1) the transport industry, with barriers to foreign participation in shipping (governed chiefly by the Jones Act) and air transportation (governed by a variety of bilateral agreements), (2) the broadcast industry, in which foreigners are restricted to minority ownership of broadcast facilities, (3) the banking and financial services sector, in which foreign participation in banking, and securities markets is regulated, (4) the insurance industry, which is similarly regulated, and (5) the construction industry, with a legislated impediment to foreign participation in one particular segment (the Brooks-Murkowski Amendment prohibits Japanese participation in projects funded by the Federal Government). Again, not all of these barriers could be considered significant, either as impediments to foreign participation in United States markets or in terms of the costs they impose on the U.S. economy.

Barriers in the transport industry will be analyzed at some length, while those in the broadcast, financial, insurance, and construction industries will be discussed in less detail.

The Service Sector

Service industries account for a dominant portion of many national economies; on average, according to a study published by the staff of the General Agreement on Tariffs and Trade (GATT)¹, 63 percent

¹ GATT Secretariat, *International Trade 1988-1989*, vol. 1 (1989), p. 23.

of the GDP of the developed countries was accounted for by service industries in 1987. Services are also a large but imperfectly measured fraction of the value of international trade. The GATT estimates that in 1987 services accounted for 19 percent of all trade. In spite of this, quantitative studies of trade in services suffer from a lack of consistent data stemming from the very nature of services and the difficulty of measuring trade flows. In addition, there is evidence that existing official trade data understate actual trade in nonfactor services (services that are not used to produce goods or other services) by 100 percent or more.² Even in international trade theory textbooks, "the service sector" has often been synonymous with "the untraded sector," by definition absent from international trade. Services are of course exchanged internationally, but in ways that demand different analytical treatment from tangible goods.

Production or provision of services requires an interaction, however remote or brief, between the provider and consumer. Airline travel has not been sold, or at least not delivered, until the consumer sits on an airplane belonging to the provider. The sale of construction services (as opposed to the sale of a completed construction project) requires some combination of the producer's labor, knowledge, tools, and other goods with the consumer's land and other materials.³

The necessity of some such interaction will almost always render international trade in services invisible at the border. Some factors or components of the service transaction will cross the border in either of the two directions, but the service itself will be produced, consumed, and traded in the interior of either the importing or exporting country. The value of the internationally traded component of the services transaction will often be in question, resulting in the relative scarcity and unreliability of international services trade statistics. More importantly, any barrier to this trade will be either an indirect barrier to the international passage of one or more components of the service, or an internal barrier to local production or sale of services by foreign nationals. A direct tariff on services applied at the border will not exist; all of the barriers investigated here are nontariff barriers.

² For example, see table 4 and the accompanying discussion in Office of Technology Assessment (OTA), *Trade in Services: Exports and Foreign Revenues*, September 1986.

³ For a further discussion of the mechanisms and determinants of trade in services, see Alan V. Deardorff, "Comparative Advantage and International Trade and Investment in Services," in Robert Stern (ed.), *Trade and Investment in Services: Canada/U.S. Perspectives*, Toronto: Ontario Economic Council, 1985; and Joseph F. Francois, "Trade in Nontradeables: Proximity Requirements and the Pattern of Trade in Services," *Journal of International Economic Integration*, vol. 5, no. 1 (Spring 1990), pp. 31-46.

Import Restraints

Many of the practices often identified as barriers to trade in services are in fact barriers to foreign investment and labor force migration. They include the prohibition of foreign ownership of broadcast facilities and ships operated between U.S. ports, which will be discussed in this report. They also include restrictions on immigration for labor and the prohibition of foreign crews on vessels operated between domestic ports. The regulation of immigration is generally held to be closely and vitally related to national sovereignty and is considered to be beyond the scope and authority of trade negotiation and trade law. We will therefore not analyze it here as a barrier to trade in services.

Other barriers restrict the provision of services within the United States. Many such barriers to trade that are sometimes cited by foreign exporters are in fact requirements that foreign firms adhere to domestic regulations in ways equivalent to domestic firms. An

example is the requirement that insurance companies and banks be registered in each State in which they do business. Other barriers are ways that permit regulatory oversight of foreign firms equivalent to that afforded to domestic firms. An example is the requirement that foreign banks or other financial service providers maintain reserves in this country, in U.S. funds or U.S.-issued or denominated securities. For the purposes of this report such restrictions will be considered to be the extension of national treatment to foreign firms, part of the cost of doing business in the United States. Further, because these barriers are generally equivalent to costs born by the domestic industry, such barriers have been found by many analysts not to have a significant inhibiting effect on foreign industries. Nor do they seem to impose significant added costs to end users. This study will cover regulatory barriers to trade in financial services and insurance, but similar barriers in other industries will not be analyzed as import restraints.

CHAPTER 2 TRANSPORT

Introduction

The transportation sector includes air, maritime, and land transport services. The analysis will focus solely on air and maritime transport services, and will consider only the primary restraints that affect the transport of cargo and air passengers within the U.S. domestic market by foreign carriers. Other U.S. restraints, such as those that affect the ownership of U.S. vessels, the maritime transport of passengers in the U.S. domestic market, or the transport of U.S. cargo and passengers between the United States and other countries, will be described briefly but generally will not be analyzed for their effect on trade in transport services.

The first part of this chapter will provide a discussion of air transport services. This discussion includes a brief overview of international air services with emphasis on the institutional regime governing air services, an enumeration of the U.S. restraints in international air services, and a discussion of the potential impact of removing U.S. restraints. The second part of the chapter provides a discussion of maritime transport services, which includes an enumeration of U.S. restraints to foreign providers of maritime transport services, a description of Jones Act¹ trade, and an assessment of the economic effects of the Jones Act.

Air Transport²

The international air transport industry today could be described as an industry consisting of a series of local monopolies connected by a set of protected international routes. Many markets are controlled by cartels that are often organized and even subsidized by governments. Some analysts contend that the global market structure is likely to change dramatically by the end of the century, with the world's air services being provided by several large multinational airlines competing on a global scale. Major changes in the world's air transport sector are likely to be inspired or induced by the deregulation of the U.S. domestic air services market and the U.S. policy of competitive international aviation.

¹ Senator Wesley L. Jones of Wisconsin was the author of the *Merchant Marine Act of 1920*. In this paper, we will refer to sec. 27 of the act as the "Jones Act;" however, within the legal profession, the term generally refers to sec. 33 of the act which stipulates the recovery rights of merchant seamen for personal injury or death during employment. See Clinton H. Whitehurst, Jr., *American Domestic Shipping in American Ships: Jones Act Costs, Benefits, and Options* (Washington, DC: American Enterprise Institute, 1985), p. 3, and Ivor Morgan, *The Impact of the Jones Act on Selected United States Industries* (Harvard University, D.B.A. dissertation, 1980), p. 1-1 for further discussion.

² Much of the institutional background for the air transport sector is drawn from Daniel Kasper, *Deregulation and Globalization: Liberalizing International Trade in Air Services* (Cambridge, MA: Ballinger Publishing Co., 1988).

Overview of International Air Services

While the United States has promoted a competitive aviation sector since deregulating its domestic airline industry in 1978, international air services are routinely subjected to significant government regulation. For example, prices for international air services are subject to government disapproval. Trade barriers in air services can be grouped into the following four categories: (1) bilateral agreements that regulate entry or directly restrict the competitiveness of foreign airlines; (2) domestic regulatory systems that effectively restrict the entry of foreign carriers; (3) restrictions on ancillary domestic markets that impair a foreign carrier's ability to compete; and (4) subsidization and state ownership of airlines.

Bilateral agreements are required for airlines to obtain the right to carry traffic to and from a nation's territory. The agreements for routes involving the United States are generally negotiated between the U.S. Department of Transportation and the corresponding foreign transport ministry, and they govern entry, capacity, traffic, fares, and routes. Current regulatory policies in many countries exclude foreign airlines from serving routes that both originate and end in that country or otherwise restrict a foreign carrier's ability to compete in those markets. Restrictions in related markets also impair the competitiveness of international air services. For example, government-owned or sanctioned monopolies of airport facilities and computer reservation systems have led to serious disputes between countries.

Institutional Regime Governing Air Services

International air services are regulated by a diverse set of multilateral and bilateral arrangements between governments and airlines. These arrangements were developed in the late 1940s, following the failure of nations to agree on a more comprehensive, multilateral system. Multilateral agreements among governments generally cover international legal matters such as overflight rights, nationality of aircraft, and minimum safety, maintenance and training standards. Bilateral agreements deal principally with the exchange of economic rights. They also cover technical safety and security issues as well as ancillary rights based on the economic rights granted in the agreement. Issues covered in these agreements include currency conversion, profit repatriation, and mutual recognition of licenses.

The Chicago Conference

In 1944 the Chicago Conference on International Civil Aviation was convened to develop a framework to keep the newly emerging air services industry from becoming mired in mercantilistic national policies. The Conference developed several agreements for ratification, including the Chicago Convention on International Aviation.

One product of the Conference was the International Civil Aviation Organization (ICAO),

which established legal principles such as a nation's sovereignty over its airspace and the rules governing the nationality of aircraft. The Conference also produced the International Air Services Transit Agreement. This agreement permits airlines of signatory countries to transit the airspace of other signatories and to make technical-nontraffic stops in signatory states. This agreement has been ratified by over 100 nations.

Finally, the Chicago Conference negotiated an agreement on the liberal exchange of route rights on a multilateral basis. This agreement, the International Air Transport Agreement (commonly referred to as the Five Freedoms Agreement), was believed to be the cornerstone of a new, multilateral regime for the governance of air services. However, opposition to this agreement was widespread, shared by virtually every country with a significant amount of air traffic. Opponents feared that airlines from the United States would dominate world markets in a liberal air services system. Although the United States originally pressed for ratification, strong opposition by Pan American Airways led to the withdrawal of U.S. support and the agreement was never ratified.

The International Civil Aviation Organization

Since the Chicago Conference, the ICAO has worked with national regulatory authorities to develop safety standards and other technical matters. The ICAO also helps developing countries bring their aviation sectors up to world standards. During the 1970s the ICAO became increasingly politicized and began to play a more active role in the economic aspects of civil air services, with a protectionist bent. This led the United States to consider withdrawing from the organization. The ICAO has become a forum for opponents of U.S. competitive international policies.

The International Air Transport Association

The failure of nations to ratify the International Air Transport Agreement left international aviation without a general set of rules governing airline operations. The International Air Transport Association (IATA), organized by the airline industry, soon filled the void. IATA became an overseas representative to the growing number of world airlines and a partial substitute for government restrictions on international airline operations. Through its activities, IATA has become (1) a forum for international pricing agreements; (2) an international airline trade association; and (3) a surrogate for a multilateral government agreement. The IATA has established agreements on pricing, on interairline connections, on procedures for interline clearing of ticket revenue, and on airports, maintenance, training, and safety.

For 30 years the United States routinely approved the jointly agreed-upon airline fares submitted by IATA carriers. At the same time that the United States

deregulated its domestic market it reviewed IATA's price setting and other activities. Not surprisingly, since the fare structure that evolved under this system was high enough to protect less efficient airlines, there were few low fares. However, competition from charter carriers and non-IATA carriers (such as Icelandic) prompted airlines to introduce discount fares. This development led to the dilution of IATA's rate-making ability on North Atlantic routes.

Bilateral Air Service Agreements

Bilateral agreements govern both access to and competition in international aviation. These agreements define the exchange of economic rights as well as other important ancillary rights in commercial operations and administrative procedures.

The economic rights agreed to in bilateral air service agreements can be grouped into four categories: (1) entry and designation, (2) capacity, (3) route and traffic rights, and (4) pricing. In the provision of air services, the market is controlled by governments through their control of these economic rights granted to carriers.

Airlines are not free to enter international markets on their own. An airline must be designated by its government to provide service on an international route, or acquire this right from another airline so designated. A government's right to designate an airline stems from an agreement with the country at the other end of the route. Bilateral agreements determine how many carriers will be permitted to serve a route, with some agreements allowing a single carrier and others imposing no limits on the number. Most nations have, until recently, designated one carrier per party. However, nearly all U.S. agreements allow for some form of multiple designation.

Bilateral agreements also limit the number of seats (capacity) that a carrier may provide on an international route. Carrier capacity is typically established between governments and airlines, a practice known as predetermination. By limiting and dividing the available capacity on a route between each nation's airlines, competition can be severely hampered. Most agreements entered into by the United States permit the carriers to determine their own capacity subject to review at the option of either government.

Traffic rights establish the type of traffic that designated airlines are allowed to carry over a particular route. These include the rights for a given airline to carry traffic that originates in or is destined for a third country, not party to the particular agreement.

A variety of provisions govern the pricing of international air services in bilateral agreements. These provisions typically determine whether an airline's fare proposals must be approved by both governments or only one.

Bilateral agreements also cover important ancillary rights important to providing international air service.

These agreements contain provisions for items such as currency conversions, profit repatriation, access to local travel agents and their computerized reservation systems, ground handling, and airport user charges. Other provisions that might also be included are the mutual recognition of licenses, aviation safety and security, operating permits, compliance with local laws, and customs duties. Sometimes these agreements cover issues involving government-owned monopolies, domestic regulatory policies, and domestic market structure.

U.S. Restraints in International Air Services

Investment, Ownership, and Control

For U.S. airlines operating domestically and U.S.-flag carriers operating internationally, a minimum level of ownership and control by U.S. citizens is required by U.S. law.³ Air carriers are deemed to be foreign air carriers unless they are owned by U.S. citizens. A U.S. citizen is defined as an individual who is a citizen of the United States or a U.S. possession, a partnership consisting of U.S. citizens, or a U.S. corporation in which the president and two-thirds or more of the board of directors are U.S. citizens and in which at least 75 percent of the voting interest is controlled by U.S. citizens.⁴

Cabotage

Foreign air carriers are denied the right to operate between cities within the United States except when incidental to international travel.⁵ A foreign air carrier (or air charter carrier) will be allowed to transport freight from an internal point to a point served by the carrier only where a reciprocal right is extended to U.S. carriers in the respective foreign country.⁶

Fly American

In international travel, all U.S. Government employees on official business are required to use U.S.-flag carriers to the extent such service is available. Also, all U.S. Government property is required to be transported by U.S.-flag carriers.⁷ In the case of surplus food, military cargoes, and Export-Import Bank cargoes, 50 percent of the cargo is reserved for

³ Sec. 1301(3) of the Federal Aviation Act of 1958, 49 U.S.C. 1301(3).

⁴ Secs. 1301(3), 1301(16), and 1371(a) of the Federal Aviation Act of 1958, 49 U.S.C. The Secretary of Transportation has proposed relaxing these restrictions to allow foreign ownership of up to 49 percent of voting stock. See "America's Airlines: The New Eagles," *The Economist*, vol. 320, no. 7716 (July 20, 1991), pp. 80-82.

⁵ Secs. 402 and 1108 of the Federal Aviation Act of 1958, 49 U.S.C. 1372(a), 1508(b).

⁶ Secs. 7-9 of the International Air Transportation Competition Act of 1979, 49 U.S.C. 1372 (f)(2).

⁷ Title XI, sec. 1117 of the Federal Aviation Act of 1958, as amended 49 U.S.C. 1517.

U.S.-flag carriers.⁸ The Secretary of Commerce is also directed to encourage, to the maximum extent feasible, foreign tourists travelling to and from the United States to use U.S.-flag carriers.⁹

The Potential Impact of Removing U.S. Restraints in Air Transport

The right to enter the domestic U.S. air transport market might enable foreign carriers to attain greater economies of scale and scope to operate more efficiently in the world air transport markets. Access to local domestic traffic has become increasingly important to support viable service in international markets. On long-haul international routes, the difference between success and failure can be determined by the level of support and connections to domestic flights serving a carrier's international gateway. Foreign carriers serving the U.S. market are dependent upon U.S.-flag carriers to serve traffic behind their gateways. This section discusses the potential impact of removing the restraints on foreign carriers in the U.S. air transport market.

The unusually decentralized system of bilateral agreements covering international air services makes quantitative estimation of this impact virtually impossible. Unlike a regime of tariffs or quotas, the existing international air transport regime cannot be fit neatly into standard economic models. However, on a qualitative level, permitting free entry of foreign carriers into the U.S. domestic air transport market would likely, over the long term, strengthen their international position and result in a more competitive international air transport market, potentially raising the volume of traffic and lowering fares.

The impact on the U.S. domestic air transport market is likely to be minimal, since a high level of competition among U.S. carriers already prevails in this market. There is a very large pool of potential domestic entrants, such that the attraction of excess economic profits presumably has already resulted in enough competition to drive excess profits down to zero or near zero. The addition of foreign firms to the pool of potential entrants should have little effect on the structure of the industry as long as they are unsubsidized by their governments.

Instead, the greatest impact is likely to be in the market for international flights with U.S. endpoints. Currently, foreign carriers do compete with U.S. carriers for this market, but they are somewhat handicapped by the bilateral agreements regime. For one thing, a foreign carrier can fly into or out of only a few U.S. gateway cities, as designated by its particular bilateral agreement. Moreover, since it is not allowed to fly from one U.S. city to another, it must

⁸ Sec. 108 of the Agricultural Trade Development and Assistance Act of 1954, 7 U.S.C. 1708 Sec. 101 of the Cargo Preference Act of 1958, 46 U.S.C. 1241(b).

⁹ International Travel Act of 1961, as amended by the International Air Transportation Fair Competition Practices Act of 1974, 22 U.S.C. 2123((a)12).

rely on U.S. carriers for connecting flights from gateway to beyond-gateway cities. Although access to these connecting flights is by no means the only determinant of a carrier's competitive position, the restrictions on foreign carriers have become increasingly binding since deregulation in 1978, which allowed U.S. carriers to fly between any U.S. cities without restriction. Exploiting this new freedom, U.S. carriers developed large "hub-spoke" networks, thereby allowing them to enjoy greater economies of scope by serving more cities. As a result, "on-line" service, in which a passenger flies without switching carriers, has become increasingly prevalent (see table I-2-1). Consequently, the alternative practice of "interlining" has declined, limiting the availability of connecting flights from gateway to nongateway cities.

The increased prevalence of online service, together with the recent wave of mergers and the

relaxation of practices restricting some U.S. carriers to domestic operations only, has greatly strengthened U.S. carriers relative to foreign carriers. In fact, some experts warn of a "large-scale invasion of international markets by the largest and strongest U.S. airlines."¹⁰ Some gains to U.S. carriers from their improved international position seem to have materialized, at least in the trans-Atlantic market. The market share for U.S. carriers of passenger traffic between the United States and the rest of the world has held steady at about 50 percent since 1975. On the other hand, in the United States-European air market, by far the largest international passenger market, the market share for U.S. carriers has fluctuated but has generally grown since 1978, peaking at 49.2 percent in 1988 and never falling below 40 percent (see table I-2-2).

¹⁰ Kasper, p.87.

Table I-2-1
Interlining on U.S. domestic flights, 1973-84

(In percent)

Year	On-line	Interline
1973	77.1	22.9
1974	76.7	23.2
1975	76.4	23.6
1976	76.0	24.0
1977	75.4	24.6
1978	76.8	23.2
1979	78.9	21.1
1980	81.9	18.1
1981	84.6	15.4
1982	87.1	12.9
1983	89.1	10.9
1984	89.6	10.4

Source: U.S. Department of Transportation, *Interline Practices in the Airline Industry*, Washington, D.C.: U.S. Government Printing Office, 1986.

Table I-2-2
U.S. market share of passenger traffic on routes between the United States and Europe and the United States and all countries, 1975-90

(In percent)

Year	Europe	All countries
1975	44.0	50.3
1976	45.4	50.3
1977	45.4	50.4
1978	43.9	50.0
1979	44.2	50.8
1980	42.1	49.1
1981	40.1	48.6
1982	44.9	49.7
1983	46.5	50.8
1984	47.2	49.4
1985	47.2	48.2
1986	43.1	47.1
1987	46.6	49.1
1988	49.2	51.8
1989	46.9	51.1
1990 ¹	46.4	52.5

¹ Estimated.

Source: U.S. Department of Transportation.

Clearly, eliminating the bilateral agreements regime and allowing foreign carriers the same freedoms with regard to U.S. domestic routes as U.S. carriers currently enjoy would improve the competitive position of foreign carriers on international routes somewhat. It would allow them to offer many more U.S.-based flights, from more gateways and serving more non-gateway cities. The question is how much of an improvement that would be. At first glance, the answer appears to be "not much," since the increasing importance of connecting flights to nongateway cities would act to limit any benefits to foreign carriers. However, there may be an acceleration of mergers or partnerships between domestic and foreign carriers.

The added competition from foreign carriers, holding other factors constant, should exert downward pressure on the prices of U.S.-based international flights. As the market for international flights becomes more competitive and fares fall, there will be an increase in the quantity of international flights demanded, possibly creating a further strain on airport capacity unless existing capacity is expanded to accommodate this extra volume or airport slots are rationed. Capacity strain, as revealed by flight delays, has been a growing problem over the past 15 years. For example, at 25 of the largest airports the average delay of each operation rose 27.3 percent between 1976 and 1984.¹¹ In 1988, all of the 10 largest airports, and all but 2 of the top 20, exceeded 20,000 hours of flight delays. Half of the top 10 airports experienced delays of 15 minutes or more on more than 6 percent of their operations. The Federal Aviation Administration (FAA) expects that delays will worsen significantly by 1998 in the absence of capacity improvements, but notes that 66 of the top 100 airports have plans or projects underway to expand capacity by building new runways or extending old ones.¹² Other ways of improving overall capacity might include building more airports and diversion of air traffic from crowded airports to less crowded airports in the same vicinity, if sites can be found. Upgrading navigation and traffic control systems also offers a hope for additional capacity.

Although flight delays and capacity utilization are highly correlated, the severity of the physical barrier to entry posed by capacity limitations is unclear. A 1988 communique from the United States Trade Representative echoes the FAA concerns, stating that new entry might necessarily be restricted by infrastructure limitations such as the number of airport slots and the capacity of air traffic control.¹³ On the

other hand, airport access restrictions do not currently present a major obstacle to airline entry in the United States. They may in the future, given the general public's aversion to additional aircraft noise, which could impede efforts to build more airports or expand capacity at existing airports.¹⁴

Whatever the ultimate impact of foreign entry into the U.S. domestic air transport market, no major changes would likely occur immediately, even in the market for international flights. In fact, it would probably take several years for foreign carriers to establish extensive U.S. operations with all the necessary ancillary services. Consequently, replacing the current bilateral agreements regime with a regime of open skies in the U.S. domestic air transport market would have little effect in the short term. In the long term, the likely effect would be downward pressure on domestic and international flight prices.

Maritime Transport

U.S. Restraints in Maritime Transport

The United States protects U.S. vessels from import competition in the U.S. domestic market mainly through the Jones Act¹⁵ and in foreign trade mainly through a collection of preference cargo requirements. In addition, there are numerous other restrictions that apply to (1) the foreign ownership of U.S. registered ships; (2) the citizenship of U.S. crews on U.S.-flag ships; and (3) dredging, towing, or salvaging operations in the United States by foreign vessels. This analysis provides a quantitative assessment of the economic costs of Jones Act restrictions on domestic shipping. Before making that assessment, it will consider the ownership, crewing, and operating prohibitions, and the preference cargo requirements.

Ownership, Crewing, and Operating Prohibitions

To register as a U.S.-flag vessel, a ship must be wholly owned by U.S. citizens or by firms organized in the United States whose principal officers, such as the chief executive officer and the chairman of the board of directors, are U.S. citizens. The board of directors of these firms must be composed predominantly of U.S. citizens.¹⁶ In addition, the sale, mortgage, lease, charter, or delivery, in part or whole, of a U.S.-flag vessel as well as U.S. shipbuilding facilities to non-U.S. citizens requires the prior approval of the U.S. Government.¹⁷

The Merchant Seaman Act requires that all licensed officers and pilots and 75 percent of the

¹¹ Federal Aviation Administration (FAA), *1986 Capacity Plan*, Washington, DC: FAA, 1986.

¹² FAA, *1990-91 Aviation System Capacity Plan*, Washington, DC: FAA, 1990.

¹³ "Implications for Application of Concepts, Principles and Rules for the Transportation Sector," communique from U.S. Government to GATT Group of Negotiators on Services, July 17, 1989.

¹⁴ Kasper, p.68.

¹⁵ Secs. 7 and 27 of the Merchant Marine Act of 1920, 46 U.S.C. 883.

¹⁶ Secs. 2 and 9 of the Shipping Act of 1916 as amended, 46 U.S.C. 802, 808.

¹⁷ Sec. 808 of the Shipping Act of 1916, 46 U.S.C. 808 and sec. 961 (a) of the Shipping Mortgage Act, 46 U.S.C. 961 (a).

remaining crew on U.S.-flag vessels be U.S. citizens.¹⁸ In addition, the Shipping Act, 1916 places additional U.S.-citizenship requirements on crews of U.S. vessels engaged in certain maritime activities in the United States.¹⁹

Certain types of the operations by foreign-built or foreign-flag vessels are restricted in U.S. waters. Foreign-built vessels are prohibited from entering into dredging operations in the United States unless they are registered as U.S. vessels and their crews conform with U.S. citizenship requirements.²⁰ In addition, foreign-built vessels are prohibited, except in emergencies, from towing U.S. vessels in U.S. waters.²¹ Finally, foreign vessels are restricted from coastal or inland water salvage operations except when suitable U.S. vessels are not available.²²

Preference Cargo Requirements²³

Under a number of U.S. statutes, certain types of U.S. imports and exports must be transported by U.S.-flag vessels. The types of cargo that are affected by these "preference cargo" provisions are (1) 50 percent of cargoes originated by the U.S. Government such as exports generated by U.S. foreign-aid programs, foreign military sales, and imports for the Strategic Petroleum Reserve;²⁴ (2) at least 50 percent of all cargoes generated by the U.S. Export-Import Bank;²⁵ (3) 75 percent of all exports of surplus agricultural products, i.e., "P.L. 480 shipments;"²⁶ (4) all cargo shipped for use by the U.S. armed forces;²⁷

¹⁸ Sec. 672 of the Merchant Seaman Act, 46 U.S.C. 672.

¹⁹ Sec. 2 of the Shipping Act, 1916; 46 U.S.C. 802.

²⁰ Sec. 1 of the Enrollment of Vessels Act, 46 U.S.C. 292, 46 U.S.C. 292; and sec. 2 of the Shipping Act of 1916, 46 U.S.C. 802.

²¹ Sec. 4 of the Enrollment of Vessels Act, 46 U.S.C. 316 (d).

²² 46 U.S.C. 316 (d).

²³ In addition to the preference-cargo requirements, separate pooling agreements among the United States, Argentina, and Brazil reserve 40 percent of these countries oceanborne bilateral trade for U.S.-flag ships. See Lawrence J. White, *International Trade in Ocean Shipping Services: The United States and the World*. (Cambridge, MA: An American Enterprise Institute/Ballinger Publication, 1988), p. 33 for further discussion.

²⁴ The Cargo Preference Act of 1954 (P.L. 664). See White, *International Trade*, p. 32, for further discussion.

²⁵ Public Res. 17 and sec. 901 of the Merchant Marine Act of 1936, 46 U.S.C. 1241 (b).

²⁶ The Cargo Preference Act of 1954 and sec. 108 of the Agricultural Assistance Adjustment Act, 7 U.S.C. 1708. See also White, *International Trade*, p. 32, for further discussion.

²⁷ The Military Transportation Act of 1904 and the Cargo Preference Act of 1954. See White, *International Trade*, p. 32, for further discussion of both acts. If U.S.-flag vessels are not available, foreign vessels may be used. During 1990 and 1991, the U.S. military transported millions of tons of cargo and thousands of troops to the Persian Gulf during a 5-month period. Forty-seven percent of the maritime transport used during this operation was provided by foreign ships. The U.S. Transportation

(5) and 25 percent of agricultural commodities and products shipped under various specified food or agricultural assistance programs.²⁸ In addition, U.S. Government personnel and their personal effects transported by ship must use U.S. vessels if available.²⁹

Preference cargoes account for only a small portion of total commercial oceanborne cargo in U.S. foreign trade; in fact, U.S.-flag ships transported only 5.8 percent of total U.S. oceanborne foreign trade in 1983.³⁰ However, of that 5.8 percent of trade carried by U.S.-flag vessels, 40 percent was carried under preference cargo requirements.³¹

The Jones Act³²

The United States has protected the U.S. maritime transport sector in domestic trade since the late eighteenth century. Originally, the participation of foreign ships in the U.S. domestic shipping market was strictly limited. This was initially accomplished through discriminatory tariffs and port tonnage taxes on foreign-flag ships. Except for a brief period during World War I when foreign-flag vessels were exempt from cabotage prohibitions, legislation³³ effectively excluded foreign vessels from transporting cargo between U.S. ports from the early 1800s to the early 1900s.³⁴

The current cabotage prohibition on foreign vessels is covered in section 27 of the Merchant Marine Act of 1920. It states that no merchandise transported by water between U.S. ports is to be carried "in any other vessel than a vessel built in and documented under the laws of the United States and owned by persons who are citizens of the United States." Therefore, the act effectively reserves U.S. maritime cabotage for ships

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Command estimated that, without the foreign ships, the sealift would have taken an additional 3 months. See George C. Wilson, "Operation Highlights Weaknesses of U.S. Forces," *The Washington Post*, February 10, 1991, p. A23.

²⁸ Sec. 901b of the Merchant Marine Act, 1936, 46 U.S.C. app. 1241, as amended by the Food Security Act of 1985 (Public Law 99-198).

²⁹ Sec. 901 of the Merchant Marine Act, 1936, 46 U.S.C. 1241 (a).

³⁰ White, *International Trade*, p. 20.

³¹ White, *International Trade*, p. 32.

³² In addition to the Jones Act, there are two other statutes that reserve transport of certain types of U.S. domestic cargo to U.S.-flag vessels. The Export Administration Act, 50 U.S.C., app., 2406(d), prohibits the export of Alaskan oil and, in effect, reserves this cargo for U.S.-flag vessels. In addition, sec. 4 of the Outercontinental Shelf Lands Act of Aug. 7, 1953, 43 U.S.C. 1333 and 1346 reserves the supply of offshore drill rigs and other exploration activities to U.S.-flag vessels.

³³ The Cabotage Law of 1817. See U.S. Congress, Office of Technology Assessment, *An Assessment of Maritime Trade and Technology*, Washington, DC, October 1983; and Morgan, *The Impact of the Jones Act*, for further discussion.

³⁴ See Whitehurst, *American Domestic Shipping* p. 3, for further discussion.

that are registered and built in the United States, and that are owned and crewed, predominantly, by U.S. citizens.³⁵ Generally, ships operating in trades that are protected by the Jones Act are prohibited from receiving the operating and construction subsidies that are made to U.S.-flag ships.

Numerous exemptions to the Jones Act exist. In terms of the volume of cargo affected, the largest general exemption applies to merchandise that is transported between the U.S. Virgin Islands and other U.S. ports. This cargo may be carried by foreign-flag carriers. Another general exemption applies to foreign-built U.S.-flag ships. These foreign-built vessels are allowed to carry cargo between Guam, other U.S. Pacific possessions, and U.S. ports.³⁶

In addition, under a wide variety of circumstances, individual waivers to the act are also granted to foreign and U.S. vessels that are not protected by the act. Usually, these waivers are difficult to obtain and are granted only in cases where Jones Act ships are not available to transport cargo. A catalog of individual waivers would include occasional waivers that temporarily allow foreign-flag ships to sail domestic routes or to register and operate as U.S.-flag ships protected by the Jones Act. Also, individual waivers are granted occasionally to (1) U.S.-built ships operating in foreign trade that receive construction differential subsidies (CDS) and to (2) U.S. liners operating in foreign trade that receive operating differential subsidies (ODS). Ships that receive CDS can be waived from the restrictions of the Merchant Marine Act of 1936 to carry cargo in the U.S. domestic market while liners that receive ODS can be allowed to transport U.S. domestic cargo to ports in Hawaii, Guam, and Puerto Rico under certain circumstances. In both cases, the foreign-trade subsidies must be repaid to the U.S. Treasury to be eligible for the waivers.³⁷

A commonly cited justification of the Jones Act for protecting the U.S. shipping and shipbuilding industries is the need to preserve a national shipping industry on national security grounds.³⁸ During past military conflicts, U.S. merchant shipping has played a major role in the transportation of U.S. military supplies and personnel. Generally, the necessity of maintaining some minimum U.S. shipbuilding and shipping capability for defense purposes is not contested. An important question, which has received considerable attention and debate, is whether the Jones Act is the most efficient method of maintaining this minimum capability.³⁹ Economic theory suggests that a more efficient alternative to the act would be a subsidy

³⁵ See also White, *International Trade*, and Morgan, *The Impact of the Jones Act*, for further discussion of the Jones Act.

³⁶ See White, *International Trade*, and Whitehurst, *American Domestic Shipping*, for further discussion.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ See White, *International Trade*, Whitehurst, *American Domestic Shipping*, and Jagdish N. Bhagwati, "The Generalized Theory of Distortions and Welfare," in J. Bhagwati, et. al., eds., *Trade, Balance of Payments, and Growth*, Amsterdam: North Holland, 1971, pp. 69-90, for further discussion on the efficacy of alternate trade policies.

to the U.S. domestic industry. Even though the subsidy would still impose inefficiency costs on the economy, it would do so with less market distortion effects than the act.

Jones Act Trade

Shipping between U.S. ports, which is reserved for U.S.-flag ships under the Jones Act, accounts for a significant share of the cargo transported by U.S.-flag vessels. In 1989, for example, the vessels protected by the Jones Act accounted for approximately 50 percent of the capacity of the privately owned active U.S.-flag oceangoing fleet. This amounted to 158 vessels with 9.0 million tons of carrying capacity, most of which were tankers.⁴⁰ (See table I-2-3.) The predominance of cabotage trade for the U.S. shipping industry is reflected by the volume of domestic, oceanborne cargo that was transported by U.S.-flag vessels in 1988: 325 million short tons. (See table I-2-4.) In contrast, the total volume of U.S. commercial oceanborne foreign trade transported by U.S.-flag vessels equaled 30.8 million long tons⁴¹ in 1988. In terms of total U.S. oceanborne foreign trade, U.S.-flag vessels accounted for only 3.9 percent of the total tonnage transported.⁴²

Oceanborne cargo generally falls into three broad categories: liquid-bulk, dry-bulk, and general cargo. Liquid-bulk cargos consist mostly of petroleum and petroleum products. Dry-bulk cargos are comprised mainly of commodities such as coal, grains, and mineral ores, while general cargos usually consist of manufactured and consumer products.⁴³

In addition, oceanborne cargo may be shipped by either liner- or bulk-mode. Liner cargos, which consist mainly of general cargo, are transported by common carriers on regular routes with fixed rates and schedules. The liner companies usually operate under shipping-industry "conferences" that set the rates, schedules, and routes for international trades. Bulk cargos are carried by ships that are either owned or chartered by the shippers and that sail on demand rather than on a fixed schedule.⁴⁴

⁴⁰ U.S. Department of Transportation, Maritime Administration, *Marad '89: The Annual Report of the Maritime Administration for Fiscal Year 1989*, Washington, DC, April 1990, p. 11.

⁴¹ A short ton is 2000 pounds, and a long ton is 2240 pounds.

⁴² U.S. Department of Transportation, Maritime Administration, *Marad '89*, p. 14 and U.S. Army Corps of Engineers, *Waterborne Commerce of the United States*, 1988, Washington, DC, 1988, p. 93.

⁴³ See U.S. Congress, Office of Technology Assessment, *An Assessment of Maritime Technology and Trade*, p.3; and White, *International Trade*, p. 6 for further discussion.

⁴⁴ *Ibid.*

Table I-2-3
U.S.-flag oceangoing merchant fleet¹, privately owned, 1989

Type	U.S. Foreign Trade	Dead- weight	Foreign- to- Foreign	Dead- weight	Domestic Trade	Dead- weight	M.S.C. ² Charter	Dead- weight	Total	Dead- weight
	No.	Thousand tons	No.	Thousand tons	No.	Thousand tons	No.	Thousand tons	No.	Thousand tons
Passenger/pass. & cargo	0	0	0	0	2	14	0	0	2	14
General cargo	29	449	0	0	0	0	8	115	37	564
Intermodal	74	2,486	7	186	23	473	21	582	125	3,727
Bulk carriers ³	15	762	0	0	7	210	0	0	22	972
Tankers ⁴	24	1,531	15	1,837	126	8,270	24	733	189	12,371
Total	142	5,228	22	2,023	158	8,967	53	1,430	375	17,648

¹ Excludes vessels operating exclusively on the Great Lakes, inland waterways, and special types such as cable ships, tugs, etc.

² Military Sealift Command.

³ Includes tug barges.

⁴ Includes tanker barges and liquefied natural gas (LNG) vessels.

Source: U.S. Department of Transportation, Maritime Administration, *Marad '89*, Washington, D.C., April 29, 1990, p. 12.

Table I-2-4
Volume¹ of U.S. domestic oceanborne freight, by commodity, 1988

<i>Commodity</i>	<i>Tons millions</i>	<i>Percent</i>	<i>Ton-miles millions</i>	<i>Percent</i>
Petroleum & products	269.7	82.9	504,433	89.8
Coal & coke	12.6	3.9	6,718	1.2
Iron ore, iron, & steel	0.4	0.1	428	0.1
Sand, gravel, & stone	3.1	1.0	259	(²)
Grains	0.8	0.2	1,201	0.2
Logs & lumber	1.5	0.5	2,135	0.4
Chemicals	16.0	4.9	21,289	3.8
All others	21.1	6.5	25,131	4.5
Total	325.2	100.0	561,594	100.0

¹ Short tons.

² Less than .05 percent.

Source: U.S. Army Corps of Engineers, *Waterborne Commerce of the United States, 1988*, Washington, DC., 1989, p. 93.

Table I-2-5
Volume of U.S. domestic oceanborne tanker freight between geographic regions, 1986

Origin	Destination							Total
	Atlantic & Gulf coasts	Pacific coast	Hawaii	Alaska	Puerto Rico & Virgin Islands	Other Pacific Islands	Panama	
(Thousands of short tons)								
Atlantic & Gulf coasts	88,326	1,140	37	0	362	0	0	89,865
Pacific coast	2,710	19,020	629	418	0	0	0	22,777
Hawaii	0	124	513	3	0	14	0	654
Alaska	415	61,126	2,027	4,046	5,770	0	30,846	104,229
Puerto Rico & Virgin Islands	16,777	45	9	0	3,557	0	0	20,389
Other Pacific Islands	0	0	0	0	0	0	0	0
Panama	31,455	0	0	0	496	0	0	31,951
Total	139,683	81,454	3,215	4,467	10,184	14	30,846	269,866

Source: U.S. Department of Transportation, Maritime Administration, *Domestic Waterborne Trade of the United States, 1982-86*, Washington, DC, 1988. See also Clinton H. Whitehurst, Jr., *American Domestic Shipping in American Ships: Jones Act Costs, Benefits, and Options*. (Washington, DC: American Enterprise Institute for Public Policy Research, 1985), p. 8.

The transport of dry cargo in the U.S. domestic market, for both bulk- and liner-mode shipping, is dominated by a small number of routes between geographic regions. In domestic liner trade, there are three main markets or "trades": Alaska, Hawaii, and Puerto Rico.⁴⁵ For dry cargo, both bulk- and liner-mode, the total domestic volume transported in 1986 equaled 42.1 million tons. Seventy-one percent of this tonnage was transported between four geographic regions: (1) Gulf coast to Gulf coast, (2) North Atlantic coast to North Atlantic coast, (3) Hawaii to Hawaii, and (4) California to Hawaii.⁴⁶

The majority of total U.S. domestic oceanborne freight is dominated by one commodity: petroleum and petroleum-based products. In 1988, petroleum and petroleum products accounted for 90 percent of the total volume (ton-miles) of freight carried by U.S.-flag ships. (See table I-2-4.) Shipments from Alaska, mostly crude petroleum from Alaska's North Slope, accounted for 104 million short tons, or 39 percent, of total tanker cargo that was transported in 1986.⁴⁷ The total volume of domestic tanker cargo that was transported in 1986 equaled 270 million short tons. Of this amount, 79 percent was transported within or between four geographic regions: (1) the Atlantic and Gulf coasts, (2) Alaska to the Pacific coast, (3) Panama to the Atlantic and Gulf coasts, and (4) Alaska to Panama. (See table I-2-5.)

The Jones Act also prevents foreign cruise vessels from transporting passengers between U.S. ports. As noted above, the effects of the Jones Act on passenger service will not be quantitatively analyzed in this report. Nonetheless, the restriction appears to have only a small effect on the domestic passenger market since most cruise-ship traffic is between U.S. and foreign ports. Furthermore, foreign-flag cruise ships avoid the Jones-Act restriction by returning passengers to the same U.S. port from which they depart. The small segment of the cruise market which the act appears to significantly affect involves the transport of passengers between the U.S. mainland and the Hawaiian islands.

Economic Effects of the Jones Act

Table I-2-7 presents Commission staff estimates of the economic costs of the Jones Act. The actual methodology underlying these estimates is discussed in appendix D. Three sets of estimates are presented, corresponding to three different sets of assumptions about the structure of demand for cabotage services. Under each scenario there are two sources of economic

⁴⁵ U.S. Congress, OTA, *An Assessment of Maritime Trade and Technology*, p. 77.

⁴⁶ U.S. Department of Transportation, Maritime Administration, *Domestic Waterborne Trade of the United States, 1982-86*, Washington, DC, 1988.

⁴⁷ As noted earlier, the Trans-Alaska Authorization Act of 1973 and the Export Administration Act, prohibit the export of Alaskan North Slope oil and, in effect, restrict this particular commodity to Jones Act trade. See White, *International Trade*; and Morgan, *The Impact of the Jones Act* for further discussion.

efficiency gains from removal of the Jones Act. The first is the difference between the cost of providing the existing level of shipping services at prevailing and world prices, and represents the boost to GDP that would result if the domestic resources devoted to cabotage services were instead allocated to other activities. It is reported in the table as production efficiency costs. The second source reflects the net gain to downstream consumers, after accounting for the reduction in cabotage profits and the production efficiency gains, that follow the increased consumption of shipping services at the new lower prices. Based on these two sources of potential gain from liberalization of Jones Act restrictions, Commission staff estimate that Jones Act restrictions on trade in cabotage services cost the U.S. economy between \$3.6 and \$9.8 billion annually. Table I-2-8 presents estimates of the change in cabotage profits and the total change in consumer welfare that would result from liberalization of Jones Act restrictions. While the Jones Act generates \$635.6 million in profits annually for the cabotage sector, this is at a welfare cost to consumers of between \$4.2 and \$10.4 billion annually, in 1988 dollars.

The Jones Act restrictions result in additional effects beyond the welfare effects reported in Tables I-2-7 and I-2-8. Because the restrictions drive up costs for downstream producers that utilize water transport services, continuation of the current set of cabotage restrictions also results in reduced production and employment for those producers in downstream sectors. Table I-2-9 presents Commission staff estimates of the output and employment effects for downstream sectors.⁴⁸ Downstream employment effects are concentrated in the agriculture, forestry, and fisheries sector and in the mining and oil processing sectors. In the agriculture, forestry, and fisheries sector, production is reduced by \$141.2 million at 1988 prices, while employment in the sector is reduced by 1,065 full-time equivalent jobs. In the mining and oil sector, production is reduced by \$329.8 million at 1988 prices, while employment in the sector is reduced by 1,014 full-time equivalent jobs. The effects in that sector are concentrated primarily in the oil extraction and processing subsectors. ✓

As mentioned earlier, a prominent justification for continuation of the Jones Act is the need to maintain a domestic fleet for defense purposes. The value of the production efficiency costs reported in Table I-2-7 corresponds to the subsidy amount necessary to maintain a fleet identical to that supported by the Jones Act, without the act's additional prohibition on imports of domestic shipping services. A direct subsidy would cost approximately \$619.2 million annually (in 1988 dollars) to maintain the merchant fleet supported by the Jones Act. In contrast, the indirect method of protection currently employed imposes annual costs on the U.S. economy of approximately \$5.9 billion, based on mid-range estimates.

⁴⁸ These estimates are based on analysis of the USITC 1988 social accounting matrix, supplemented with data from the 1987 Census of Transportation. Details are provided in appendix D.

Table I-2-6
Revenue for the water transportation sector¹, by SIC group, 1987

SIC Group	Description	Value (\$1000)	Percent of SIC 44
441	Deep sea foreign freight	5,220,842	25
442	Deep sea domestic freight	2,613,457	13
443	Freight, Great Lakes	228,852	1
444	Freight, N.E.C.	1,875,245	9
448	Passenger transportation	2,342,319	11
449	Services incidental to water transportation	8,357,191	41
44	Total water transport	20,637,906	100

¹ The SIC groups covered by the Jones Act included 442, 443, and 444. The revenue for these SIC groups equaled \$4.7 billion, or 23 percent of the total revenue for the water transportation sector.

Source: U.S. Department of Commerce, *Census of Transportation, 1987*.

Table I-2-7
The annual economic costs of Jones Act restrictions on domestic shipping

(In thousands of dollars)

Scenarios	Low Elasticity Estimates			Medium Elasticity Estimates			High Elasticity Estimates		
	Production Efficiency Costs	Other Welfare Costs	Total Costs	Production Efficiency Costs	Other Welfare Costs	Total Costs	Production Efficiency Costs	Other Welfare Costs	Total Costs
Liquid cargo	520,128	2,795,512	3,315,641	520,128	5,003,350	5,523,478	520,128	8,773,802	9,293,930
Dry cargo	99,087	181,819	280,906	99,087	267,709	366,797	99,087	377,396	476,484
Total	619,216	2,977,331	3,596,547	619,216	5,271,059	5,890,275	619,216	9,151,198	9,770,414

Source: USITC staff estimates.

Table I-2-8
The annual effect of the Jones Act on cabotage profits and total consumer surplus

(In thousands of 1988 dollars)

Scenarios	Low Elasticity Estimates		Medium Elasticity Estimates		High Elasticity Estimates	
	Reduction in Cabotage Profits	Increase in Consumer Welfare	Reduction in Cabotage Profits	Other Welfare Costs	Reduction in Cabotage Profits	Other Welfare Costs
Liquid cargo	520,001	3,835,642	520,001	6,043,479	520,001	9,813,931
Dry cargo	115,639	396,545	115,639	482,436	115,639	592,123
Total	635,641	4,232,187	635,641	6,525,915	635,641	10,406,054

Source: USITC staff estimates.

Table I-2-9
Downstream effects of the Jones Act restrictions on trade in cabotage services, 1988

Sector	Annual Reduction in Output million 1988 dollars	Annual Reduction in Employment Full-Time Equivalent Jobs
Agriculture, forestry, and fisheries	141.190	1,065
Mining, oil extraction and processing	329.809	1,014
Construction	31.006	255

Source: USITC staff estimates.

CHAPTER 3 BROADCASTING

Introduction

This chapter describes the important barriers currently in place which affect the domestic broadcasting industry. The chapter is divided into three parts. The first part presents background information about the broadcast industry in the United States. The second part describes the barriers placed upon foreign providers of broadcasting services, and the third part presents the likely economic effects on the domestic industry of removing these barriers.

The Broadcasting Industry

An industry as diverse as broadcasting is difficult to define because it is difficult to delineate exactly what constitutes a broadcasting service. For our purposes, the broadcasting industry is defined to include commercial broadcast television services and commercial radio broadcasting. These are services that use wave broadcasts on a frequency assigned by the Federal Communications Commission (FCC).

Television Broadcasting

Since 1955 the television broadcasting industry has grown rapidly. In 1988 there were 1,044 commercial television stations operating in the United States, compared to only 411 stations in 1955. Revenues from advertising, the usual measure of the size of the broadcasting industry and its firms, totaled \$8.9 billion in 1978. Just 9 years later, all existing television stations earned \$23.2 billion in advertising revenue. The industry has expanded in two ways. The number of television stations has increased dramatically, and they reach the public much more intensively. For example, in 1964 only 8 percent of households received as many as 9 broadcasting stations, while 86 percent of households were able to receive at least 9 stations by 1987¹.

Most television stations are owned by groups, firms, or individuals who own more than one station. As of January 1986, 180 different individuals or groups owned 697 television stations, 73 percent of the television stations in operation.

Radio Broadcasting

Like the television broadcasting industry, radio broadcasting has expanded rapidly in the last 20 years. This expansion consists principally of growth in the number of FM stations and the size of their audience. In 1975 AM stations attracted 70 percent of listeners while FM stations accounted for only 30 percent.

¹ U.S. Department of Commerce, *NTIA Telecom 2000: Charting the Course for a New Century*, Washington DC, October 1988, p.505.

By 1985 these figures were completely reversed. FM stations had captured a clear majority of the listeners.

Barriers to Trade in Broadcasting Services

The principal statute affecting U.S. international trade in broadcasting services is found in section 310 of the Communications Act of 1934.² Section 310 lists the following restrictions on foreign providers of broadcasting services:

A station license shall *not* be granted to—

1. Any foreign government, or
2. Any representative of the foreign government.

In addition, *no* fixed radio station license shall be granted to or held by—

1. Any alien or his representative, or
2. Any corporation organized under the laws of any foreign government, or
3. Any corporation of which any officer or director is an alien, or
4. Any corporation of which more than one-fifth of the capital stock is owned by
 - (a) Aliens or their representatives, or
 - (b) A foreign government or its representative, or
 - (c) Any corporation organized under the laws of a foreign country, or
5. Any corporation *directly or indirectly* controlled by any other corporation of which any officer or more than one-fourth of the directors are aliens, or
6. Any corporation of which more than one-fourth of the capital stock is held by
 - (a) Aliens or their representatives, or
 - (b) A foreign government or its representative, or
 - (c) Any corporation organized under the laws of a foreign country,

if the Federal Communications Commission finds that the public interest would be served by refusing such a license.

In effect, section 310 prohibits foreign control of a broadcasting facility in the United States. This broad restriction was motivated principally by national security concerns. However, section 310 does not prohibit foreigners from having a minor role in the

² Sec. 310 of the Communications Act of 1934, 47 U.S.C. 310.

ownership and operation of broadcasting facilities in the United States. Any corporation with less than 20 percent foreign ownership or any subsidiary of a corporation with less than 25 percent of its capital stock owned by aliens may obtain a station license.

There are some exceptions to the prohibitions put forth in section 310. First, the FCC may issue amateur station licenses to aliens. Furthermore, the Commission may permit an alien, licensed by the alien's own government as an amateur radio operator, to operate an amateur radio station in the United States and its possessions, provided there is a reciprocal agreement between the United States and the alien's home government. Although an alien may obtain a station license and operate such a station in the United States, no station license may be transferred, in any form whatsoever, to anyone, except upon application to the FCC.

Economic Effects of Removing the Restrictions on Foreign Ownership

It is not possible to provide precise quantitative estimates of the effect of removing the restriction on foreign ownership of broadcasting facilities. While such estimates are usually made by calculating a price gap (the difference between the actual price of a product and the price that would prevail in the absence of a barrier), the information needed to calculate such a gap is not available. In addition, the restrictions on foreign ownership are restrictions on investment. Such investment restrictions do affect actual trade in services to the extent that they prevent access by foreign service providers to the U.S. market.

The effect of the restrictions on foreign ownership can be assessed qualitatively. Removing the barrier would be expected to have the following effects: foreign service providers would enter the U.S. radio and television broadcast markets. If there are additional markets or frequencies to be served by new entrants and foreign providers can serve those markets at a lower cost than potential domestic providers, consumers (advertisers) would then experience a welfare gain from paying lower prices, and domestic broadcasters would lose viewers and revenues as advertisers substitute foreign services for domestic services. Consumers would benefit from paying lower prices for the service, while allowing foreign providers access to U.S. markets would increase the variety of services available to the consumer and promote competition among suppliers. On the other hand, if the market or the broadcast spectrum is essentially saturated, we would see some shift of existing market share to foreign owners, but little or no effect on prices.

It cannot be said convincingly that existing restrictions have more than a slight or negligible effect on the actual level of competition and consumer welfare. The broadcast markets are highly competitive, although opportunities for entry into the industry are limited by the availability of broadcast frequencies. The demand for broadcast services faced by a marginal entrant into a highly competitive market must be considered highly elastic, so that, if there is any effect from relaxing the ban on foreign ownership, it is likely to be a very small increase in advertising sold by broadcasters.

CHAPTER 4 BANKING AND OTHER FINANCIAL SERVICES

Introduction

This chapter discusses the nature of international trade flows in banking and other financial services except insurance (covered in chapter 5). After some conceptual discussion, data on the magnitude of trade flows to and from the United States are presented. A discussion of the nature of barriers to imports of these services is provided along with some indication of the likely effects of U.S. barriers on prices and trade flows.

International Trade in Financial Services

The services discussed in this chapter include the following: (1) acceptance of deposits from the public; (2) consumer and commercial lending of all types; (3) payment and money transmission services; (4) guarantees and commitments; (5) trading (for own account or for customers) in money market instruments, foreign exchange, futures and options, securities, or other negotiable instruments and financial assets; (6) participation in issuance of all kinds of securities; (7) asset management; (8) settlement and clearing services for financial assets; (9) financial advising more generally; and (10) provision of financial information and financial data processing.

International trade in banking and other financial services involves cross-border financial flows, such as borrowing and depositing across national boundaries, and may be measured in terms of payments between persons in a given country and those in other countries, comprising interest, fees, and commissions. But, in addition, it is often important for a financial service firm to have a physical presence close to its international client base in order to do business effectively. The resulting "establishment-related trade" may be defined as financial services produced by factors of production whose ownership resides in one country sold to residents of another through some form of direct presence in the client's country. Yet even establishment-related trade may incorporate cross-border transactions in services between parent corporations and affiliates, such as management, data processing, portfolio management, or other services.

To illustrate the increased internationalization of financial services,¹ the number of U.S. banks with foreign offices almost doubled between 1970 and 1984 (to 150 banks with over 1,000 offices and assets of more than \$337 billion).² However, in recent years

¹ Much of this discussion is based on Ingo Walter, *Global Competition in Financial Services* (Washington: American Enterprise Institute, 1988); and U.S. Department of the Treasury, *National Treatment Study: Report to Congress on Foreign Treatment of U.S. Financial Institutions*, 1990.

² Walter, p. 10.

U.S., banks have pulled back a bit from foreign markets with foreign assets of U.S. banks declining to \$275 billion by 1988.³ Even more dramatic has been the inroads in the U.S. market by foreign-owned banks. The number of banking offices in the United States owned or controlled by foreign banks increased from 50 in 1970 to 721 in 1990.⁴ By June 1990 foreign banks operating in the United States had \$349 billion in deposits (14 percent of the U.S. total) and \$184 billion in business loans (29 percent of the U.S. market).

The September 1990 *Survey of Current Business*⁶ reported on U.S. international transactions in financial services from 1986 through 1989. U.S. receipts for services provided abroad (analogous to exports) were defined to include commissions and fees for transactions in U.S. securities paid to U.S. securities brokers by foreign residents, noninterest income of U.S. banks,⁷ and commissions received by U.S. commodities brokers from foreign residents. These receipts increased from \$3.3 billion in 1986 to \$5.0 billion in 1989, growing at an annual rate of 15 percent over the 1986-89 period. The largest source countries for these receipts were the United Kingdom and Japan, providing 25 percent and 11 percent, respectively, in 1989. Of the 1989 receipts, 56 percent was accounted for by bank fees, with the remaining 44 percent representing securities and commodities brokers' fees and commissions. The cross-border transactions in services between parent corporations and affiliates, mentioned above, are not reported by the Bureau of Economic Analysis (BEA) as receipts or payments for financial services, however.

U.S. payments (analogous to imports) were defined to include commissions and fees for transactions in foreign securities paid by U.S. residents to foreign brokers. These payments increased from \$1.8 billion in 1986 to \$2.0 billion in 1989, representing annual growth of 4 percent. The major recipients of these payments were again the United Kingdom and Japan, with 40 percent and 22 percent, respectively, in 1989.

To put these "trade flows" into some perspective, estimated 1989 revenues for the U.S. financial service sector were \$405.9 billion.⁸ Also, it should be noted that the international transactions discussed above exclude cross-border interest flows. Although data on these are not available, they are very large relative to the receipts and payments included. In 1986 foreign banks operating in the United States had \$411 billion in deposits and \$110 billion in business loans. At any reasonable rate of interest, the interest associated with these accounts (and the interest received and paid by

³ "U.S. Banks Cut Global Business as Rivals Grow," *New York Times*, July 5, 1990, p.1.

⁴ Walter, p. 10; and Treasury, p.81.

⁵ Treasury, p. 83.

⁶ U.S. Department of Commerce, "U.S. International Sales and Purchases of Services," *Survey of Current Business*, September 1990.

⁷ This is limited to fees for bankers acceptances, commercial letters of credit, standby letters of credit, undrawn funds under commitment, and items for collection.

⁸ Compiled by USITC staff from industry sources.

U.S. banks in foreign markets) would be larger than the fees and commissions reflected in the international transaction data.

Barriers to Trade in Financial Services

National barriers affecting the international movement of banking and securities-related services may be grouped into four broad categories: (1) those directly affecting cross-border transactions; (2) those relating to establishment (i.e., entry through operations within another country); (3) those relating to the nature of competition within foreign markets; and (4) those not directly related to financial services. The first category is concerned with capital or foreign exchange controls and with constraints on the marketing of foreign securities. Measures of the second type involve government control on the entry and form of establishment of foreign banks and securities firms. The third category involves the extensive national regulation generally found in the financial service industry; these may place higher demands (with respect to minimum reserve requirements, capitalization, and disclosure, among others) on foreign service providers. In the fourth category are such measures as immigration rules, limits on repatriation of interest, dividends, and profit, and limitations on cross-border data flows.

It is important to note that measures in all of the above categories may apply equally to foreign and domestic financial service providers, and thus constitute "national treatment." Furthermore, in a federal system such as the United States, the myriad of state regulations may favor in-state financial service firms at the expense of both foreign and out-of-state U.S. firms. While generally "national treatment" would not be seen as an import barrier, to the extent that "treatment" involves especially burdensome regulation it may be seen by foreign financial service providers as constituting an unfair obstacle to serving the U.S. market.

With respect to barriers to establishment, of 141 countries surveyed by the U.S. Department of the Treasury in 1984, only 13 (including the United States) had no explicit restrictions to the entry of foreign banks.⁹ The 1990 Treasury report on banking and/or securities markets in 27 countries found that significant progress had been made in liberalizing trade in financial services by the European Community and Canada, with more modest gains with respect to Japan, Korea, and Taiwan. Significant restrictions were found to remain in most major Latin American countries. The restrictions that did exist varied widely in terms of types of banking offices and banking powers allowed and the degree of ownership permitted (e.g., only minority ownership, or a specific smaller percentage). Especially high capital requirements may also be viewed as an entry barrier.

⁹ Walter, pp. 130-131.

Once operating in a national market, foreign-owned financial service firms may face a different regulatory regime than do domestic firms. In some cases, there may be a competitive advantage given to foreign firms. For example, in the United States until 1978 foreign banks were exempt from restrictions (binding on domestic banks) on branching across state lines and investment banking activity, and were not required to join the Federal Reserve System.¹⁰

On the other hand, governments often restrict the operations of foreign financial service firms by limiting the markets within the country which may be served, setting limits on growth both of loans and of sources of local funding, and through measures that raise operating costs.¹¹

The idea of reciprocity in trade in financial services involves affording foreign-based firms the same access as home-country firms receive from the foreign government. Reciprocity may lead to the imposition of operating constraints on U.S.-based firms in foreign markets of the type not generally applied there (e.g., branching restrictions or Glass-Steagall limitations of banking activities). Given the State-level regulations prevalent in the U.S. financial services industry, reciprocity could affect different U.S. firms differently in foreign markets. For example, Walter¹² notes that Japan denied Texas-based banks the right to establish branches in Tokyo in response to Texas's prohibition of foreign bank branches. Furthermore, strict reciprocity would make for a confusing mixture of policies towards financial institutions from a great number of foreign countries each imposing somewhat different banking regulations.

According to a 1988 General Accounting Office report,¹³ most foreign financial institutions interviewed believed that the United States generally offered equal treatment to domestic and foreign financial service firms. There was, however, some concern about some State insurance regulations that exclude foreign banks from one segment of the insurance market (providing reinsurance standby letters of credit) and about the collateralization requirement for foreign banks using daylight overdrafts on the Fedwire electronic financial transfer system.

Despite "national treatment," foreign institutions seem more concerned about restrictions under the Glass-Steagall Act (which is applicable to both domestic and foreign firms and which limits the scope of securities operations that banks may conduct in the United States), with the strict disclosure requirements of the Securities and Exchange Commission, and with

¹⁰ Walter, p. 133.

¹¹ Walter, pp. 135-136.

¹² Walter, pp. 158-159.

¹³ U.S. General Accounting Office, *International Finance: Competitive Concerns of Foreign Financial Firms in Japan, the United Kingdom, and the United States*, GAO/NSIAD-88-171 (June 1988).

the complexity of overlapping Federal and State regulations in the financial service sector.¹⁴

While no quantitative judgment is possible, it seems unlikely that the degree of competition in the U.S. financial sector is significantly affected by U.S. barriers to imports of financial services. Much more of an open question is whether the existing nature of U.S. regulations affecting domestic and foreign financial service firms alike, while not acting as a barrier to international trade, limits the competitive process.

¹⁴ For a discussion of the issue of national treatment in the context of differing State regulations covering banking, see Sydney J. Key, "Is National Treatment Still Viable? U.S. Policy in Theory and Practice," International Finance Discussion Paper No. 385, Board of Governors of the Federal Reserve System, September 1990.

CHAPTER 5 INSURANCE SERVICES

Introduction

The service provided by the insurance industry is the protection of its customers from financial risk by spreading that risk, and it collects a premium for providing this service. It is beneficial to firms in the industry, and to their clients, to spread risk as widely as possible, up to the point at which the further spreading of risk becomes economically infeasible or unprofitable. This is a natural source of industry-wide scale economies.

Insurance enters the international arena through several markets. The most apparent international market for insurance is the market for cargo and transport insurance. Such insurance is most often purchased by the exporter in international transactions. The exporter assumes the risk for the successful transport of the traded good and spreads the risk through a contract with an insurer that may or may not be a resident of the exporter's home country.

Reinsurance is in essence a secondary insurance market; it is the purchase of insurance by one insurance company from another, usually a reinsurance specialist or underwriting pool. This market is highly international, and the kinds of risks underwritten in it are generally large commercial risks such as a satellite launch.

General insurance, including such insurance products as liability and negligence insurance, fire insurance, vehicle, health, and homeowner insurance, is less intrinsically international in scope. Firms selling such insurance do so either through direct contact with the client or through an agent. Participation in this market by foreign firms usually requires some kind of local establishment both to make the sale and to deliver the product (to process claims).

Life insurance is similar to general insurance in its need for access to the individual policy holder. Further, a variety of products are offered that resemble those of other financial sectors. Life insurance policies, particularly whole-life type policies, may include features like annuities, lines of credit, and health and disability insurance.

The U.S. Insurance Industry

In 1988 the U.S. insurance industry, exclusive of nonprofit companies like Blue Cross-Blue Shield, had premium receipts of about \$431,000 million, which represented 36 percent of the world market. Nonlife insurance accounted for \$254,590 million in receipts, or about 59 percent of the total.¹ Reinsurance is largely part of the property and casualty market, making up perhaps 10 percent of its receipts.

The industry is intensely competitive and relatively lightly concentrated; over 5,000 companies are doing business in a least 1 State, and no company accounts

for more than 10 percent of either the life or nonlife sector.

Imports of insurance services in 1989 were \$733 million (measured as payments of premiums to foreign insurers, net of losses paid by foreign firms to U.S. customers). Exports, measured similarly, were \$1,297 million. A better measure of the volume of international business might be gross receipts (and payments) of premiums. In 1989 U.S. insurers received \$3,365 million in premiums from abroad for primary insurance and \$1,722 million for reinsurance. Payments for primary insurance were \$1,075 million, and for reinsurance they were \$8,629 million.² European firms dominate the global reinsurance market, in which the top 10 firms take 30 percent of the total business; 8 of these 10 firms are European.³

Barriers to Trade in Insurance Services

In principle trade barriers can take the form either of border restrictions or of restrictions on establishment and operations in a market. Border transactions in insurance consist almost entirely of remittances of premiums and loss payments, financial transactions that are essentially unregulated. Related transactions involve international capital investments and foreign exchange transactions.

The more significant restrictions on the insurance industry affect the establishment and conduct of business in particular local markets. All types of insurance involve pre- and post-sales service to customers in product selection, risk management, and financial consulting. These services usually require some form of local representation. In addition, the desire to assure that the investment funds controlled by insurers are safe, both for the benefit of the economy and the security of the customer, motivates government regulation of the insurance sector. Therefore, regulations which inhibit the establishment of a local presence by foreign insurance firms, or rules regarding the local investment of, or accounting for, premiums collected in a given locality could be regarded as barriers to trade in insurance services.

Each State regulates its own insurance industry, determining admittance, forms, rates, reserve requirements, and other regulatory matters. For regulatory purposes, insurance companies are designated by a State as domestic (incorporated and licensed within the home State), foreign (incorporated in another State but licensed to do business in the home State), and alien (with home offices outside the United States). It should be noted that almost none of these regulations discriminates against alien insurance firms. The one exception is the prohibition, effective in about half of the States, against the granting of a license to an

¹ Swiss Reinsurance, *Sigma*, April 1990

² Anthony J. DiLullo and Obie G. Whichard, "U.S. International Sales and Purchases of Services," *Survey of Current Business*, U.S. Department of Commerce, September 1990.

³ Swiss Reinsurance Company, *Sigma*, May 1989

insurer owned or controlled by a foreign government. (And in some cases this is actually a prohibition against all government-owned or controlled insurers, "alien," "foreign," or "domestic.") While this has a chilling effect on participation of certain firms in certain markets, it cannot be said convincingly to have an effect on the level of competition and consumer welfare in those markets. The demand for insurance faced by a marginal entrant into a highly competitive market must be considered highly elastic. This means that the effect on the market of the entry of a new firm may be a very small additional amount of insurance sold at the price prevailing before the firm's entry.

The most serious barrier to participation by alien insurance firms in U.S. markets is undoubtedly the complexity of the regulatory environment, which is

faced by all firms regardless of nationality. Most industry experts seem to regard these regulations as minor to moderate barriers to entry into State insurance markets, as evidenced by the large number of firms and the lack of concentration in the industry. It is impossible to quantify the effect of this environment, as an import barrier, on the welfare of consumers in the U.S. insurance market. Perhaps in the larger analysis it would be more appropriate to ask whether the complexity of the regulatory environment and the duplication of regulatory agencies and authorities across jurisdictions, for domestic, foreign, and alien firms alike (and thus not acting as a discriminatory trade barrier), is more harmful than beneficial to the welfare of U.S. consumers.

CHAPTER 6 CONSTRUCTION

Introduction

The U.S. construction sector provides diverse services. The industry contains firms that provide design, construction, and management services for a variety of structures and facilities. These services include new projects as well as alteration and repair of existing structures. Construction projects generally fall into two categories: structures and productive facilities. Structural projects include residential buildings, nonresidential buildings, and industrial plants. Productive facility projects include utility facilities, transportation facilities, and public-works facilities.

The construction industry is typified by the following characteristics. First, the output is physical and made to particular specifications using components manufactured in other industries. Second, the industry has a large number of design firms that have few formal links with the firms that implement their designs. Third, construction demand is substantially influenced by government policies. Finally, the price of its output is highly influenced by factors other than the cost of construction. In particular, the price of land, the price of capital, and the system of taxation can considerably affect the final cost of a project.

Methods of Providing Service

The construction process in the United States involves a series of steps that can be broadly categorized into two phases: design and construction.

Design Phase

The design phase begins with the preliminary decisions about a project including the designation of a project manager by the owners. This phase continues with a comprehensive feasibility study by in-house staff or technical consultants. The feasibility study usually includes initial cost estimates and an examination of basic building and site alternatives. Also, this study considers local government regulations such as local building codes, zoning regulation, and any environmental impact.

Once the basic design parameters are established, the owners will retain a construction-management firm. This firm will design drawings, project models, and detailed cost estimates. The construction schedule will also be prepared and government approvals secured. During this phase architects, engineers, and other professions collaborate on aspects of the project.

Construction Phase

The first step in the construction phase is the bidding process for the project. Bid procedures vary with the owners, the type of project, and the country. Formal bid procedures are generally required for

government-financed projects or projects involving multinational development banks (e.g., the World Bank). In the United States, bidding procedures can differ by State and even by county. For private sector projects an informal bidding procedure may be used where only certain firms are informed of the project and invited to bid. During the bidding process long-term financing is arranged and a schedule of payments to the general contractor is established.

Next, the final drawings are prepared and the construction site is prepared. The contractor may also agree to provide postconstruction management services. Increasingly, U.S. design/engineering and construction firms are retained for their construction/management expertise rather than their ability to perform actual project construction. This trend has accelerated recently because there has been a decline in the number of large, capital-intensive infrastructure projects commissioned internationally. In order to compete, many contractors are concentrating on projects that demand specialized services.

Barriers to Trade in the Construction Industry

For the most part, the U.S. construction industry is free of trade barriers. In 1989, foreign firms were awarded \$15.5 billion of contracts or 3.6 percent of total new construction in the United States.¹ However, one act of Congress as well as State licensing requirements for architects and engineers may impede trade in construction services.

In 1987 the U.S. Congress adopted the Brooks-Murkowski Amendment to the Continuing Resolution for Fiscal Year 1988 prohibiting countries which the United States Trade Representative designates as unfair traders in construction services from participating in construction projects funded by the U.S. Government. In recent years, the U.S. Government has funded about 11 percent or approximately \$46 billion of new construction in the United States. In FY 1988 Japan was the only country designated because of its refusal to allow foreign construction firms to participate in the expected \$60 billion of Japanese public works projects in the coming decade. Since this amendment was attached to an appropriations bill, it expired in October 1989. Almost identical language was passed in October 1990 for FY 1991 as an amendment to the appropriations bill for the Airport and Airways Improvement Act.¹ This amendment expires in October 1991.

The Brooks-Murkowski amendment has not significantly affected trade in the U.S. construction industry. Although Japan was designated for FY 1988, this amendment affected only 3 public works projects with Government funding, according to the U.S.

¹ U.S. Industrial Outlook, 1991, pp. 5-2 and 5-14.

² Similar amendments were also attached to the energy and water, and transportation appropriation bills.

Department of Commerce. Over the past few years Japanese firms have held approximately a 20-percent share of contracts awarded to foreign firms in the United States, and they have held about a 0.6 percent share of the total U.S. construction market. It seems unlikely that the Brooks-Murkowski Amendment has significantly impeded the ability of Japanese firms to export construction services to the United States. See table I-6-1 for a presentation of recent trends in the U.S. construction industry.

All States have professional licensing requirements for architects and engineers, which apply to U.S. out-of-State professionals as well as foreigners.

Moreover, they also require that only registered architects and engineers approve and endorse drawings or plans. These requirements do not significantly impede foreign-based architecture and engineering firms from operating in the United States. If these requirements were waived for foreign-based firms, industry sources indicate that these firms would continue to employ professionally licensed and registered U.S. architects and engineers for U.S. projects to maintain quality and safety standards, as well as assure a competitive status in bidding on contract proposals.

Table I-6-1
The United States construction industry, 1985-89

<i>Item</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>
Total new construction (\$ billions) ¹	355.7	387.0	410.2	422.1	432.1
Federally funded construction (\$ billions)	46.4	48.2	45.9	48.2	45.6
Federally funded construction as a share of total construction (In percent)	13.0	12.5	11.2	11.4	10.5
Construction awarded to foreign firms (\$ billions) ²	10.3	10.4	11.5	12.7	15.5
Construction awarded to Japanese firms (\$ billions) ^{2,3}	2.0	2.1	2.3	2.6	2.8
Japanese share of contracts awarded to foreign firms (In percent) ¹	19.4	20.2	19.8	20.5	18.1
Japanese share of U.S. construction market (In percent)	0.6	0.5	0.6	0.6	0.6

¹ Values are current year dollars.

² The values for 1985-87 are for North America whereas the values for 1988 and 1989 are for the United States only. The Brooks-Murkowski amendment was passed in 1988.

³ Data are not available to determine the share of Federally funded construction awarded to Japanese firms.

Source: *U.S. Industrial Outlook*, various years and *Construction Review* May/June 1990.

PART TWO
A COMPUTABLE GENERAL EQUILIBRIUM ANALYSIS OF
SIGNIFICANT U.S. IMPORT RESTRAINTS



PART TWO A COMPUTABLE GENERAL EQUILIBRIUM ANALYSIS OF SIGNIFICANT U.S. IMPORT RESTRAINTS

Introduction

Phases 1 and 2 of this study addressed the significant U.S. import restraints in manufacturing and agriculture, respectively, on a sector-by-sector basis.¹ In this chapter, these import restraints are revisited in a multisectoral, economywide framework. This framework accounts for the relevant links between the protected sectors and the rest of the economy, including the effects of the import barriers on "downstream" industries consuming the sectors' products as intermediate inputs. Multisectoral, economywide analysis also makes possible the examination of the significant import restraints *as a set*, considering their combined effects on the economy. This chapter

¹ The two reports are USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase I: Manufacturing*, USITC Publication 2222, Washington, DC, October 1989; and USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase II: Agricultural Products and Natural Resources*, USITC Publication 2314, Washington, DC, September 1990.

Table II-1
Focus and reference sectors

Sector	Label	Description
Focus sectors:		
1	Cotton	Cotton
2	Meat	Meat Packing Plants
3	Butter	Creamery Butter
4	Cheese	Cheese
5	Conevpmilk	Condensed and Evaporated Milk
6	Fldmilk	Fluid Milk
7	Sugar	Sugar
8	Textiles	Textiles
9	Apparel	Apparel
10	Indchem	Industrial Inorganic and Organic Chemicals
11	Plstmat	Plastics Materials and Resins
12	Footwear	Footwear
13	Leathgood	Leather Goods and Luggage
14	Glassprod	Glass and Glass Products
15	Certile	Ceramic Wall and Floor Tile
16	Chinearth	China and Earthenware
17	Machtools	Machine Tools
18	Blbearing	Ball and Roller Bearings
19	Opticlins	Optical Instruments
20	Costjewl	Costume Jewelry
21	Dolls	Dolls
Reference sectors:		
22	Agforlsh	Agriculture, Forestry, and Fishing
23	Mining	Mining and Mineral Resources
24	Construct	Construction
25	Ndurmfng	Nondurable Manufacturing
26	Durmfng	Durable Manufacturing
27	Trcomut	Transportation, Communication, Utilities
28	Trade	Wholesale and Retail Trade
29	Fininsre	Finance, Insurance, and Real Estate
30	Services	Personal, Business, and Public Services

presents these simultaneous effects in terms of aggregate economic welfare, sectoral trade, sectoral production, and sectoral employment. The analysis was conducted using the ITC Computable General Equilibrium (CGE) Model.²

The chapter addresses 7 specific agricultural sectors and 14 specific manufacturing sectors. These "focus" sectors include all the sectors analyzed in phases 1 and 2 of the Import Restraints study that can be addressed with the ITC general equilibrium model.³ They are listed in the first 21 lines of Table II-1. The focus sectors are related to the rest of the economy through intermediate input linkages and competition for available productive resources. Since it is the purpose of computable general equilibrium analysis to capture all of these relationships, the study also addresses nine "reference" sectors into which the remainder of the economy is aggregated. These reference sectors compose the background to the general equilibrium analysis, and are listed in lines 22 through 30 of Table II-1. The "focus" and "reference" sectors together account for the entire economy.

² The ITC CGE model is described in K.A. Reinert and D.W. Roland-Holst, *An Introduction to the ITC Computable General Equilibrium Model: Addendum to the Economic Effects of Significant U.S. Import Restraints*, USITC Publication 2423, October 1991.

³ Other sectors, such as bicycles, are too narrowly defined to be addressed in a general equilibrium framework with available U.S. data.

In the following section, a brief description of computable general equilibrium analysis is given. Next, the import restraints for the focus sectors are described in terms of tariff levels, tariff equivalent quotas, and quota rents. Finally, the results of a policy simulation in which all significant import restraints are removed simultaneously is described. A more technical description of the ITC CGE model is provided in an addendum to this report.

Computable General Equilibrium Modeling

Computable general equilibrium models, such as the ITC CGE model, simulate the interactions among producers and consumers within an economy in markets for goods, services, labor, and physical capital. The distinguishing feature of a CGE model is its economywide coverage and multisectoral nature. A CGE model explicitly accounts for upstream and downstream production linkages, intersectoral competition for labor and capital, and exchange rate changes. A growing body of evidence suggests that these indirect effects of import restraints can be important.

In the application of the CGE methodology to U.S. import restraint removal, the following question is asked: What would happen to the economy if the import restraints were removed and all other U.S. policies (monetary and fiscal) as well as foreign conditions (economic behavior in foreign countries) remained the same? The analysis considers what *would have happened* to the U.S. economy in the base year (1988) if the import restraints were removed. The analysis thus emphasizes the effects of import restraints in isolation from other factors that affect the economy. Since the analysis does not incorporate expected future changes in these other factors, it is not a forecast. That is, the analysis does not tell what actually will happen if import restraints are removed. It does provide an assessment of the specific contributions of a policy change such as the removal of tariffs and quotas, however.

The ITC CGE model imposes a number of conditions with regard to the behavior of government, capital markets, and the rest of the world. With regard to government, the model holds total government spending fixed in real terms. The same is true for total investment spending. Allowing real investment to vary would raise questions about intertemporal substitution which are beyond the scope of this study.

Given these specifications for government and investment spending, the model evaluates domestic welfare in terms of aggregate private real consumption. The basic welfare indicator is a measure which equals the change in purchasing power necessary to move from actual 1988 consumption levels to the levels attainable under liberalization. This indicator is known to economists as the "equivalent variation" (EV)

welfare measure.⁴ It measures the amount of income that would have to be given to the household sector in the absence of liberalization to reach the level of overall economic welfare achievable under liberalization.

A final observation concerns the role of the rest of the world as an economic agent. Many CGE models specify international markets as exogenous and ignore terms-of-trade effects. The ITC model, however, uses estimates of import supply and export demand relations to specify rest-of-the-world behavior in sectors where these responses appear to be statistically significant.

An important concern in CGE modeling is the construction of a sound empirical foundation. The empirical content of a CGE model is obtained via a process of calibration to a base year dataset.⁵ In the case of the ITC CGE model, the base year dataset is a detailed social accounting matrix or SAM for 1988 containing data on interindustry flows, value added, trade, and final demand. Estimated in a consistent manner, the ITC SAM ensures that simulations begin from an empirically valid initial position that incorporates all the consistency conditions implied by the model formulation.⁶ The calibration process also requires a set of behavioral parameters for production, consumption, and trade relationships. In the case of the ITC CGE model, most behavioral parameters have been either estimated econometrically by Commission staff or taken from the economic literature. They reside in a detailed behavioral parameter dataset maintained by Commission staff.⁷ Aggregations of the ITC SAM and the ITC behavioral parameter dataset were used to calibrate the model for this chapter.

Import Restraints

The import restraints considered in this chapter are of two types: tariff and quota. These appear separately or together, depending on the sector. The *ad valorem* equivalent tariffs for the focus sectors are presented in the third column of table II-2. These are calculated from the ITC social accounting matrix. Some of the focus sectors with import quotas do not have significant tariffs (cotton, butter, condensed and evaporated milk, fluid milk, and sugar). The remainder of the focus sectors have tariffs that range from 1 percent (meat) to 18 percent (apparel).

⁴ See P.R.D. Layard and A.A. Walters, *Microeconomic Theory*, (New York: McGraw-Hill, 1978), p. 151.

⁵ The calibration process is described in J.R. Shoven and J. Whalley, "Applied General Equilibrium Models of Taxation and International Trade," *Journal of Economic Literature*, vol. 12, no. 3 (September 1984), pp. 1007-1051.

⁶ The ITC SAM and the process of its construction is described in K.A. Reinert and D.W. Roland-Holst, "Social Accounting Matrices for U.S. Trade Policy," unpublished USITC staff working paper, September 1990. See also the addendum to this report.

⁷ The ITC behavioral parameter dataset is described in K.A. Reinert and D.W. Roland-Holst, "Parameter Estimates for U.S. Trade Policy Analysis," unpublished USITC staff working paper, April 1991.

Table II-2
1988 Import restraints

<i>Sector</i>	<i>Label</i>	<i>AVE Tariff^a</i>	<i>Quota Premium^b</i>	<i>Quota Rents (millions of dollars)</i>
Focus sectors:				
1	Cotton	0.00	7.00	0 ^c
2	Meat	1.00	3.00	74
3	Butter	0.00	96.00	0 ^c
4	Cheese	10.00	47.00	87
5	Consevmk	0.00	65.00	44
6	Fldmilk	0.00	65.00	4
7	Sugar	0.00	100.00	305
8	Textiles	11.00	10.00	400
9	Apparel	18.00	30.00	5,672
10	Indchem	5.00		
11	Pstmat	8.00		
12	Footwear	11.00		
13	Leathgood	12.00		
14	Glassprod	7.00		
15	Certile	17.00		
16	Chinearth	11.00		
17	Machtools	4.00		
18	Blbearing	9.00		
19	Opticlins	6.00		
20	Costjewl	5.00		
21	Dolls	6.00		
Reference sectors:				
22	Agforfsh	2.00		
23	Mining	1.00		
24	Construct	0.00		
25	Ndurmfng	3.00		
26	Durmfng	3.00		
27	Trcomut	0.00		
28	Trade	0.00		
29	Fininsre	0.00		
30	Services	0.00		

^a *Ad valorem* equivalent tariff (percent).

^b Tariff equivalent quota premium rate (percent).

^c Less than one million dollars.

Source: *Ad valorem* tariff equivalents calculated from the social accounting matrix described in Appendix E. Tariff equivalent quota premium rates from sources described in K.A. Reinert and D.W. Roland-Holst, "Parameter Estimates for U.S. Trade Policy Analysis," USITC staff working paper, April 1991. Quota rents were calculated by staff using the ITC CGE model.

Tariff equivalents of the import quotas (i.e., tariff rates which, if applied to the world price, would replicate the outcome of the quota) are presented in the fourth column of table II-2.⁸ In the case of cotton, this study adopts the *ad valorem* equivalent value of 7 percent used by the U.S. International Trade Commission in the phase 2 report.⁹ For meat packing plants, the phase 2 study reports a quota premium of 6.1 percent for boneless cow beef and a premium of 2.7 percent for bull beef. Given these estimates, a premium of 5 percent is used for beef imports. Using the share of beef imports to total imports for meat packing plants, an estimated quota premium of 3

percent for all meat products is calculated. For the dairy products, the phase 2 study reports quota premia of 96 percent, 47 percent, 65 percent, and 65 percent for creamery butter, cheese, condensed and evaporated milk, and fluid milk, respectively. The analysis adopts these values. In the case of sugar, the phase 2 study reports a quota premium of 102 percent. This study adopts a value of 100 percent.

The last two groups of sectors with quotas are textiles and apparel. Estimates of quota premia for these sectors are based on a consultant's report prepared for the Commission.¹⁰ This report provides of approximately 10 percent and 30 percent, respectively.

⁸ Although there are no quotas on the imports of fluid milk *per se*, SIC No. 2026, Fluid Milk, contains creams on which the U.S. imposes import quotas.

⁹ USITC, September 1990.

¹⁰ J. Pelzman, "The Tariff Equivalents of Textile Quotas under the Multifiber Arrangement: Update for 1988," consultant's report, USITC, December 1990.

An important feature of quotas is the rents they generate. These rents are profits obtained from the scarcity introduced by the quota.¹¹ If the quota rights estimates of the 1988 total price gaps (quota premia plus tariff) of 20 percent and 55 percent for textiles and apparel, respectively. Discounting these estimates by the 1988 tariffs provides estimates of the quota premia are held by domestic importers, the rents accrue to domestic firms. Removing the quotas in this case effects a transfer from domestic importers to consumers. If the quota rights are held by foreign exporters, the quota rents accrue abroad. In this case, removing the quotas effects a transfer from foreign exporters to domestic consumers.

In the cases of cotton and meat, the quotas are allocated to foreign exporters and the rents therefore accrue abroad. In the cases of butter and cheese, quota licenses are allocated by the U.S. Department of Agriculture to domestic importers. This would lead one to conclude that rents accrue to these firms.¹² However, the export sides of these markets are significantly concentrated. For this reason, it is quite likely that exporters share in the quota rents.¹³ Based on this evidence, this study uses an estimate that 50 percent of the butter and cheese quota rents accrue to foreign exporters.

For condensed and evaporated milk and fluid milk, quotas are administered by the U.S. Customs Service on a first-come-first-served basis. In both of these cases, exports are tightly controlled. Indeed, in the case of fluid milk, the only exporter is the New Zealand Dairy Board. For this reason, the model is calibrated with the condensed and evaporated milk and the fluid milk rents accruing abroad.

Sugar quotas are allocated to the exporting countries. Therefore, the model is calibrated with the sugar rents accruing abroad.

In the case of textiles and apparel, the quota rights are allocated to foreigners. In the past, there was a general agreement in the literature on textile and apparel protection that the market structures of importing and retailing these products were highly competitive.¹⁴ For this reason, researchers usually

assumed that the bulk of textile and apparel quota rents accrue to foreigners. Recently, however, some evidence has been put forward that "rent sharing" exists in the quota system.¹⁵ Based on this evidence, this study estimates that 20 percent of the textile and apparel quota rents accrues to domestic importers.

The rents generated by the quotas considered here are calculated by the ITC CGE model as part of its calibration. The estimates are presented in the fifth column of table II-2. The striking feature of these estimates is the size of the rents generated by the apparel quotas, a total of \$5.7 billion. Under the estimate that 20 percent of the apparel rents accrues to domestic producers, \$4.5 billion is transferred from U.S. consumers to foreign apparel exporters through these quotas. In terms of the size of quota rents generated, textiles and sugar follow apparel as the most important quotas, generating \$400 million and \$305 million in rents, respectively. Next in importance is cheese with \$87 million in quota rents. The meat and condensed and evaporated milk quotas generated \$74 million and \$44 million in rents, respectively. Quotas in the fluid milk sector generated \$4 million in rents, while cotton and butter quotas generated less than \$1 million in quota rents each.

Removal of All Significant U.S. Import Restraints

In this section, the removal of all significant U.S. import restraints is addressed. More specifically, results are presented from a policy simulation of removing all tariffs and quotas on the focus sectors of table II-1. First discussed are the qualitative nature of the effects of import restraint removal in an economywide framework. Next, the overall quantitative effects of the policy simulation are presented. Finally, the sectoral quantitative effects are considered.

The simultaneous removal of all significant U.S. import restraints causes two sets of effects that can work in opposite directions. The first set of effects are *relative price effects*. Liberalization reduces the domestic prices of the protected imports. This increases import penetration, which tends to cause a depreciation of the nominal exchange rate and a decrease in domestic prices for the liberalized products. These effects tend to lead to a depreciation of the real exchange rate and an increase in export competitiveness in other sectors.¹⁶ The second set of effects are *rent recapture effects*. Rent recapture is equivalent to an inward transfer, which tends to cause an appreciation of the nominal exchange rate and an

¹¹ See W.M. Corden, *The Theory of Protection* (Oxford: Clarendon Press, 1971), ch. 9.

¹² This assumption is made in the well-known study by J.E. Anderson, "The Relative Inefficiency of Quotas: The Cheese Case," *American Economic Review*, vol. 75, no. 1 (March 1985), pp. 178-190.

¹³ Based on conversations with staff at the Foreign Agricultural Service and the Economic Research Service, U.S. Department of Agriculture. For evidence on the cheese case, see E. Homig, R.N. Boisvert, and D. Blandford, "Explaining the Distribution of Quota Rents from US Cheese Imports," *Australian Journal of Agricultural Economics*, vol. 34, no. 1 (April 1990), pp. 1-20.

¹⁴ See Cline, W.R., *The Future of World Trade in Textiles and Apparel* (Institute for International Economics, Washington, DC, 1990), pp. 189 and 360 and de Melo, J. and D. Tarr, *A General Equilibrium Analysis of U.S. Foreign Trade Policy* (Cambridge: MIT Press forthcoming), ch. 4.

¹⁵ See R. Erzan, K. Krishna, and L.H. Tan, "Rent Sharing in the Multi-Fibre Agreement," Policy, Research, and External Affairs Working Paper, World Bank, Washington, DC, February 1991.

¹⁶ The real exchange rate is defined as the relative price of tradeables to nontradeables. A real exchange rate depreciation means that tradeables become more expensive relative to nontradeables.

increase in domestic prices.¹⁷ These effects tend to lead to an appreciation of the real exchange rate and a decline in export competitiveness. Which of these two sets of effects dominates is an empirical question, determined by the interaction of the many components of the economy and simulated with the CGE model.

The removal of the import restraints also causes real consumption to increase. The change in purchasing power necessary to move from the initial real consumption level to that attainable under liberalization (the equivalent variation concept introduced above) provides a measure of the increase in welfare.

The overall quantitative effects of the removal of the import restraints are as follows. The equivalent variation measure of the increase in U.S. welfare is \$9.5 billion. This increase in welfare is approximately

¹⁷ An inward transfer increases spending which raises domestic prices and causes substitution towards traded goods. See ch. 6 of R. Dornbusch, *Open Economy Macroeconomics* (New York: Basic Books), 1980.

Table II-3

Sectoral effects of removing significant U.S. import restraints (percent and million dollar changes from 1988 base except where indicated)

Sector	Imports		Exports		Production		Employment ^b
	Percent	Dollar ^a	Percent	Dollar ^a	Percent	Dollar ^a	
Focus sectors:							
Cotton	2.5	0	0.0	2	-0.3	-19	-0.1
Meat	6.8	175	-0.1	-2	-0.2	-115	-0.4
Butter	108.9	2	0.2	1	0.0	0	0.0
Cheese	77.2	293	-1.8	-2	-2.2	-250	-0.5
Convepmik	71.0	80	-0.7	-2	-1.0	-53	-0.1
Fidmilk	39.6	4	0.1	0	-0.0	-7	-0.0
Sugar	78.3	479	-4.1	-5	-6.3	-457	-1.4
Textiles	8.7	427	-1.7	-30	-1.9	-1,274	-8.4
Apparel	22.8	6,618	-1.5	-27	-2.6	-1,830	-34.6
Indchem	1.6	191	-0.3	-87	-0.4	-361	-1.3
Pistmat	11.7	161	-0.3	-31	-0.6	-183	-0.6
Footwear	5.9	582	4.7	3	-1.0	-45	-0.9
Leathgood	8.8	261	-2.0	-2	-4.4	-115	-1.5
Glassprod	2.1	41	-0.1	-1	-0.1	-24	-0.2
Cer tile	6.0	36	-7.0	-1	-7.3	-35	-0.5
Chinearth	5.9	46	-7.7	-3	-7.9	-32	-0.6
Machtools	2.0	60	-0.5	-6	-0.8	-65	-0.5
Bibearing	5.1	54	-1.2	-3	-1.4	-55	-0.4
Opticlins	3.8	48	-0.8	-6	-1.1	-51	-0.7
Costjewel	3.7	50	0.1	0	-0.0	-1	-0.0
Dolls	3.8	55	0.1	0	-0.2	-2	-0.0
Reference sectors:							
Agforfish	-0.2	-21	0.4	91	-0.0	-174	-0.9
Mining	-0.0	-14	0.1	11	0.0	16	0.4
Construct	0.1	0	0.0	36	0.0		
Ndurmfg	-0.2	-132	0.2	133	0.0	388	3.4
Durmfg	-0.1	-368	0.3	626	0.1	2,306	19.8
Trocomut	-0.0	-73	0.2	58	0.0	374	3.6
Trade	0.0	37	-0.0	-742	-11.5		
Fininsre	-0.0	-7	0.1	49	0.0	739	6.2
Services	-0.1	-3	0.2	77	0.0	1,231	29.9

^a Millions of dollars in base year prices. These are the prices which prevailed previous to import restraint removal.

^b Thousands of full time equivalent (FTE) employees.

two-tenths of 1 percent of base-year GNP. The removal of the import restraints causes a depreciation of the nominal exchange rate of approximately 1.3 percent. There is a slight depreciation of the real exchange rate of less than one-tenth of 1 percent. This indicates that the relative price effects of U.S. import restraints outweigh the rent recapture effects by a small amount.

Removal of U.S. import restraints leads to a decline in the wage/rental ratio of less than one-tenth of 1 percent. This reflects the relative labor intensity of production in the heavily protected sectors of the U.S. economy. Household income is composed of both labor and capital incomes, however. As the increase in welfare testifies, the household sector as a whole is better off as a result of the tariff and quota liberalization.

The sectoral effects of removing the import restraints are presented in table II-3. Removal of the tariffs and quotas reduces the prices of the imported goods, causing households to consume more of the imports. For this reason, imports in each focus sector increase. The largest percent increases occur in the

butter, sugar, cheese, and condensed and evaporated milk sectors. In base-year dollar terms, the apparel sector experiences the largest import surge of \$6.6 billion. This is followed by footwear (\$582 million), sugar (\$479 million), and textiles (\$427 million). Viewed from the perspective of potential imports and based on staff estimates of the equivalents of quantitative restrictions embodied in this model, the apparel sector is the most highly protected sector of the U.S. economy.

Imports in the reference sectors of the economy decline. This is a consequence of the depreciation of the exchange rate, which tends to raise import prices, as well as increased domestic production in all but the agriculture, forestry, and fishing, and trade sectors. Most significant here are the declines in imports for the less heavily protected parts of the durable manufacturing and nondurable manufacturing sectors, which experience import declines of \$368 and \$132 million, respectively.

The depreciation of the dollar raises export prices. Some of the focus sectors are in a position to benefit from this change and increase exports. These include cotton, butter, fluid milk, footwear, costume jewelry, and dolls.¹⁸ In addition, exports in each of the reference sectors increase. The largest of these in percentage terms is the agriculture, forestry, and fishing sector, followed by durable manufacturing, services, and nondurable manufacturing. In base-year dollar terms, the largest increases in reference sector exports are for durable manufacturing (\$626 million) and nondurable manufacturing (\$133 million).

Due to increased import competition, domestic production in each of the focus sectors except butter falls.¹⁹ In percentage terms the largest declines are in

¹⁸ While the model results show exports declining in several of the focus sectors, many of these declines are extremely small in both absolute dollar and percentage terms. Given the large number of parameters and the complexity of the modelling involved in the ITC CGE model, caution may be indicated in interpreting such small changes.

¹⁹ The change in butter production is essentially zero. Again, a slight change in some of the parameters in the model could result in declines in butter production as in the other focus sectors.

the ceramic tile and china and earthenware sectors, followed by the sugar sector. In base-year dollar terms, the largest declines in focus sector production occur in apparel (approximately \$1.8 billion) and textiles (approximately \$1.3 billion). With the exceptions of the agriculture, forestry and fishing, and trade sectors, domestic output of the reference sectors increases. In percentage and dollar terms, the largest increase in domestic production is in durable manufacturing. As a result of the import restraint removal, production in durable manufacturing increases by \$2.3 billion. These results demonstrate that protection of the focus sectors is not without costs for the competitive sectors of the economy.

The declines in domestic production in the focus sectors cause accompanying declines in employment. These are expressed in terms of thousands of full-time equivalent (FTE) jobs in table II-3. By far the largest dislocation of workers occurs in the apparel sector, which sheds over 34,000 FTE employees. This is followed by the textile sector which sheds over 8,000 FTE employees. Employment gains are present in the reference sectors except for agriculture, forestry, and fishing, and trade. The largest reference sector employment gains are in services and durable manufacturing with increases of nearly 30,000 and 20,000 FTE employees, respectively.

With respect to sectoral effects, removal of the import restraints generates a significant amount of structural change, particularly with respect to employment. While employment losses are substantial in the textile and apparel sectors, gains are made in the reference sectors, particularly durable manufacturing and services, where the U.S. has a comparative advantage. From the economywide perspective, the current set of U.S. import restraints protects the focus sectors at the expense of other manufacturing sectors and services.

**APPENDIX A
REQUEST LETTER**

MATTHEW G. MORGAN	BOB PACTWOOD OHIO
JOHN S. MCGRAW, NEW YORK	BOB DILLI, KANSAS
JOE MCGRAW	WILLIAM V. RICH, JR., DELAWARE
HOWE WILSON	JOHN C. DANFORTH, MISSOURI
CLY. WYLLIAMS	JOHN H. CHAFFIN, CALIFORNIA
FRANK M. MANN	JOHN H. HARRIS, PENNSYLVANIA
JOE MCGRAW	DAVID M. WALKER, VERMONT
V. GIBBLE, JR., INDIANA	DAVID BURNHAYDORF, MINNESOTA
SCOTT W. W. WEST VIRGINIA	WILLIAM L. ARMSTRONG, COLORADO
JOE SOUTH CAROLINA	

United States Senate

COMMITTEE ON FINANCE

WASHINGTON, DC 20510-6200

JAMES C. GOULD STAFF DIRECTOR AND CHIEF COUNSEL
BO BRADSHAW CHIEF OF STAFF

September 9, 1988

The Honorable
 Anne Brunsdale
 Vice Chairman
 United States International
 Trade Commission
 500 "E" Street, S.W.
 Washington, D.C. 20436

Dear Madam Vice Chairman:

On behalf of the Committee on Finance, I request that the Commission conduct a study pursuant to section 332 of the Tariff Act of 1930 on the economic effects of existing significant U.S. import restraints. The study should include an assessment of the effects on U.S. consumers, on the output and profits of U.S. firms, on the income and employment of U.S. workers, and on the net economic welfare of the United States. The study should assess the direct effect on U.S. industries that are protected by the import restraints and the indirect effects on "downstream" industries that are customers of the protected industries.

The study should consider the effects of significant restraints on U.S. imports, such as voluntary restraints on steel and autos, and the Multifiber Arrangement, whether they result from an Act of Congress, an action taken under the fair trade laws of the United States, such as section 201 investigations, or an international agreement. The study should not include those import restraints resulting from final antidumping or countervailing duty investigations by the ITC and the Department of Commerce or section 337 and 406 investigations by the ITC.

The results of the study should be reported in three phases. The first phase should address the effects of restraints on imports of manufactured products. The second phase should address the effects of restraints on imports of agricultural products and natural resources, and the third phase should address the effects of restraints on services industries. The Committee would appreciate receiving the report for the first phase within one year after receipt of this request, the report for the second phase within two years, and the report for the third phase within three years.

Sincerely,



Lloyd Bentsen

APPENDIX B
FEDERAL REGISTER NOTICE

precleared will have to wait in line and present a valid identification with photograph to the receptionist before they can be admitted to the building.

CLOSED MEETING: Portions of the meeting are closed under Exemption 9B of 5 U.S.C. 552(b) to discuss scopes of work, cost estimates and other sensitive procurement information. Disclosure of such information would be likely to significantly frustrate implementation of future procurements by A.I.D.

FOR FURTHER INFORMATION CONTACT: Dr. Susan Nemeth, Bureau of Science and Technology, Office of Health, Agency for International Development, room 705c, SA-18, Washington, DC 20523, or (703) 875-4993.

Robert Wrin,

Acting Chief, Malaria Vaccine Development Division, Office of Health, Bureau of Science and Technology.

[FR Doc. 90-15474 Filed 7-3-90; 8:45 am]
BILLING CODE 6110-01-01

INTERNATIONAL TRADE COMMISSION

(Investigation No. 337-TA-190)

Certain Softballs and Polyurethane Cores Thereof; Issuance of Limited Exclusion Order

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has issued a limited exclusion order under 19 U.S.C. 1337(d) to prevent the unauthorized importation into the United States of leather-covered softballs having polyurethane cores made or sold by Success Chemical Co., Taipei City, Taiwan, which infringe claim 3 of U.S. Letters Patent 3,970,295.

FOR FURTHER INFORMATION CONTACT: Weyna W. Herrington, Esq., Office of General Counsel, U.S. International Trade Commission, 500 E Street, SW., Washington, DC 20438, telephone 202-252-1082. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-252-1810.

ADDRESSES: Copies of the limited exclusion order, the Commission

Opinion relating thereto, and all other nonconfidential documents on the record of the investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, SW., Room 112, Washington, DC 20438, telephones 202-252-1000.

SUPPLEMENTARY INFORMATION: On September 22, 1988, the presiding administrative law judge (ALJ) issued his final initial determination (ID) finding a violation of section 337 in this investigation. Complainant, Lannom Manufacturing Co., Inc., and the Commission investigative attorney (IA) petitioned for review. On November 23, 1988, the Commission determined to review the ID on various issues. The Commission solicited written submissions from the parties to the investigation, other Federal agencies, and interested members of the public on the issues under review and on the questions of remedy, the public interest, and bonding. The Commission received submissions from all the active parties. A reexamination proceeding with respect to the patent in controversy concluded at the U.S. Patent and Trademark Office on April 10, 1990.

After considering the submissions and examining the record developed during the investigation, the Commission determined that there was a violation of section 337, and that the appropriate remedy for the violation of section 337 was issuance of a limited exclusion order.

The Commission also determined that the public interest considerations listed in subsection (d) of section 337 do not preclude issuance of a limited exclusion order and that while the order is under review by the President pursuant to subsection (j) of section 337, the excluded articles will be entitled to enter the United States under a bond in the amount of 32 percent of the articles' entered value.

The authority for the aforesaid Commission determinations and the limited exclusion order is contained in 19 U.S.C. 1337, as amended by the Omnibus Trade and Competitiveness Act of 1988, and in sections 210.53-58 of the Commission's Interim Rules of Practice and Procedure.

By order of the Commission.

Issued: June 28, 1990.

Kenneth H. [Signature] 9- TT 06.
Secretary.

[FR Doc. 90-15474 Filed 7-3-90; 8:45 am]
BILLING CODE 7050-01-01
U.S. INTL TRADE COMMISSION
OFFICE OF THE SECRETARY
RECEIVED

(Investigation No. 332-282)

The Economic Effects of Significant U.S. Import Restraints Phase III: Services

AGENCY: United States International Trade Commission.

ACTION: Scheduling of hearing and request for comments in connection with phase III of the investigation.

FOR FURTHER INFORMATION CONTACT: Kyle Johnson (202) 252-1229, or Donald Rouslang (202) 252-1223, Research Division, Office of Economics, U.S. International Trade Commission, Washington, DC 20438.

BACKGROUND: The Commission instituted investigation No. 332-282 following receipt of a letter dated September 8, 1988, from the Senate Committee on Finance. The Committee requested that the investigation be conducted in three consecutive annual phases addressing the effects of significant U.S. import restraints on (1) imports of manufactured products, (2) imports of agricultural products and natural resources, and (3) service industries. The Commission has submitted its report on phase I on September 11, 1988. Notice of the institution of the investigation and of the hearing and other matters related to phase I was published in the Federal Register of October 19, 1988 (53 FR 4071). Notice of the investigation and hearing related to phase II appeared in the Federal Register of October 4, 1989 (54 FR 40815).

As requested by the Committee, the phase III report (like the reports on the other two phases) will include an assessment of the effects on U.S. consumers, on the output and profits of U.S. firms, on the income and employment of U.S. workers, and on the net economic welfare of the United States. It will assess the direct effect on U.S. industries that are protected by the import restraints and the indirect effects on "downstream" industries that are customers of the protected industries. In addition, this report will contain an analysis of the effects of the simultaneous removal of all significant barriers to imports of goods and services.

This phase will focus on U.S. restraints to imports of services, whether the restraints result from an Act of Congress, an action taken under the fair trade laws of the United States, such as section 201 of the Trade Act of 1974, or an international agreement. However, the report will not cover those import restraints resulting from final antidumping or countervailing duty

investigations by the ITC and the Department of Commerce, investigations by the ITC under section 337 of the Tariff Act of 1930, or section 406 of the Trade Act of 1974, or investigations by the U.S. Trade Representative under section 301 of the Trade Act of 1974.

PUBLIC HEARING: A public hearing in connection with the third phase of this investigation will be held in the Commission Hearing Room, 500 E Street, SW., Washington, DC 20436, beginning at 9:30 a.m. on March 6, 1991. All persons 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 noon, February 20, 1991. The deadline for filing prehearing briefs (original and 14 copies) is February 20, 1991.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the matters to be addressed in the report. Commercial or financial information that a party 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 § 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 for inspection by interested persons in the Office of the Secretary to the Commission. To be assured of consideration by the Commission, written statements relating to the Commission's report and post-hearing briefs should be submitted at the earliest practical date and should be received no later than March 20, 1991. All submissions should be addressed to the Secretary to the Commission at the Commission's office in Washington, DC.

Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 252-1310.

By order of the Commission.
Dated: June 28, 1990.

Kenneth R. Mason,
Secretary.

[FR Doc. 80-13340 Filed 7-3-90; 8:45 am]
BILLING CODE 7030-02-01

[Investigation No. 337-TA-306]

Certain Bath Accessories and Component Parts Thereof; Commission Determination Not To Review Initial Determination Terminating Investigation on the Basis of a Consent Order Agreement; Issuance of Consent Order

AGENCY: U.S. International Trade Commission.
ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined not to review the presiding administrative law judge's (ALJ) initial determination (ID) in the above-captioned investigation terminating the investigation on the basis of a consent order.

FOR FURTHER INFORMATION CONTACT: Scott D. Anderson, Esq., Office of the General Counsel, U.S. International Trade Commission, telephones 202-252-1099.

SUPPLEMENTARY INFORMATION: On May 10, 1990, all of the private parties in the investigation filed a joint motion to terminate the investigation on the basis of a proposed consent order. On May 23, 1990, the presiding ALJ issued an ID (Order No. 3) terminating the investigation on the basis of the proposed consent order. No petitions for review of the ID, or agency or public comments were filed.

This action is taken under the authority of section 337 of the Tariff Act of 1930, 19 U.S.C. 1337, and Commission interim rule 210.53(h), 19 CFR 210.53(h).

Copies of the consent order, the nonconfidential version of the ID, and all other nonconfidential documents filed in connection with this investigation are available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436, telephone 202-252-1000. Hearing-impaired persons are advised that information on the matter can be obtained by contacting the Commission's TDD terminal on 202-252-1810.

By order of the Commission.
Issued: June 28, 1990.

Kenneth R. Mason,
Secretary.

[FR Doc. 80-13342 Filed 7-3-90; 8:45 am]
BILLING CODE 7030-02-01

[Investigations Nos. 731-TA-439 Through 444 (Final)]

Industrial Nitrocellulose From Brazil, Japan, the People's Republic of China, the Republic of Korea, the United Kingdom, and West Germany

Determinations

On the basis of the record¹ developed in the subject investigations, the Commission unanimously determines, pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) (the act), that an industry in the United States is materially injured by reason of imports from Brazil, Japan, the People's Republic of China, the Republic of Korea, the United Kingdom, and West Germany of industrial nitrocellulose,² provided for in subheading 3912.20.00 of the Harmonized Tariff Schedule of the United States (previously classified in item 445.25 of the former Tariff Schedules of the United States), that have been found by the Department of Commerce to be sold in the United States at less than fair value (LTFV).

Background

The Commission instituted these investigations effective March 1, 1990, following preliminary determinations by the Department of Commerce that imports of industrial nitrocellulose from Brazil, Japan, the People's Republic of China, the Republic of Korea, the United Kingdom, and West Germany were being sold at LTFV within the meaning of section 733(a) of the act (19 U.S.C. 1673(a)). Notice of the institution of the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of March 15, 1990 (55 FR 9781). The hearing was held in Washington, DC, on May 29, 1990, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission transmitted its determinations in these investigations to the Secretary of Commerce on June 28, 1990. The views of the Commission are

¹ The record is defined in sec. 207.2(h) of the Commission's Rules of Practice and Procedure (19 CFR 207.2(h)).

² Industrial nitrocellulose is a dry, white, amorphous synthetic chemical with a nitrogen content between 10.5 and 12.5 percent, which is produced from the reaction of cellulose with nitric acid. Industrial nitrocellulose is used as a film-former in coatings, lacquers, furniture finishes, and printing inks. The scope of these investigations does not include explosive grade nitrocellulose, which has a nitrogen content of greater than 12.5 percent.

**APPENDIX C
CALENDAR OF PUBLIC HEARING**

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CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject : THE ECONOMIC EFFECTS OF SIGNIFICANT
U.S. IMPORT RESTRAINTS PHASE III:
SERVICES

Inv. No. : 332-262

Date and Time : March 6, 1991 - 9:30 a.m.

Sessions were held in connection with the investigation in the Main Hearing Room 101 of the United States International Trade Commission, 500 E Street, SW, in Washington, DC.

WITNESS AND ORGANIZATION

The Institute of Chartered Accountants
in England and Wales
The Institute of Chartered Accountants
of Scotland
The Institute of Chartered Accountants
in Ireland

Frank Harding, Council member of the Institute
of Chartered Accountants in England and Wales
Chairman, International Affairs Committee;
also United Kingdom and Irish representative,
Council of the International Federation of
Accountants

John Williams, Director, International Affairs,
Institute of Chartered Accountants in England
and Wales

WITNESS AND ORGANIZATION

American Branch of the Chartered Association
of Certified Accountants
Los Angeles, CA

R. Castleton, F.C.C.A.
Partner, Accounting Plus
New York

Dr. S.E.C. Purvis, F.C.C.A.
Member of the faculty,
School of Accounting
University of Southern California

M. Sleight, Overseas Relations Secretary
Chartered Association of London



APPENDIX D
ECONOMIC COSTS OF THE JONES ACT

APPENDIX D ECONOMIC COSTS OF THE JONES ACT

This appendix explains the model developed by Commission staff to measure the economic costs and effects of the Jones Act. These costs are presented in tables I-2-7, I-2-8, and I-2-9 of chapter 2. This appendix first presents estimates of price and cost wedges. The geometry and underlying algebra of the model used to estimate the costs and effects is then discussed. The exercise employed involves removal of the Jones Act. The resulting potential welfare gains are those presented in chapter 2 as the cost of maintaining the Jones Act restrictions in their current form.

Cost and Price Wedges

To examine the effects of removing the Jones Act on the maritime freight transport sector in 1988, the Commission conducted a comparative static exercise using a partial equilibrium model. This section presents tariff equivalents of the Jones Act. In the Commission model, the price differential between the U.S. domestic shipping rate and the world shipping rate that is attributed to the Jones Act is represented as an ad valorem premium above world prices. Therefore, removing the tariff equivalent causes the cabotage sectors in the model to react in the same manner as removing the Jones Act. The estimate for the 1988 tariff equivalent for liquid cargo, as a percentage of the world price, was 99 percent. The 99-percent tariff equivalent for U.S. cabotage of wet cargo is the weighted average of the price differential between U.S. and world shipping rates charged by oil tankers in 1988, as estimated by Commission staff. For both the world and U.S. domestic shipping rates, the average rate was calculated on a per ton-mile basis for a selected number of shipments that were roughly equivalent with respect to distance (between 4,500 and 7,400 miles) and the type of petroleum transported. The price wedge for dry cargo is based on the range of estimates found in the literature of the price differential between U.S. and world shipping rates for dry-bulk

cargoes and cargoes carried by liner mode, which suggests a price premium lower than that for wet cargo. The analysis used a value of 40 percent.¹

Underlying the substantial differences between the price of shipping services in the cabotage markets and world prices, there is also evidence that U.S. producers are not competitive by world standards, with practically all components of costs for U.S. shippers being higher than for foreign shippers.² Some of these costs are a result of the Jones Act itself, which requires U.S. shippers to purchase U.S. manufactured ships if they are to serve Jones Act markets. The crewing requirements also result in higher labor costs for ships engaged in Jones Act trade.

While estimates of the markup in domestic shipping prices over world prices are 99 percent for liquid cargo and 40 percent for dry cargo, the available evidence on the difference between world and domestic costs of production suggest an average cost premium above world prices that is much lower, in the range of 33 percent for liquid cargo and 19 percent for dry cargo. The difference between the cost and price wedges is not surprising, given that the cost wedge is based on average costs, while the price wedge is measured at the margin.

The Geometry of the Model

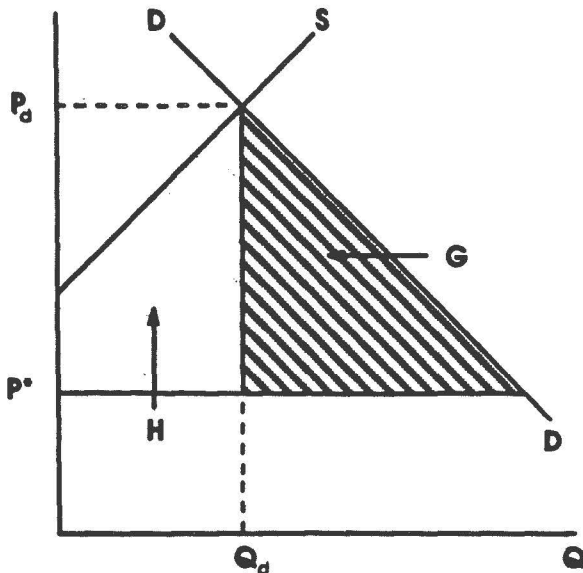
The effect of removal of the Jones Act can be represented as in figure D-1. In the figure, world prices are P^* , while domestic supply is represented by the line S . Under the Jones Act prohibition, equilibrium is at the intersection of the line S and the demand curve DD . Removal of the Jones Act restrictions leads to a fall in prices from P_d to P^* . When this occurs, the production efficiency gain that results is measured by the area H . This represents the increase in real GDP that results as more resources are

¹ See Whitehurst, *American Domestic Shipping*, p. 27; and Alaska Statehood Commission, *The Jones Act and Its Impact on the State of Alaska*, 1982.

² See OTA, *An Assessment of Maritime Trade and Technology*, p 66. OTA cites evidence that new construction costs for U.S. ships may be 2 to 2.5 times higher in U.S. shipyards than in foreign ship yards. Labor and other operating costs are higher as well. Also see Alaska Statehood Commission, *ibid.*, especially pages 42-49.

reallocated from the cabotage sector to more productive uses. In addition, there are additional welfare gains and a further boost in real GDP as a result

Figure D-1
The effects of the Jones Act



How removing the Jones Act restrictions effects consumers of shipping services and domestic providers of shipping services can also be determined from Figure D-1. Consumers of shipping services gain because they pay a lower price for the quantity of services they purchase in the presence of the restrictions and because they increase the quantity purchased as the price declines when the restrictions are removed. The total increase in consumer welfare is area G plus the rectangle bounded by the vertical axis, P_d , Q_d , and P^* . Domestic providers of shipping services have losses equal to the area of the rectangle minus area H.

The Algebra of the Model

We represent the demand for cabotage services in each of the cabotage markets, dry cargo and liquid cargo, by the equation of the decline in cabotage

prices. In the figure, these gains are measured by area G, which is the net consumer welfare increase.

$$[1] \quad Q_j = k_j P_j^{-e_j}$$

where Q denotes quantity, P denotes price, e denotes the elasticity of demand, k is a constant, and j denotes the liquid and dry cargo markets. The production efficiency gain reported in chapter 2 is based on the average cost wedges discussed above, and hence are from published accounting cost studies.

The gain to consumers following the removal of the Jones Act is derived from equation [1]:

$$[2] \quad CS_j = \int_{P_{0j}}^{P_{1j}} k_j P_j^{-e_j} dP \\ = (e_j / (e_j + 1)) (1/k_j) [P_{1j} Q_{1j} - P_{0j} Q_{0j}]$$

where CS_j represents the increase in consumer surplus in subsector j, and the subscripts 0 and 1 represent prices and quantities before and after liberalization. Area G is simply CS_j less $(P_{1j} - P_{0j}) Q_{1j}$.

At the margin, the products that are likely to benefit from lowered transport prices are those that can be easily shifted from other forms of transportation, such as rail and road transport. Because of the degree of substitutability between rail, truck, and other forms of bulk transportation, we expect the elasticity of demand for cabotage services to be high. For this reason, the effects estimates reported in the table assume low, medium, and high elasticity of demand values of 3.5, 4.5, and 5.5.

Downstream effects are estimated in several steps. First, from the USITC social accounting matrix (SAM)³ and supplemental data from the 1987 Census of Transportation, cost shares were estimated for nine composite downstream sectors. Of these aggregate sectors, only those reported in Table I-2-8

³ The ITC social accounting matrix is discussed in part II of this report.

were identified as sectors where cabotage prices had a discernable effect on average total costs. For these sectors, we utilized the price wedge data discussed above, combined with cost share data from the SAM, to estimate the proportional reduction in cost θ that follows liberalization of trade in cabotage services. Given demand and supply elasticities e_d and e_s ,⁴ the proportional change in downstream demand is then measured as

$$[3] \quad (1 - \theta)^{-e_d e_s / (e_d - e_s)} - 1.$$

Changes in labor employment are then estimated assuming fixed labor input coefficients. Employment levels are also based on the USITC SAM.

⁴ Elasticity estimates are taken from J.D. Richardson and J.H. Mutti, "Industrial Displacement through Environmental Controls: The International Competitive Aspects," in I. Walter (ed.) *Studies in International Environmental Economics* (New York: John Wiley, 1975), 57-102.