NONTARIFF BARRIERS TO INTERNATIONAL TRADE IN STEEL

Thesis for the Degree of Ph.D.

Michigan State University

CRAIG ROBERT MACPHEE

1970

This is to certify that the

thesis entitled

NONTARIFF BARRIERS TO INTERNATIONAL TRADE IN STEEL

presented by

Craig Robert MacPhee

has been accepted towards fulfillment
of the requirements for

Ph. D. degree in Economics

Mordechai Kreinin
Major professor

Date May 15, 1970

ABSTRACT

NONTARIFF BARRIERS TO INTERNATIONAL TRADE IN STEEL

By

Craig Robert MacPhee

This dissertation deals with the influence of nontariff restrictions on international trade in steel. In particular, the study estimates the value of steel imports excluded by nontariff barriers in each of the major Free-World steel-trading countries. The main steel traders include Belgium, Canada, France, West Germany, Italy, Japan, Luxembourg, Netherlands, the United Kingdom and the United States.

The definition of nontariff barriers used here covers any import restriction subject to government control, with the exception of duties. The nontariff devices for import control consist of (1) foreign trade policy measures like quantitative restrictions, antidumping regulations, biased government procurement, import surcharges, and export subsidization; (2) administrative practices on the part of customs authorities; (3) internal policies such as domestic subsidization, taxation, and national security restrictions; and (4) restrictive business practices which governments usually police.

The results of an intensive investigation of 39 specific nontariff barriers appears in the appendix to this study. As indicated there, the potential restrictiveness of each

barrier varies markedly with the product and country under consideration. Nevertheless, it can be seen that in one or another of the ten major steel-trading countries steel imports are excluded by 34 different nontariff barriers. The only barriers that steel has avoided to any extent are those erected by internal policies. France appears to impose the most restrictions on steel and Canada the least. However, the height of most of these barriers cannot be precisely determined, because only a few of them can be expressed in numerical terms.

Focusing on the few barriers which can be quantified, this study describes the equivalence of nontariff barriers and advalorem tariffs. This strong similarity is based on the import-domestic price differential which all restrictions create. Given this equivalency, the differentials caused by quantified nontariff restraints are estimated and expressed in terms of advalorem tariff-like rates.

Estimates of the advalorem rates of some nontariff barriers and the restrictiveness of all these restraints require knowledge of demand and supply elasticities for both domestic and foreign trade in steel. Consequently, this study presents statistical estimates of the elasticity of the United States import demand for steel, as well as other estimates of foreign import demand elasticities. In addition domestic supply and demand, and export supply and demand elasticities are derived.

Craig Robert MacPhee

Information on quantified nontariff barriers, elasticities and the current value of steel imports of the ten main steel traders are employed in estimating the value of steel imports excluded. The results indicate that the United States keeps out the largest amount of steel imports in absolute terms as well as the largest amount relative to current imports. However, in relative terms the United States is closely followed by Japan, the United Kingdom, and Canada. Another comparison finds the few nontariff barriers quantified in this study to be more restrictive than tariffs in at least five of the ten major steel-trading countries.

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Craig Robert MacPhee

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Economics

1970

ACKNOWLEDGMENTS

Heartfelt thanks go to my family, friends and teachers for their help and encouragement. In particular, my wife, Kathleen, and my advisor, Professor Mordechai E. Kreinin, deserve special credit.

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CHAPTER ONE
INTRODUCTION

I. The Steel Trade Reversal and Its Causes.

This dissertation deals with the influence of nontariff restrictions on international trade in steel. Immediately following World War II, this trade consisted primarily of large United States exports of steel to Japan, and to European countries in the midst of economic reconstruction. In the late 1950's, however, the flow of trade in this basic industrial commodity reversed itself and the United States became a net importer of iron and steel mill products. Although United States steel exports have increased in 1969, the Americans are still net steel importers.[1]

Many reasons have been cited for this trade reversal.[2] They include such comparative advantage considerations as relative factor endowments, the state of technology, and allocative efficiency, or alternatively the variability of demand, and differences in trade restrictions. Import duties have long been at the center of attention in discussions of international trade restrictions on steel, as well as other goods. But recently, the importance of many other import control devices has become increasingly apparent. It is the specific purpose of the present study to estimate the

restrictiveness of nontariff barriers hindering trade in steel among the major Free-World steel traders.

II. The Importance of Nontariff Barriers.

Part of the increased importance of nontariff restrictions is due to their absolute growth. According to Bidwell, this growth received its original impetus from (1) the popularization of protectionism as a principle of our international commercial policy, and (2) the increased government regulation of industry and commerce.[3] Protectionist foreign trade policies culminating in the Hawley-Smoot Tariff of 1930 led to higher tariffs which in turn caused the development of complex customs law and procedure. Government restrictions on imports for the protection of the health and security of the population resulted in the proliferation of other customs regulations, some of which "concealed a measure of economic protection."[4] Nontariff barriers have also grown in number as they were substituted for tariffs lowered in formal negotiations following 1933.[5]

Apart from their absolute increase in importance, nontariff barriers have also become relatively more significant vis a vis tariffs. As Kelly predicted, the lowering of import duties has caused existing nontariff measures, which only marginally affected trade when coupled with tariff protection, to become formidable obstacles to foreign commerce.[6]

III. The Need for Quantitative Analysis of Nontariff Barriers.

Economic literature on the subject of nontariff restraints has not kept pace with their growth. Early studies first centered their attention on quotas, which came into wide use in the 1930's. These were excellently analyzed by Heuser, who first demonstrated the monopoly effect of a quota.[7] The French were the first to develop quotas in this century, and their experience was reviewed by Haight.[8] Bidwell's The Invisible Tariff described other restrictions on imports, such as customs complexities, laws against unfair-competition, countervailing duties and export subsidies, voluntary quotas, health and safety restrictions, and federal and state "Buy-American" laws.[9] State trading or monopolization of certain sectors of the economy has been analyzed in the extreme case by Viner.[10] The subtleties of some government procurement practices which discriminated against imports were described by Grunzel.[11] Examples of the arbitrary administration of marking requirements are cited in de Haas' The Practice of Foreign Trade.[12] The first consideration of nontariff border taxes was by Whittlesey.[13]

Since the period of these early publications on the subject, economic literature on nontariff barriers has persistently presented institutional descriptions of the restraints without analyzing their effectiveness. A recent contribution by Massel follows the established pattern.[14] He attributes the failure to estimate their restrictiveness to analytical

problems created by unmeasurable institutional factors surrounding the subtle workings of nontariff restrictions. These include the covertness of many administrative practices, and the uncertainty of arbitrary changes in the regulation of imports. A more recent and comprehensive review of nontariff barriers has been written by Kelly.[15] To Massel's two analytical problems, he adds the difficulties of expressing the degree of discrimination against foreign goods in numerical terms.[16] Small wonder, then, that Johnson found these restrictions still lying in the "areas of ignorance" in 1967. According to him, "while a great deal has been said about the importance of nontariff barriers to trade, . . . the effects of these barriers remain to be quantified."[17]

Despite the analytical problems cited by Massel and Kelly, and the resulting dearth of quantification found by Johnson, the restrictive effects of some barriers have been estimated.[18] This study also attempts to make such estimates for nontariff restrictions on steel.

IV. Definition of Nontariff Barriers.

Their appellation suggests that nontariff barriers are broadly defined in a negative sense as any import restriction besides tariffs. Massel does not attempt a more specific definition, because of the unlimited variety of forms these bulwarks against imports may take. He describes a moderate number of types, such as quotas, customs adminstration, anti-dumping laws, patent and trademark laws, health and safety

rules, labelling requirements, domestic preferences in government procurement, subsidies to domestic suppliers, taxes, import permits, export controls, and restrictive business practices.[19]

Kelly, on the other hand, gives a positive, specific definition of nontariff barriers but confines it to government restrictions on imports excluding restrictive private practices and other barriers erected by language, geography, history, and culture. Moreover, he would include only those government practices which have the purpose and/or effect of protecting domestic producers from foreign competition. On this basis, Kelly would exclude monetary and fiscal policies, as well as legislation governing public wealth, morals, and national security. However, as Kelly himself points out, the excluded items could be regarded as nontariff barriers if they were abused.[20] In order to minimize the risk of overlooking any restriction cloaked in a guise of respectability, a broad definition of nontariff barriers is used in this study. It covers any restriction subject to government control. Thus, the definition excludes natural barriers, but retains specific monetary and fiscal policy measures applied to steel, and those restrictive business practices regulated by government policy.[21]

Although Bidwell, Massel, Kelly, and others list many types of barriers, there have been only three recent attempts to list all the types of barriers included in the broad

definition of nontariff restrictions used here. The first attempt was made by the Secretariat of the United Nations Conference on Trade and Development (UNCTAD) in 1963; their list appears in Figure 1. A second list was compiled by the United States Department of Commerce in 1966, and appears in Figure 2. A synthesis of these inventories of nontariff barriers, which appears in Figure 3, was used to find which restrictions existed and which applied to steel imports in each of the major steel-trading countries.[22]

V. The Countries To Be Considered.

The nontariff barriers of five major steel-trading areas are analyzed below, since they account for about 80 percent of the production and 90 percent of the exports of the Free World.[23] The major steel traders include Canada, the European Economic Community, Japan, the United Kingdom, and the United States. However, because EEC members have different nontariff restrictions, (despite their common tariffs) each member country's barriers are analyzed separately. Thus, the present study estimates the value of total imports excluded by the nontariff barriers of the United States and nine foreign countries: Belgium, Canada, France, West Germany, Italy, Japan, Luxembourg, Netherlands, and the United Kingdom. Similar estimates are made for the amount of each major steel trader's exports restricted by the nontariff restraints of the others.

Besides their dominance of Free World trade in steel, the ten nations listed above bear other similarities. All the

Foreign trade policies
Licensing requirements
Quota restrictions
Negotiated export limitations
Foreign exchange restrictions
State trading
Procurement policies favoring domestic products
Antidumping and similar regulations
Subsidies to exports

Administrative practices
Classification of goods for customs purposes
Documentary, marking, and packaging requirements
Incomplete or delayed publication of customs information

Internal economic policies affecting imports
Internal taxes for revenue purposes
Taxes applied to imports to compensate for indirect taxes borne by comparable domestic goods
Pricing policies and price control regulations
Restrictions on advertising of goods

Internal health and safety regulations affecting imports
Sanitary regulations
Technical specification requirements
Regulations applied for national security reasons

Source: UNCTAD Secretariat, Measures for Expansion of Markets in Developed Countries for the Exports of Manufactures and Semi-Manufactures of Developing Countries, (United Nations Conference on Trade and Development, E. Conf. 46/PC/20; May 6, 1963.

Figure 1
Nontariff Barriers to Trade in Manufactures

Customs law
Regulations governing the right to import (e.g., licensing)
Valuation and appraisement of imported goods
Classification of goods for customs purposes
Marking, labeling and packaging requirements
Documentary requirements (including consular invoices)
Measures to counteract disruptive marketing practices, e.g., anit-dumping and countervailing duties
Penalties (for example, fees charged for mistakes on documents)
Fees assessed at customs to cover cost of processing (handling) goods
Administrative exemptions (for example, administrative authority to permit duty-free entry of goods for certain purposes)
Treatment of samples and advertising material
Prohibited and restricted imports (embargoes and quotas)
Administration of customs law provisions (delay in processing goods, inadequate or delayed publication of customs information)

Other legislation specifically applicable to imports
Taxes (e.g., excise, turnover)
Restrictions imposed to protect individual industries (e.g., quotas)
Exchange controls: foreign exchange may be allocated only for imports for certain types of merchandise
Restrictions applied for national security reasons (other than under customs law)
State trading (or the operation of enterprises granted exclusive or special import privileges)
Sanitary regulations (other than under customs law)
Food, drug, cosmetic and pharmaceutical regulations
Patent, trademark and copyright regulations
Shipping and insurance regulations

Other legislative and administrative trade barriers
Government purchasing regulations and practices
Domestic price control regulations
Restrictions on the internal sale, distribution, and use of products
Screen quotas and other restrictions affecting motion picture film and TV program material
Specifications, standards, and safety requirements affecting such products as electrical equipment, machinery, and automobiles
Internal taxes that bear more heavily on United States goods than on domestic products (for example, automobile taxes in Europe based on horsepower rating)
Restrictions on advertising of goods
Restrictions on display of goods at trade fairs and exhibitions

Source: United States Department of Commerce as printed in Senate Finance Committee, Steel Import Study, op. cit., pp. 48, 49.

Figure 2
Nontariff Barriers

Foreign trade policies
Licensing requirements
Quota restrictions
Negotiated export limitations
Foreign exchange restrictions
State trading
Domestic biased procurement
Antidumping regulations
Export subsidies
Shipping and insurance regulations
Import surcharges

Administrative practices
Classification of goods for customs
Documentary requirements
Marking requirements
Penalties for procedural errors
Prior deposit requirements
Import valuation procedure
Customs fees
Treatment of samples and advertising

Internal policies and regulations
Domestic subsidies
Direct taxes
Indirect taxes
Price controls
Restrictions on advertising
Patent, trademark, and copyright laws
Credit controls
Sanitary regulations
Technical specification requirements
National security restrictions

Private practices
Freight rate discrimination
Exclusive supply agreements
Other steel cartel activity

Figure 3
Nontariff Barriers to Trade

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major steel-trading countries, for instance, are highly industrialized, with the share of manufacturing in total employment ranging from about 20 percent in Italy and Japan to 40 percent in the United Kingdom.[24] The percentage of the national manufacturing labor force engaged in the iron and steel industry displays some differences among the several countries: 6.2 percent in the United States, 5.0 percent in the United Kingdom, 2.6 percent in Canada, 5.0 percent in France, 2.7 percent in Italy, and 4.4 percent in Japan.[25]

Other differences among industrial structures are found in studying the average absolute size of the 20 largest steel plants in each of several countries. Foreign steel mills are generally smaller than those of the United States, ranging from less than one-tenth the size in Canada and Italy, to almost one-half in France; the United Kingdom plants are about one-third the United States size, while Japan's are one-fifth.[26] Nevertheless, structural similarities among the major steel industries are indicated by comparing concentration ratios. For the period between 1958 and 1960, several ratios have been computed.[27] They show that in both Japan and the United States, the two largest firms accounted for about 40 percent of output. The same market share was claimed by the largest four firms in Britain, the largest three in France, and the largest one in Canada and Italy. In all the major steel-trading countries, concentration is greater in the production of primary forms than in advanced fabrication.

Of course, these comparisons between the United States and other countries may differ now, because of declining concentration in the United States industry,[28] and increasing merger activity in Europe and Japan.[29]

Another qualification of firm concentration ratios stems from the fact that in France, Belgium-Luxembourg, and Germany, steel firms are controlled by interlocking groups composed of large producers and governments.[30] The groups may be holding companies, interlocking directorates, or members may be parties to long-term contracts. Six French groups controlled 76 percent of French steel production in 1958; the Belgian Societe Generale controls 36 percent of Belgian capacity and has an interest in 87 percent of Luxembourg and 23 percent of Saar capacity. The Italian state controls 55 percent of crude steel production in Italy. In the Netherlands, Hoogovens produces three-quarters of the crude steel and controls 100 percent of the finished steel production, plus one of the largest steel producers in Germany. Despite the Allied Forces' deconcentration program during post-World War II occupation, eight groups controlled 99 percent of Ruhr, and 85 percent of German, production in 1959, as compared with the six groups which controlled about the same shares in 1930.[31]

VI. The Plan for Analysis of Nontariff Barriers.

The four appendices to this study present a comprehensive examination of every nontariff barrier listed in Figure 3. Appendix 1 reviews those classified as foreign economic

policies; Appendix 2: customs procedures; Appendix 3: domestic policies which may affect imports; and Appendix 4: private commercial practices which may be restrictive. The nontariff barriers imposed on steel imports receive detailed consideration, but restrictions on all products are noted in order to determine whether steel is more or less restricted than other products.

Chapter 2 of this study begins by summarizing the nontariff barriers examined in the appendices. Where possible, nontariff barriers are then converted to a tariff-like advalorem rate as a percent of the import price. Many important restrictions, however, are not amenable to such a transformation. Consequently, the study attempted to use rankings of the restrictiveness of each country's nontariff barriers to establish minimum values for nonquantifiable restrictions. However, the ranks (obtained by questionnaire) were incomplete, and in some cases inconsistent with quantified data. As a result, this study confines itself to estimating the restrictiveness of the quantifiable nontariff restraints.

Estimates of domestic, import, and export demand elasticities for the United States and the nine foreign countries are derived in Chapter 3. The same chapter also presents alternative estimates of steel supply elasticities for the United States and the rest of the world. These elasticities are then employed to estimate the value of steel imports excluded by each country's nontariff barriers in Chapter 4.

VII. Sources of Information on Nontariff Barriers.

Nontariff restrictions are fast becoming a popular topic in a variety of publications. Most of the discussions, however, are too general for estimation of their restrictive effect on one industry. Indeed, the specific information necessary for quantification is so scattered that the researcher is forced to sift through an unusually large amount of printed matter. Even the small fruits of this labor may spoil soon after because unannounced changes in these restrictions are easy to make. The lack of international agreements or legislative statutes and the prevalence of administrative policies facilitate frequent and covert adjustments.

Information on nontariff barriers was obtained from five different types of sources:

A. Government publications.
B. Other organizations concerned with steel or international trade.
C. Newspapers, periodicals and books.
D. Private correspondence.
E. Questionnaires.

A. Government Publications.

Most foreign governments prefer not to provide information on their nontariff restrictions, a practice which creates more uncertainty for importers and denies raw material for empirical research. The few official documents that do exist are also hard to obtain. Nevertheless, this study had access to several useful foreign government sources, such as Belgian tariff schedules which provided data on border tax adjustments, and

a variety of publications from the Canadian Department of Trade and Commerce, Tariff Board, and House of Commons.

In contrast to other major steel-trading countries, the United States Government generates a considerable amount of data on domestic and foreign barriers to world trade. The Federal Maritime Commission, for instance, publishes information on ocean freight rates. The Bureau of Customs is the prime source of United States import regulations, while the Department of Commerce describes foreign import requirements in its Overseas Business Reports and International Commerce. The Congressional Record contains a valuable comparative study of foreign government purchasing practices. Joint Economic Committee hearings on Steel Prices, Unit Costs, Profits and Foreign Competition. Discriminatory Ocean Freight Rates and the Balance of Payments, Trade Restraints in the Western Community, The Future of United States Foreign Trade Policy, and The Impact of Military Supply--all report on non-tariff barriers to many imports, including steel. Similarly the Senate Finance Committee report on Steel Imports and hearings on Senate Resolution 149 give specific details on foreign steel restrictions. A few of the four thousand pages of testimony on Foreign Trade and Tariff Proposals before the House Ways and Means Committee also provide specific details on barriers to steel.

B. Other Organizations.

Steel importers and producers in most of the ten countries considered in this study have formed a variety of associations

to support their various interests. As a by-product, these industry organizations generate some useful information. The American Iron and Steel Institute, for instance, publishes numerous articles on foreign trade barriers in its Steelways and Steel Facts magazines, and has even prepared a small book on the subject, entitled The Steel Import Problem. Similarly, valuable observations concerning United States barriers appear in the West Coast Metal Importers' Association Newsletter, and reports by the American Institute for Imported Steel. The British and Japanese iron and steel federations were important foreign sources.

Many other private organizations primarily concerned with international trade also provided data on nontariff restrictions, though they could give few specifics on steel. Sources of this type include the Customs Cooperation Council, International Chamber of Commerce, American Importers' Association, Committee for a National Trade Policy, United States-Japan Trade Council, and the Canadian-American Committee.

In addition to private associations, many official international organizations are good sources. The Organization for Economic Cooperation and Development, for example, publishes an annual report on world steel production, prices, and trade called The Iron and Steel Industry in 1967 and Trends in 1968, as well as Government Purchasing in Europe, North America and Japan: Regulations and Procedures, and an extremely useful report on Border Tax Adjustments and Tax Structures in the

OECD Member Countries. The European Economic Community also provides information on nontariff barriers to steel through its Official Journal, European Community, ECSC Bulletin, and European Parliament Documents. The International Monetary Fund issues an annual report on exchange restrictions, and the GATT prints studies on Restrictive Business Practices and Antidumping and Countervailing Duties. The European Free Trade Association is another source for barriers, while the United Nations publishes more statistics on steel.

C. Newspapers, Periodicals, and Books.

The Wall Street Journal and The Economist carried several general articles about nontariff barriers and the United States steel import situation. General news periodicals, like Time; business publications, such as Foreign Commerce Weekly, Industrial Canada, Fortune, and Business Week; and steel-oriented magazines like The Iron Age, The American Metal Market, and The Japan Metal Trade Bulletin--all contained material relevant to this study.

Besides these journalistic sources, a variety of professional articles and books on both the steel industry and nontariff barriers have been published. The professional articles appear in both economic and law journals, the latter specializing in the analysis of statutory barriers such as the Buy-American Act. Articles in economic journals, on the other hand, have confined themselves to estimating the aggregate effects of differences in border-tax adjustments and import

valuation practices, or the impact of quotas, licenses, exchange restrictions, surcharges, and custom's deposits on the total balance of payments. Steel industry studies have confined themselves to technological considerations and the response of United States producers to increased imports. Books on the steel industry, both domestic and foreign, include important works by Burns, Hexner, and Lister. Balassa's Studies in Trade Liberalization, Bauges's Voluntary Export Restrictions, Massel's Competition and Monopoly: Legal and Economic Issues, Towle's International Trade and Commercial Policy, and Bidwell's The Invisible Tariff provide useful descriptions of various nontariff restrictions, but none attempt to estimate their restrictiveness.

D. Private Correspondence.

Since nontariff barriers vary from product to product and from country to country, specific information on how each of the ten major steel traders restricted steel was needed for this study's estimates. As already noted, however, most of the secondary sources listed above were too general to be of much use. Yet, they did yield many names of persons intimately involved with the steel trade situation. These individuals worked for United States producers, both United States and foreign steel importers, staff of the United States Department of Commerce, and United States Embassy personnel. Some were kind enough to respond to the very detailed questions contained in letters addressed to them. Without their

first-hand knowledge, this or any other study of nontariff barriers would face the impossible task of ferreting out crucial details lost in a morass of unexplored foreign government documents.

E. Questionnaires.

This study's questionnaires to steel traders in the ten countries considered here had two basic purposes. First, they were to provide information on barriers that had not been discovered. Second, the returns were to help attach values to the restrictive effects of barriers which could not be quantified.

The first objective was served by lists of general or specific barriers. Respondents were requested to add any others which they though were missing. Export credit terms in the EEC countries were added by one United States company, but many preferential discount rates had already been quantified under the general heading of export subsidies. Japanese quotas were added, but further research uncovered no other evidence of general steel quotas. Canada was also claimed to have stringent foreign exchange regulations, but no other substantiation was found for that contention.

The second goal was to be met in two ways. The respondents were first asked to rank the barriers they faced. Most of them did this with such consistency, that an average rank could be computed for most barriers in each country, and this appears in Figure 4. Some barriers, however, were merely

Nontariff Barrier	Rank Attached to Each Nontariff Barrier by Steel Traders							
	Benelux	Canada	France	Germany	Italy	Japan	U.K.	U.S.
Import licenses						1		
Quotas						3		1
Exchange restrictions		1	5			6	1	
Domestic biased procurement	3	2	4	4	3	1	5	2
Antidumping regulations		3						6
Subsidies	2	4	2	2	2	7	6	
Customs penalties								10
Incomplete customs information								11
Customs fees and deposits								
Customs complexities & delays						4		3
Uncertain changes in rules								7
Document & marking rules								8
Patent & trademark laws								9
Internal or border taxes	1	6	1	1	1			
Government price control							3	
Credit controls			7				4	
National security restrictions							7	
Technical specifications								5
Steel cartel activity	4		3	3	4	5	2	3
Freight rate discrimination						8		
Exclusive supply agreements	5	5	6	5	5			4

Figure 4
Summary of Survey on Nontariff Barriers to Steel

checked. Others, which published sources listed, were ignored. Moreover, some ranks by world steel traders were found to be inconsistently ordered when compared with the relative restrictiveness of some quantified barriers. For instance, the most important barrier quantified for Canada (indirect taxes) was ranked far below one of the least restrictive barriers quantified for Canada (subsidies). For these reasons, the ranking could not be used to supplement estimates of the import volume excluded by quantified barriers.

The questionnaires also asked for estimates of the effect of certain barriers on costs, prices, and volume. Only a couple of replies were received. One United States importer believed that the new "voluntary" limitations on exports to the United States would cause costs to rise by 10 to 30 percent and volume to fall by 20 percent. This implies a lower import demand elasticity than this study estimated statistically. However, the firm's volume estimate is very close to this study's calculation that roughly 25 percent of potential 1969 import volume would be excluded. Costs attached to the alleged Canadian restriction mentioned above were 7½ percent of unit costs. No indication was given that certain barriers restricted one type of steel more than another, or that there had been any recent changes in the nontariff barriers.

One-hundred questionnaires were sent to American importers, but only five replied. Two-hundred questionnaires were mailed to American producers, but only eight replies were received.

Nevertheless, the eight respondents in the second group represented firms accounting for over one-fourth of domestic steel shipments; all of them are large exporters, as well. Therefore, the few responses of the second group can still give a meaningful indication of how United States steel exporters view foreign nontariff barriers.

VIII. Footnotes.

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[4]Ibid., p. 3.

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[13]C. R. Whittlesey, "Excise Taxes as a Substitute for Tariffs," American Economic Review, Vol. XXXVII, December, 1937.

[14]M. S. Massel, "Non-Tariff Barriers as an Obstacle to World Trade," Reprint No. 97, The Brookings Institution: Washington, D.C., 1965.

[15]Kelly, op. cit.

[16]Ibid., p. 267.

[17]H. G. Johnson, Economic Policies Toward Less Developed Countries, The Brookings Institution: Washington, D.C., 1967, pp. 245, 246.

[18]See Grubel and Johnson, "Nominal Tariff Rates and U. S. Valuation Practices," Review of Economics and Statistics, May, 1967; Joint Economic Committee, Discriminatory Ocean Freight Rates and the Balance of Payments, 89th Congress, 1st Session, Part 3, 1965, United States Government Printing Office: Washington, D.C., p. 450; R. Z. Aliber and H. Stein, "Price of United States Exports and the Mix of Direct and Indirect Taxes," American Economic Review, September, 1963, pp. 703-710.

[19]Massel, op. cit.

[20]Kelly, op. cit., p. 266.

[21]Rules governing re-exportation of imports are ignored because these mainly influence third-country transactions.

[22]The third list is a catalogue of nontariff barriers published by GATT, but as yet it is unobtainable.

[23]Steel Imports, op. cit., pp. 254, 263. Figures are for 1966 and 1965 respectively.

[24]United Nations Statistical Office, Department of Economic and Social Affairs, Statistical Yearbook, United Nations, New York, 1968.

[25]J. S. Bain, International Differences in Industrial Structure, Yale University Press, New Haven-London, 1966, p. 20.

[26]Ibid., p. 36.

[27]Computed from relative concentration data in Bain, op. cit., pp. 78, 82, 92, 97, 104.

[28]Subcommittee on Antitrust and Monopoly, Committee on the Judiciary, United States Senate, 88th Congress, 2nd Session, Concentration Ratios in Manufacturing Industries, Pt. 1, 1965, United States Government Printing Office: Washington, D.C., p. 8.

[29]See "The World Battle for Steel," Business Week, June 4, 1966, p. 63; "Business Around the Globe: Trouble for Steel," Fortune, May, 1966, p. 64; and "Mergers: Japanese Fever," Time, May 24, 1968, p. 68.

[30]L. Lister, Europe's Coal and Steel Community: An Experiment in Economic Union, Twentieth Century Fund: New York, 1960, pp. 131-168.

[31]Ibid., pp. 132, 137, 144, 147, 157.

CHAPTER TWO
NONTARIFF BARRIERS TO STEEL

I. Introduction.

A. The Number and Distribution of Nontariff Barriers.

The appendices to this study provide a detailed discussion of nontariff barriers to international trade in steel. The potential restrictiveness of each of these barriers was found to vary markedly with the product and country under consideration. Nevertheless, some useful generalizations can be made about the number and type of nontariff restrictions in each of the ten major steel-trading countries.

Figure 5 below shows nontariff restrictions generally imposed on all imports to be concentrated in the areas of customs administration and subsidies. Very few countries try to exclude imports across the board through the use of any foreign economic policy except export assistance. Likewise, very few employ internal policies (outside of domestic subsidies) or permit restrictive business practices to affect all imports.

The countries which apply the least number of general restraints (seven) are West Germany and Canada. France and the United Kingdom set up the highest number (13) of barriers against all goods. Only Japan requires licensing for all imports, while only Luxembourg levies an import surcharge on

		Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States
Foreign Economic Policies	Import licenses						X				
	Exchange controls			X			X		X		
	Quotas										
	Export limitations										
	Biased procurement										
	Transport rebates	X		X		X		X	X		
	Wage tax rebates			X			X				
	Marketing assistance	X	X	X	X	X	X	X	X	X	X
	Tied foreign aid			X							X
	Indirect tax rebates	X				X		X	X	X	
	Import surcharges							X			
	Antidumping laws										
Administrative Practices	Advertising rules										
	Marking regulations										
	Document requirements	X	X	X	X	X	X	X	X	X	X
	Classification rules	X	X	X	X	X	X	X	X	X	X
	Valuation procedures	X	X	X	X	X	X	X	X	X	X
	Customs fees & deposits			X		X	X			X	
	Other customs rules	X	X	X	X	X	X	X	X	X	X
	Penalties	X	X	X	X	X	X	X	X	X	X
Internal Policy & Regulation	Direct payments	X								X	
	Depreciation	X	X	X	X	X	X	X	X	X	X
	Investment incentives	X		X		X	X	X	X	X	X
	Low cost loans										
	Overpriced purchases										
	Internal tax rebates										
	Direct taxes										
	Indirect taxes	X				X			X		
	Other internal taxes										
	Price controls										
	Credit controls										
	Advertising rules										
	Patent, trademarks										
	Health & safety rules										
	Technical specifications										
	National security rules										
Private Practices	Cartels										
	Exclusive supply agreements										
	Freight rate discrimination										

Source: See text.

Figure 5
Nontariff Barriers Generally Imposed on All Imports

all goods. Not one of the major steel-trading countries imposes quotas, "voluntary" export limitations, biased government procurement, or antidumping measures on all imports. Similarly, no one attempts generally to deter imports with advertising or marking restrictions.

Figure 6 shows that foreign economic policies (with the exception of export subsidies), marking, technical, health, and safety regulations, as well as restrictive business practices are favored for impeding imports on a selective basis. Customs practices, domestic subsidies (with the exception of low-cost loans and over-priced government purchases), and national security restrictions are seldom imposed on selected imports only. Japan has the smallest number (11) of selectively applied nontariff barriers, while France has the most (15). Germany and the United States have 14, while Canada has 11. The rest have 13. France is the only major steel trader to restrict some imports with advertising restrictions, while the United Kingdom is the only one to give a rebate on internal taxes as a subsidy to selected goods.

Figure 7 shows the distribution of each major steel trader's nontariff barriers on steel imports. Steel is subject to 14 of the 20 restrictions which are applied selectively, as well as to all barriers which are imposed across the board, and the three restrictions which are applied both ways. Thus, in one or another of the major steel-trading countries steel imports are restricted by 34 different nontariff barriers.

		Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States
Foreign Economic Policies	Import licenses	X	X	X	X	X		X	X	X	X
	Exchange controls	X				X		X	X		
	Quotas	X	X	X	X	X	X	X	X	X	X
	Export limitations		X	X	X					X	X
	Biased procurement	X	X	X	X	X	X	X	X	X	X
	Transport rebates										
	Wage tax rebates										
	Marketing assistance										
	Tied foreign aid										
	Indirect tax rebates										
	Import surcharges										
	Antidumping laws	X	X	X	X	X	X	X	X	X	X
Administrative Practices	Advertising rules			X							
	Marking regulations	X	X		X	X	X	X	X	X	X
	Document requirements										
	Classification rules										
	Valuation procedure										
	Customs fees & deposits										
	Other customs rules										
	Penalties										
Internal Policy & Regulation	Direct payments										
	Depreciation										
	Investment incentives										
	Low cost loans			X	X		X				
	Overpriced purchases	X			X	X		X	X		
	Internal tax rebates									X	
	Direct taxes										
	Indirect taxes		X								
	Other internal taxes			X							X
	Price controls	X		X	X	X	X	X	X	X	
	Credit controls									X	X
	Advertising rules			X						X	X
	Patents & trademarks										X
	Health & safety rules	X	X	X	X	X	X	X	X		
	Technical specifications	X	X	X	X	X	X	X	X		
	National security rules										X
Private Practices	Cartels	X	X	X	X	X	X	X	X	X	X
	Exclusive supply agreements	X	X	X	X	X	X	X	X	X	X
	Freight rate discrimination	X	X	X	X	X	X	X	X	X	X

Source: See text.

Figure 6
Nontariff Barriers Selectively Imposed on Some Imports

		Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States
Foreign Economic Policies	Import licenses						X				
	Exchange controls			X			X				
	Quotas			X							
	Export limitations										X
	Biased procurement	X	X	X	X	X	X	X	X	X	X
	Transport rebates	X		X	X	X		X	X		
	Wage tax rebates			X							
	Marketing assistance	X	X	X	X	X	X	X	X	X	X
	Tied foreign aid			X							X
	Indirect tax rebates	X			X	X		X	X	X	
	Import surcharges							X			
	Antidumping laws		X		X						X
Administrative Practices	Advertising rules										
	Marking regulations										X
	Document requirements	X	X	X	X	X	X	X	X	X	X
	Classification rules	X	X	X	X	X	X	X	X	X	X
	Valuation procedures	X	X	X	X	X	X	X	X	X	X
	Customs fees & deposits			X		X	X			X	
	Other customs rules	X	X	X	X	X	X	X	X	X	X
	Penalties	X	X	X	X	X	X	X	X	X	X
Internal Policy & Regulation	Direct payments	X								X	
	Depreciation	X	X	X	X	X	X	X	X	X	X
	Investment incentives	X		X		X	X	X	X	X	X
	Low cost loans			X	X		X				
	Overpriced purchases			X							
	Internal tax rebates									X	
	Direct taxes										
	Indirect taxes	X	X			X			X		
	Other internal taxes										
	Price controls	X		X	X	X	X	X	X	X	X
	Credit controls										
	Advertising rules										
	Patents & trademarks										
	Health & safety rules										
	Technical specifications			X							
	National security rules										
Private Practices	Cartels	X		X	X	X	X	X	X	X	X
	Exclusive supply agreements	X		X	X	X	X	X	X	X	X
	Freight rate discrimination						X				X

Source: See text.

Figure 7
Nontariff Barriers Facing Steel Imports

The only barriers that steel has avoided to any extent are those erected by internal policies. Steel faces no advertising restrictions, direct tax or other internal tax impediments, credit controls, patent regulations, health and safety rules, or national security restrictions. France imposes the most restrictions on steel (21) and Canada the least (10). Germany, Luxembourg, and the Netherlands have 15 steel restrictions each, while Belgium and Italy have 16. Japan applies 18 barriers, while the United States and the United Kingdom impose 17 each.

B. Quantifiable Nontariff Barriers to Steel.

Chapter 1 noted that this study intends to estimate the restrictive effects of the nontariff barriers listed in Figure 7. However, precise estimates are possible only if the height of the barrier can be determined. In other words, the import-domestic price differential created by each nontariff restriction must be obtainable. As we shall see in the next section of this chapter, the differential may be expressed at an advalorem tariff-like rate, and used with elasticity estimates to predict restrictiveness.

Unfortunately, a glance at Figure 7 confirms the earlier observation in Chapter 1 that many important steel restrictions cannot be expressed in numerical terms. In particular, most licensing and exchange controls, prejudice in government procurement, antidumping laws, administrative practices, noneconomic internal policies, and some restrictive business

practices are not amenable to transformation into a tariff-equivalent rate. The nontariff barriers which this study has been able to quantify appear in Table 1 below. As illustrated there, five quantifiable nontariff restraints are found in both France and Italy; four in Belgium, Japan, Luxembourg, the Netherlands, and the United Kingdom; three in the United States and Canada and one in Germany. Of course, for any one country the number of its barriers that has been quantified may bear no relation to its total number of nontariff restrictions, nor to their total impact on steel imports.

II. The Restrictive Effect of Trade Barriers.

The way in which quantified barriers restrict imports is often an important determinant of their height. In this section, the restrictiveness of various types of barriers is analyzed in order to obtain a measure of their advalorem nontariff barrier rates.

A. Tariffs and Quotas.

Any import restriction causes a decrease in the effective supply of goods to importers or alternatively a decrease in the effective import demand facing foreign exporters. According to the latter interpretation, tariff AC would decrease the demand for imports from DD to D_TD_T in Figure 8. As a result the volume of imports would decrease from OF to OE and the domestic price of imports would rise from OB to OC. A quota limiting imports to OE, on the other hand, decreases import demand by changing DD to DD_Q. In this case,

Table 1
Quantified Items Creating Nontariff Barriers to Steel*

Nontariff Barrier Items	Major Steel-Trading Countries									
	Belgium	Canada	France	Germany	Italy	Japan	Luxem-bourg	Nether-lands	United Kingdom	United States
Quotas			59,000[a]							14,000,000[b]
"Voluntary" Export Limits										6.00%[c]
Domestic Biased Purchasing	10.00%	10.00%[d]					10.00%	10.00%		
Import Surcharges							3.00%			
Export Subsidies:										
Direct Payments			6.00%							
Credit Financing			2.70%		4.70%	1.20%				
Penalties						$28[f]				
Tax Rebates	7.00%				22.00%		1.00%	5.57%	3.00%	
Prior Deposit Requirements						.09%			1.90%	
Customs Fees			.25%		.60%					
Domestic Subsidies:										
Direct Payments									8.00%	
Internal Tax Rebate									.60%	
Input Subsidies	3.00%	7.60%	2.20%	2.80%	1.80%		3.00%	3.00%		
Indirect Taxes	6.58%	12.00%			4.80%			5.75%		
Freight Rate Discrimination						.49%			3.26%	

Notes: *Amount of quota or percent of c.i.f. import price.
a Metric tons per month.
b Short tons per year.
c 6% for Federal purchases other than for Department of Defense (28%), and AID which has limited its foreign purchases of steel to 7% per year.
d Applies to 80% of Canadian steel imports.
e Applies to Provincial as well as Federal purchases.
f Per ton of production.

Source: See text.

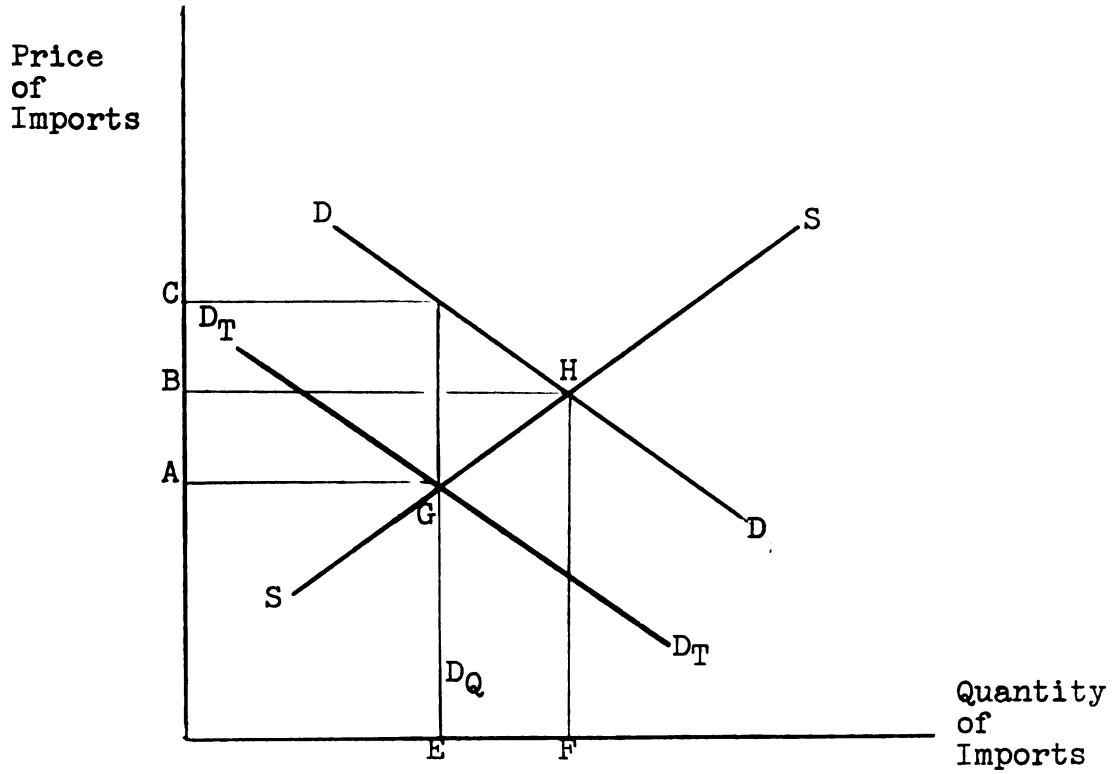

Figure 8
The Equivalence of Tariffs and Quotas

the quota excludes the same quantity of imports (EF) and causes the same domestic-import price differential (AC) as the tariff.

Given a tariff expressed as a percent of c.i.f. import price exclusive of duty (AC/OA), the value of steel it excludes (AGEFHB) can be calculated with elasticities derived in Chapter 3 and formulas developed in Chapter 4. Similarly, quotas and other quantitative restrictions on steel imports could be expressed in tariff-equivalent form by measuring the domestic-import price differential they create. The differential solely attributable to quantitative restrictions, however, is impossible to separate from the rest of the domestic-import price differential created by other import barriers or market imperfections, unless OF is known.

The value of OF is not simply the pre-quota volume of imports, because import demand may have grown in the absence of the quota. Therefore, OF is estimated (in Chapter 4) by adjusting pre-quota import volume with income elasticities.

Once OF is determined, the difference between it and the quota (OF-OE) will give the quantity of imports restricted (EF). The tariff-equivalent price differential (AC) created by excluding EF can be derived using elasticities of import demand and supply (η_M and e_M respectively). Expressing the differential as a percent of c.i.f. import price, the following expression is found for it:

$$\frac{AC}{OB} = \frac{AB}{OB} + \frac{BC}{OB}$$

$$= \frac{AB/OB}{EF/OF} \cdot \frac{EF}{OF} + \frac{BC/OB}{EF/OF} \cdot \frac{EF}{OF}$$

$$= \frac{1}{e_M} \cdot \frac{EF}{OF} + \frac{1}{\eta_M} \cdot \frac{EF}{OF}$$

(1) $$= \frac{EF}{OF} \frac{\eta_M + e_M}{e_M \eta_M}$$ when η_M and $e_M < \infty$

(2) $$= \frac{EF}{OF} \cdot \frac{1}{e_M}$$ when $\eta_M = \infty$

(3) $$= \frac{EF}{OF} \cdot \frac{1}{\eta_M}$$ when $e_M = \infty$

B. Direct Nontariff Barriers.

Other nontariff restraints have the same effect as tariffs or quotas, although the changeable and covert nature of such restrictions often creates enough uncertainty to accentuate their restrictiveness. The costs of obtaining import licenses and exchange permits, price preferences granted in government procurement, countervailing duties, surcharges, statistical or handling fees, custom's deposits, fines, costs of satisfying certain customs and/or internal regulations, excess border taxes, and freight rate differentials--all have precisely the same effect as a duty of equal amount. In addition, they are already expressed in a tariff-like form as a percent of c.i.f. import price. (See Table 1) Exchange and import licensing systems, state trading, non-price government procurement preferences, and national security restrictions have an

obviously quota-like effect on imports, though they have not been quantified.

C. Subsidies.

1. Introduction.

A tariff-like restriction of imports also can be caused by subsidies, if import demand can be looked upon as the difference between domestic demand and supply at prices below domestic equilibrium. In that case, any specific or advalorem subsidy which increases domestic supply also decreases import demand. However, the rate of subsidization need not equal the advalorem rate of the nontariff barrier created by the subsidy because of incidence considerations.

2. Domestic Subsidies.

A domestic subsidy will lower import demand only to the extent it is passed on to buyers in the form of a price decrease. This point is illustrated by referring to a partial equilibrium model of a country's domestic and foreign trade market for one good, such as steel.

As Figure 9 illustrates domestic supply (S_dS_d) and demand (D_dD_d) in the absence of international trade would establish price OD, and the difference between S_dS_d and D_dD_d at prices below OD determines the import demand curve D_MD_M. D_MD_M and the supply of exports facing the country (S_MS_M) determine the free trade price of IK=OB in both the foreign trade and domestic sectors of the country considered here.

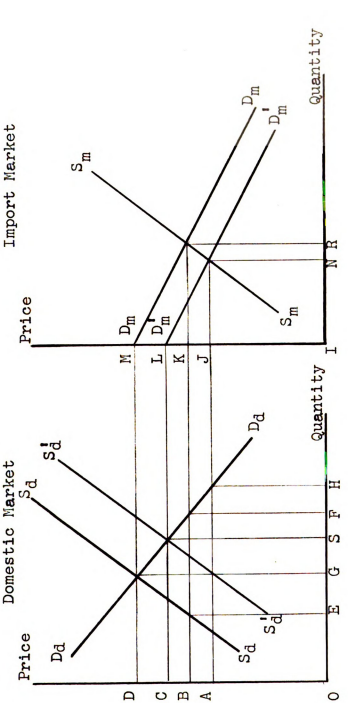

Figure 9
The Effect of a Domestic Subsidy

According to orthodox economic theory a lump-sum domestic subsidy would have no effect on domestic supply, but a per-unit domestic subsidy equal to DA=JM would shift S_dS_d to $S'_dD'_d$. Demand and supply elasticities dictate, however, that the domestic equilibrium price in the absence of trade would fall by DC<DA. Deriving a new import demand curve for prices below OC demonstrates that subsidy DA reduces import demand in the same way that a tariff of ML=DC would decrease it. Thus, the tariff-equivalent advalorem rate of the nontariff barrier (ML/IJ) created by a domestic subsidy (DA) is equal to the amount of the subsidy passed on to buyers as a percent of c.i.f. import price (DC/OA). The nontariff barrier rate (ML/IJ) is related to the apparent rate of domestic subsidization (DA/OA) in the following way:

$$\frac{ML}{IJ} = \frac{DC}{OA}$$

$$= \frac{DC}{DA} \cdot \frac{DA}{OA}$$

In order to determine the nontariff barrier rate (ML/IJ) created by the domestic subsidization rate (DA/OA), one must find the fraction of the subsidy passed forward to buyers (DC/DA). This fraction is precisely related to domestic demand and supply elasticities (η_D and e_D respectively).[1]

The elasticity of domestic demand is:

(4) $$\eta_D = \frac{GS}{GO} \cdot \frac{CO}{DC}$$

$$= \frac{GS}{GO} \cdot \frac{CO}{\frac{DA}{DA}\frac{DC}{DA}}$$

(5) $$\frac{GS}{GO} = \eta_D \cdot \frac{DA}{CO} \cdot \frac{DC}{DA}$$

The elasticity of domestic supply is:

$$e_D = \frac{GS}{GO} \cdot \frac{CO}{AC} = \frac{GS}{GO} \cdot \frac{CO}{\frac{DA}{DA}\ \frac{AC}{DA}}$$

(6) $$= \frac{GS}{GO} \cdot \frac{CO}{DA} \cdot \frac{DA}{AC}$$

Substituting (5) into (6) one obtains:

(7) $$e_D = \eta_D \frac{DC}{AC}$$

$$\frac{e_D}{\eta_D} = \frac{DC}{AC}$$

$$\frac{e_D}{\eta_D} = \frac{DC}{DA}\ \frac{AC}{DA}$$

$$= \frac{DC}{DA}\ \ 1-\frac{DC}{DA}$$

$$e_D\ 1-\frac{DC}{DA} = \eta_D \frac{DC}{DA}$$

$$e_D - e_D \frac{DC}{DA} = \eta_D \frac{DC}{DA}$$

$$e_D = \frac{DC}{DA}\ e_D + \eta_D$$

$$\frac{DC}{DA} = \frac{e_D}{e_D + \eta_D}$$

Therefore, the nontariff barrier rate $\frac{ML}{IJ}$ created by the domestic subsidy (DA) is:

(8) $$\frac{ML}{IJ} = \frac{e_D}{e_D + \eta_D} \cdot \frac{DA}{OA}$$

It also follows that the share of the subsidy absorbed by domestic producers is:

$$\frac{CA}{DA} = \frac{\eta_D}{\eta_D + e_D}$$

After the appropriate elasticities are estimated in Chapter 3, the domestic subsidies shown in Table 1 above will be transformed into advalorem nontariff barrier rates in Chapter 4.

3. Export Subsidies.

Traditional international trade theory cannot be used to show how an export subsidy erects an import barrier, because its framework cannot accommodate a country which imports and exports the same good. Nevertheless, in the real world many countries trade both ways with the same commodity. All of the major steel-trading countries, for instance, import and export a substantial amount of iron and steel mill products. Part of this two-way trade is due to product differentiation, imperfect knowledge, international versus intranational transport costs, institutional arrangements such as long-term contracts or other ties between buyer and seller, and intranational factor immobility. However, perfectly competitive long-run equilibrium in the domestic market at a given free world trade price[2] may also result in two-way trade. In the absence of transportation costs, domestic consumers will be indifferent between imports and domestic goods, while domestic producers will be indifferent between selling domestically or

exporting. In this case an export subsidy will increase the country's production and exports, but need not change the volume of imports.

As equation (5) specifies, the rate of domestic subsidization equals the rate of the nontariff barrier it creates when the domestic supply elasticity equals infinity or the domestic demand elasticity equals zero. On the other hand, domestic subsidization does not create any nontariff barrier when domestic demand is infinitely elastic or when the supply elasticity is zero.

Suppose, on the other hand, that the subsidizing country faces a less than infinitely elastic demand for its exports. Then the export subsidy will lower export prices to the extent that elasticities of demand (η_x) and supply (e_x) for the subsidized export permit it to be passed on to foreign buyers. In turn, the possibility of reimportation of the subsidized export and the prevalence of antidumping laws (discussed in the Appendix) ensure that the domestic price will also fall to equality with the new export price.[3]

When the domestic equilibrium price falls, the import demand function facing foreign sellers also decreases. As a result, the export subsidy creates a nontariff barrier, equal to that part of the export subsidy passed forward to buyers. According to the method employed in the section on domestic subsidies, the nontariff barrier as a percent of c.i.f. import price will equal $\frac{e_x}{e_x + \eta_x}$ times the rate of export

subsidization. With values for e_x and η_x from the following chapter, export subsidies will be converted to their advalorem tariff-equivalent rates in Chapter 4. The latter chapter, of course, will also present estimates of the value of steel restricted by all imports.

III. Footnotes.

[1]M. Kreinin, On the Incidence of Indirect Taxes, Mimeograph, Michigan State University, 1970.

[2]The given world price implies that import supply and export demand are infinitely elastic for the country under consideration.

[3]Towle, International Trade and Commercial Policy, p. 471.

CHAPTER THREE
ELASTICITIES OF DEMAND AND SUPPLY FOR STEEL AMONG THE MAJOR STEEL-TRADING COUNTRIES

I. Introduction.

In order to estimate the effect of nontariff barriers on trade flows among the major steel-trading countries we need to know their import demand and supply elasticities. Similarly, export demand and supply elasticities are needed to convert export subsidization rates to nontariff barrier rates. Domestic demand and supply elasticities are also required to compute the height of the nontariff barriers raised by domestic subsidies. Therefore, this chapter presents estimates of the appropriate elasticities for each of the major steel traders.

II. United States Import Demand Elasticity.

A. The Model.

1. Rationale.

The problem confronted in estimating the elasticity of demand for steel imports lies in choosing an appropriate model to specify the import demand function. From the traditional theory of demand in foreign trade, one starts with the hypothesis that United States steel imports are a function of relative prices and the level of United States income. In addition, an attempt to improve the specification of the import demand

function involved introducing other possibly-important explanatory variables. These include variables to account for excess domestic capacity and domestic labor disputes. The reasons for introducing the additional variables are discussed next.

a. Excess Capacity.

One of the basic tenets of traditional international trade theory states that import demand is the difference between domestic demand and supply at prices below domestic equilibrium. In Marshallian partial-equilibrium terms, the demand for imports is excess domestic demand.[1] However, rigid, oligopolistic steel prices in the United States may not reflect these domestic market conditions.

Thus, in an attempt to improve the specification of the steel import demand equation, the percent of capacity utilization (i.e. production/capacity) in log form was introduced as a third independent variable. The movement of this variable was expected to be positively correlated with the direction of change in import volume. This positive relationship arises when capacity is under-utilized, because excess capacity or supply would exist on the domestic market, and there would be little if any demand for imports. Conversely, when no excess capacity exists, this indicates a high rate of domestic consumption and perhaps some excess demand which would spill over to the import sector.

b. Steel Strikes.

The United States steel industry has claimed that "labor disputes have given foreign steel producers repeated opportunities to 'get their feet in the door' and afforded domestic steel users strong encouragement to try foreign sources of supply."[2] This argument is supported by a look at the activity in the steel market before, during, and after actual or threatened strikes. Before walk-outs are scheduled, steel users increase their purchases from domestic and foreign suppliers to build up inventories for an anticipated strike. During a strike, customers may go abroad to satisfy their steel requirements. After a strike, the strain of high demand to replenish inventories taxes the capacity of the domestic industry. Resulting delays and price increases may prompt many customers to buy overseas.

Surveying the labor disputes and import trends of the last decade, a Congressional study concluded that hedge buying has been a major factor in the import picture.[3] The contribution of steel labor disputes to rising United States imports may be insignificant, however. A University of Michigan researcher found that there was little permanent loss of markets to foreign steel because of strikes.[4]

If steel strikes are an important determinant of the level of United States steel imports, they should be considered along with other independent variables, such as price and income. For this reason, and the secondary purpose of testing

the relationship between imports and strike hedging, a dummy variable was added to the regression equation. Binary in form, the variable took the value of one in buying periods affected by the steel strikes, and zero in all others.

c. Import Transport Strikes.

If steel strikes could raise imports, then possibly dock or shipping strikes could lower them. To consider the influence of these labor disputes another independent variable was added to the multiple regression equation. This variable equals the percent of man-days lost in each quarter due to major strikes in the maritime industry. The volume of steel imports was expected to vary inversely with this percentage.

2. Statement.

According to the specification developed above, one derives the United States elasticity of import demand for steel by estimating an import-demand function from quarterly data on import volume, prices, income, capacity utilization, and labor disputes. The basic procedure used here has been applied by Ball and Marwah for five broad commodity groups over the years 1948 to 1958.[5] It has also been used by Kreinin to estimate the import demand elasticity for the same range of goods in the years 1954 to 1964.[6] Their approach involves regressing the log of an import volume index against the logs of a relative price index and real GNP. Moreover, the log of a domestic production/capacity ratio, a binary variable to account for the effects of actual or threatened steel strikes,

and the percent of water-transport workers on strike were included. The resulting regression model appears below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Where Y = log of import volume index;

X_1 = log of relative price index;

X_2 = log of real GNP index;

X_3 = log of capacity utilization;

X_4 = binary variable = 1 in periods of hedge or strike buying, = 0 in other quarters;

X_5 = percent of U. S. water transport workers on strike;

α = intercept term;

β_i = regression coefficients from i = 1,...5;

e = regression disturbance term.

The first regression coefficient (β_1) is the least square estimate of the United States price elasticity of demand for steel imports. Similarly, β_2 is the income elasticity estimate, and β_3 is the elasticity of import demand with respect to domestic capacity utilization. The regression used quarterly data spanning the 15-year period from 1954 through 1968.

Kreinin lagged import volume one quarter behind the two independent income and price variables. This seems to be an appropriate method to account for the time between the consumers' reaction to a change in the import price of a finished manufacture and the resulting level of imports. However, in the market for a capital good, such as steel, the consumer

and supplier may be in closer touch, with fewer intermediaries such as wholesalers and retailers. Here the prices quoted during a particular quarter may determine the amount of import orders in the same quarter, and an unlagged regression would seem to make the most realistic model.

To determine which method provided the better steel import demand elasticity, the present study's regression was run twice: once with import volume lagged one quarter behind price and income, and once with no lags. The effects of these alternative procedures will be shown later when the resulting estimates are presented.

Kreinin also adjusted the variables for seasonal fluctuations by the use of moving averages. In contrast, this study made no adjustment for seasonal fluctuations. Provisions were made instead to adjust for any significant serial correlation that might arise in the regression residual term by determining the form of the autoregressive structure of the disturbance and transforming the variables of the equation accordingly. The significance of any serial correlation in the regression disturbance term was determined by applying a Durbin-Watson test.[7] If the test showed significant autocorrelation, then the parameters of the autoregressive structure could be estimated. These parameters could then be used to transform the original data in such a way as to eliminate the autocorrelation.[8] The calculated Durbin-Watson statistic appears below with the rest of the results, but first a consideration of the regression variables may be in order.

B. The Variables.

1. Import Volume.

The log of the dependent variable was derived from data on the quantity of steel imports found in trade summaries published by the United States Department of Commerce.[9] The definition of steel imports used by the Department of Commerce closely matches the two-digit Standard Industrial Trade Classification (SITC) commodity group called iron and steel mill products (SITC No. 67), except that it excludes pig iron (SITC No. 671). Since pig iron is more of a raw material for both semi-finished and finished steel products, and worth about one-quarter of the value, it seems appropriate not to consider it with other iron and steel mill output. On the other hand, many types of finished or semi-finished steel can hardly be regarded as similar or substitutable, and applying a uniform elasticity estimate to them may be an improper procedure. An aggregate elasticity, however, will not overstate the effect of removing import barriers on all steel products across the board. A weighted average of disaggregated elasticities for each steel product would tend to be larger, because these estimates are computed on the assumption that all other prices remain the same.[10]

Quarterly data on United States imports of the relevant commodity group in terms of thousands of short tons were obtained. Next, an index was constructed from the raw data using the 1957-1959 average as base, and converted to

logarithm form. The raw data and index appear in Table A23 of Appendix 5 at the end of this study.

2. Relative Prices.

An import/domestic price index for steel forms the first independent variable in the regression equation, when this relative price index is expressed in logarithmic form.

a. Import Prices.

An import price index was constructed from quarterly unit values obtained from the United States Department of Commerce,[11] although the use of unit values rather than actual import prices is subject to some criticism. A National Bureau of Economic Research study demonstrates that as a result of aggregating many different products into one commodity group, there is never any certainty that a change in unit value represents a change in price.[12] For instance, the unit value of a commodity group can change, even though all prices are constant, if there is a shift from one quality of item to another. Also, because the unit value for a particular commodity group is a weighted average of different import prices, it is not possible to say whether a change in unit value results from differences in prices or differences in the import share of certain items in the commodity group.

According to the National Bureau, steel products present fewer problems for the construction of unit value indexes than most manufactured goods, because the quantity and value data are adequate, and the relative homogeneity of steel products

lessens statistical ambiguities arising from quality changes.[13] Nevertheless, the National Bureau study proceeded to construct a preliminary index of annual steel trade prices between 1953 and 1963. The preliminary study made no attempt to see what light its data throw on the reliability of unit value indexes derived from customs data, but it still managed to conclude that the use of actual prices is "a superior approach."[14]

Despite such criticism, the study retained the quarterly unit value index constructed from Department of Commerce data as an indication of steel import prices. The National Bureau's index was not used because it is neither up-to-date, applicable to quarterly periods, nor clearly superior. The index used in this study appears in Table A23 of Appendix 5.

b. Domestic Prices.

Deriving an index of relative steel prices requires dividing the import price index by the domestic price index for steel. Quarterly domestic prices are available from the Bureau of Labor Statistics, which publishes composite indexes for all iron and steel, as well as for the following subclassifications in this category: iron ore, pig iron and ferroalloys, iron and steel scrap, semi-finished steel, finished steel, and foundry and forge products. The closest approximation of the import definition of iron and steel mill products appeared to be a combination of the last three Wholesale Price Index (WPI) subcategories (Wholesale Price Index Codes 1013, 1014, and 1015 respectively).[15]

This study's elasticity estimate covered the 15 years between 1954 and 1968. During this period the WPI weights of semi-finished, finished, and foundry and forge products changed four times, and the base year of the WPI changed twice.[16] Consequently, the construction of a domestic steel price index for this study required (1) averaging monthly price indexes for each of the three groups over quarterly periods, (2) applying appropriate WPI weight factors for each time period to the three steel product groups, (3) linking the different weighted price indices for each period so the weighted prices would be continuous over time, (4) adding the weighted indices to form a composite domestic steel price index, and (5) adjusting the index to one base year: 1957-1959 average = 100. The resulting domestic price index for steel appears in Table A24 of Appendix 5, together with this study's import price index and the ratio of the two indexes.

Critics of the Bureau of Labor Statistics methods claim that the WPI for steel is based on list prices given out by the industry instead of reflecting actual prices. Thus, the present study's elasticities would be overstated, because actual prices vary more than list prices. According to Martin Bailey, steel companies will absorb all or part of the freight charges, not charge for some extras, and give substantial quantity discounts in times of weak demand. Conversely, these hidden price concessions are rescinded, and extra charges for small quantities and certain specifications are added when demand increases.[17]

Much of this criticism appears to be unfounded, however. Even Bailey, in referring to Bureau of Labor Statistics price quotations, admits that "it cannot be shown conclusively that . . . they generally fail to reflect the true frequency of price change."[18] He gives the difference between The Iron Age composite price and actual mill net yield to United States Steel Company during World War I as an example of the magnitude of off-list selling, but his data also show that ever since that time, the differences between them have been negligible. Moreover, The Iron Age list prices and prices quoted by the Bureau of Labor Statistics are not necessarily equivalent.

In contrast to Bailey's criticism, publications on Bureau of Labor Statistics methods and procedures indicate that changes in actual prices can be shown by the Wholesale Price Index. Most of the quotations reported to the Bureau are the selling prices of representative manufacturers or producers, f.o.b. production point, and refer to sales for immediate delivery.[19] Delivered prices are included when the customary practice of an industry such as steel is to quote on this basis.[20] Thus, freight absorption should be reflected in the Wholesale Price Index. Generally, prices less all discounts, allowances, and rebates, are collected by mail questionnaire. Only when transaction prices are unobtainable and when list prices in trade publications are considered to be reliable does the Bureau of Labor Statistics use book or quoted prices. Moreover, the commodities included in the index are defined

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by precise specifications which incorporate the principal price-determining characteristics of the commodities.[21] In this way, the Wholesale Price Index attempts to reflect no price change due to changes in quality, quantity, shipping terms, or product mix.

The Bureau of Labor Statistics claims to be most concerned with measuring the direction and amount of price changes. Commenting on how well the Bureau has achieved this goal with respect to steel prices, a Bureau Commissioner maintains that any shading of prices which becomes widespread or is of long duration will be included in the index.[22] Another indication of the Wholesale Price Index's reliability comes from a study which found it adequate for the purpose of showing the price behavior of the United States steel industry in response to wire and wire rod imports.[23] Therefore, the present study retains the Wholesale Price Index as the basis for its domestic price index for steel.

3. Income.

The demand for steel is derived from consumer demand for goods, either made of steel or produced by steel machinery, stored in steel containers and buildings reinforced with steel, or transported in vehicles of steel. Since steel is a capital good, the index of industrial production seemed to be a reasonable variable at first glance.[24] However, this index is not broad enough, because it excludes such important steel-using sectors of the economy as mining, transportation, utilities, and construction.

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Thus, GNP, the broadest indicator of income available, was used as a basis for the second independent variable in this study's regression equation. Quarterly totals at annual rates in constant dollars were obtained from the United States Department of Commerce, and they were converted to index form before being changed to logarithms.[25] The variable is shown in Table A25 of Appendix 5 at the end of this study.

4. Capacity.

For the period prior to 1961, capacity data for the United States steel industry were readily available. All estimates were based on information from the American Iron and Steel Institute (AISI). But after 1960 the industry organization discontinued the practice of estimating capacity. The AISI figures from 1954 through 1960 appear in Table A26 of Appendix 5. The AISI has qualified these estimates by stating that they represent "net steel capacity,"[26] a concept which excludes operating time lost because of rebuilding, relining, repairs, and holiday shutdowns. In 1958 the average deduction by producers for lost capacity was 9.1 percent; in 1960 the figure was 8.7 percent.[27] United States steelmen further decrease this estimate to what may be called practical capacity. In practice, one steel executive has said, "capacity operation gives us so many problems in the way of maintenance and other fields that we have the feeling that we are doing better at, say, 86 to 90 percent of capacity, than at 100 percent . . ."[28]

Since 1961 several different annual estimates of United States steel capacity have been made. These estimates and their sources appear in Table A27 of Appendix 5. The Council of Economic Advisors (CEA) made the only continuous estimates supported by at least two other estimators, and for this reason they were chosen for the regression model. Early CEA estimates are similar to those of the Office of Business Economics and are closest to European Coal and Steel Community figures for 1965 and 1970, as well as Bethlehem's prediction for 1970.[29] In contrast, Wall Street Journal capacity data appear high, while the United Nations and Office of Business Economics (in recent years) make lower appraisals. Lower still is The Iron Age magazine estimate for 1967 of 155 million tons, but the credibility of this figure is in doubt. Near the end of 1968, The Iron Age claimed the industry was running at 40 to 60 percent of capacity, when fourth quarter production at an annual rate equalled 112 million tons.[30]

The capacity estimates from the AISI and CEA were expressed in equal quarterly rates for each of the 15 years over which elasticity is estimated. Quarterly production rates were obtained for the same period, and these along with capacity estimates, and their ratios, appear in Table A28 of Appendix 5. The log of this ratio constitutes the third independent variable in the multiple regression equation.

5. Steel Strikes.

Including this binary variable in the regression equation has the purpose of representing temporal effects--in particular,

the shifts in relations between strike-influenced periods and those quarters not affected by strikes. Because it is difficult to specify an appropriate scale of measurement the variable assumes values of zero and unity. These values can be used like any other numerical variables in a regression calculation.

Ascertaining the quarters affected by labor disputes involved two steps. First, records of collective bargaining in the steel industry were used to gather information on the length of negotiations, dates of strike deadlines, and the duration of strikes. These data are summarized in Table A29 of Appendix 5 at the end of this study.

Next, steel industry trade publications, primarily The Iron Age, were consulted in order to obtain market summaries for the period surrounding each contract expiration. A month before 1954 negotiations began, steel producers saw "a few signs here and there of strike hedging," but it had run its course by the time negotiations started.[31] Similarly, some hedge buying was noted a month before 1956 negotiations started.[32] However, a month-long strike also affected steel purchases during the third quarter of 1956. Buyers were anticipating the 116-day strike of 1959 as early as January, and the influence of the strike on their procurement policies continued into the first quarter of 1960.[33] Despite secret 1962 labor negotiations which were concluded by the end of the first quarter, large orders for second-quarter delivery were

already extended as a hedge against strikes.[34] Successful negotiations in 1963 also failed to prevent hedge-buying before agreement was reached in late June.[35] Stockpiling by steel users to insure against a May 1, 1965 strike deadline caused domestic mills to apply quotas on many steel products in January of that year.[36] Lengthy negotiations and postponements of the strike deadlines resulted in continuous hedge-buying through the third quarter of 1965.[37] Although agreement was reached before the 1968 strike deadline, hedge-buying, of imports particularly, resulted in large deliveries throughout the first three quarter of 1968.[38] The quarterly periods affected by collective bargaining in the steel industry are summarized in Table A30 of Appendix 5 together with production and import data.

6. Import Transport Strikes.

To consider the influence of dock and shipping strikes another independent variable was added to the multiple regression equation. This variable equals the percent of man-days lost in each quarter due to major strikes in the maritime industry.

Major strikes were defined as those involving more than 10,000 workers, and are summarized by the Bureau of Labor Statistics.[39] The total number of workers in water transport services over the last 15 years is also given by the Bureau of Labor Statistics.[40] From this data the percentage of man-days lost in each quarter was computed and the results appear in Table A31 of Appendix 5.

C. Estimated Parameters of the Model.

Regressing the log of steel import volume against the five independent variables described above, one obtains the following unlagged regression equation:[41]

$$Y = \underset{(0.059)}{-0.453} \underset{(0.326)}{- 0.932 X_1} \underset{(0.273)}{+ 4.335 X_2} \underset{(0.121)}{- 0.215 X_3} \underset{(0.063)}{+ 0.307 X_4} \underset{(0.647)}{- 0.828 X_5} \qquad R = 0.972$$

The price elasticity of import demand for steel based on quarterly data for 15 years was -0.932; the income elasticity of steel import demand was +4.335. In the course of the last 15 years, however, the share of steel imports in United States consumption has increased eight-fold.[42] Now, the a priori relationship between import share ratios and the price elasticity of import demand[43] indicates that such a change in the share of imports in the domestic market would cause the elasticity to change, and in fact become smaller providing that domestic elasticities remained the same.[44] To determine if a structural change had occurred in the variables, so that they would not be related in the same way over the 15 years, a test for equality between regression coefficients was applied.[45]

The 60 quarterly observations of each variable for the period 1954 to 1968 were divided into three five-year segments, and a separate multiple regression equation was obtained for each. The resulting regression equations, which appear below, show the price elasticity of import demand for steel becoming absolutely larger between 1954 and 1968, in contrast to the

expectation that as the import share of the United States market rose, elasticity decreased.

1954 - 1958:

$$Y = \underset{(0.116)}{-0.340} - \underset{(0.411)}{1.438}\,X_1 + \underset{(1.327)}{4.904}\,X_2 + \underset{(0.286)}{0.079}\,X_3 + \underset{(0.118)}{0.049}\,X_4 - \underset{(3.513)}{1.190}\,X_5 \qquad R = 0.824$$

1959 - 1963:

$$Y = \underset{(01.75)}{-0.143} + \underset{(0.771)}{0.384}\,X_1 + \underset{(1.277)}{4.158}\,X_2 - \underset{(0.184)}{0.023}\,X_3 + \underset{(0.121)}{0.481}\,X_4 - \underset{(1.487)}{0.877}\,X_5 \qquad R = 0.786$$

1963 - 1968:

$$Y = \underset{(0.139)}{-0.493} - \underset{(0.979)}{4.170}\,X_1 + \underset{(0.559)}{2.307}\,X_2 + \underset{(0.289)}{0.095}\,X_3 + \underset{(0.063)}{0.176}\,X_4 - \underset{(0.426)}{0.243}\,X_5 \qquad R = 0.977$$

To test whether the three sets of observations come from the same relation, the following procedure was used. First, the sum of squared residuals for the 15-year regression was obtained. Second, the sums of squared residuals for each of the five-year regressions were added. Third, the resulting total was subtracted from the 15-year sum of squares. Labelling the total found in the second step Q_2, and the difference derived in the third step Q_3 permits the F statistic used in this test to be written:

$$F_{k,\ m+n+p-2k} = \frac{Q_3 / k}{Q_2 / (m+n+p-2k)}$$

$$= \frac{0.17731425}{0.02956400}$$

$$= 5.99$$

where m, n, and p equal the number of observations in the first, second, and third five-year periods respectively; and k equals the number of parameters to be estimated.

Since the calculated F statistic exceeded the value for $F_{6,47}$ with a 99 percent confidence interval (3.43), the hypothesis of equality between the five-year regression coefficients was rejected. Thus, it appears that the apparent changes in the price and income elasticities of import demand for steel were significant. The estimates using the most recent data seem to provide the most relevant elasticities for analyzing current nontariff barriers. Consequently, the relative price elasticity used in this study equals -4.170, and the elasticity of demand with respect to income equals +2.307.

The latter elasticity will be used in Chapter 4 to estimate the restrictiveness of foreign limitations on steel exports to the United States. A similar elasticity estimate is needed to assess the impact of the French steel quota, but in the absence of adequate data for steel, Houthakker and Magee's recent estimate of 1.66 for total French imports will be used.[46]

The multiple regression equation gave an unexpected value to the coefficient of the capacity variable. This coefficient

could be called the elasticity of imports with respect to domestic capacity utilization, since it shows the percentage change in import volume related to a percentage change in the production/capacity ratio. However, the partial coefficient of correlation between the two variables is a low -0.237, and because it is not significantly different from zero at the five percent confidence level, the null hypothesis that there is no correlation between capacity utilization and imports was not rejected. Numerous other simple correlation coefficients were obtained for different specifications of the variables. Nevertheless, whether in logarithm or absolute form, whether lagged or unlagged, the variables were never more highly correlated.

A positive regression coefficient (shown in the statement of the 15-year regression equation above) indicated a direct relationship between hedge buying or purchases during steel strikes, and the level of imports. The partial correlation coefficient (r) for imports and the binary strike variable was 0.55. While this shows that about half of the total variation in imports can be explained by labor problems in the steel industry, the multiple coefficient of determination (R^2) was lowered only slightly (from 0.94 to 0.92) when the binary variable was deleted from the multiple regression equation. An analysis of variance resulted in an F-statistic (23.4036) which showed a significant relationship between imports and the strike or hedge-buying variable with a

confidence interval of 0.995. Nevertheless, since a high proportion of the change in import volume can be explained by other factors as well, actual or threatened steel strikes cannot be considered as the major cause of increased steel imports.

The multiple regression equation contained -0.828 as the regression coefficient of the transport strike variable. The negative relationship between imports and work stoppages was an expected one, but the partial correlation coefficient of -0.173 showed the explanatory value of the independent variable to be low. An F-test indicated no significant relationship at the five percent confidence level.

D. Test for Autocorrelation.

One of the crucial assumptions of the least squares estimation procedure used here is the serial independence of the disturbance term. If successive disturbances are autocorrelated, the resulting variances of the regression estimates may be understated, which means that tests of hypotheses may not be valid at the specified criterion of significance. The cause of autocorrelation may be the omission of important explanatory variables which introduce a cyclical or secular trend into the regression residual.

To test for serial correlation in the disturbances, a Durbin-Watson test statistic was calculated.[47] For the last five-year regression equation the Durbin-Watson statistic was 1.73. A table of critical values shows that the Durbin-Watson

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statistic for 20 observations, five independent variables, and 99 percent confidence interval must be less than 0.60 or more than 3.40 to reject the null hypothesis of zero autocorrelation. Since the calculated Durbin-Watson statistic fell in between the critical values, the null hypothesis was not rejected. On the other hand, acceptance of an alternative hypothesis of zero autocorrelation requires the calculated statistic to fall between 1.74 and 2.26, which it does not; therefore, the test for serial correlation in the regression disturbance term is inconclusive.

E. Causes of Elasticity Changes.

As a final note, let us consider the possible reasons for the apparent positive correlation between the share of imports in domestic consumption or production, and the price elasticity of import demand for steel over the last 15 years. First, since import elasticities vary directly with domestic supply and demand elasticities, changes in the domestic market may have offset the effect of the growing import share ratio. Second, the negative a priori relationship may hold only for extreme differences in the import ratios, while the United States ratio only increased from 1/114 to 1/15, both of which are very small fractions.[48]

A third explanation may be more plausible. As suggested by a previous study, elasticities may increase after buyers become familiar with the import market. For the steel industry, in particular, "new trade channels had been established"

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during the 1959 steel strikes when United States imports rose.[49] Having "discovered that they could use the cheaper foreign product,"[50] United States steel consumers now may need only slight price differences to rationalize a venture into or out of the import market.

Still another factor may have contributed to the apparent increase in the United States elasticity of import demand for steel. In the 1950's, price changes may not have resulted in any change in import volume due to water in the United States tariff. Correlatively, as tariff levels became less prohibitive, reductions of duties and import prices may have occasioned substantial increases in steel import volume.

III. Domestic Demand and Supply Elasticities.

Domestic price elasticities are required if this study is to estimate the impact of domestic subsidies on import demand. Little is known, however, about these elasticities, especially for investment goods like steel.[51] Nevertheless, one estimate of the domestic elasticity of demand for steel has been made by Yntema. He believes that the elasticity lies between -0.1 and -0.2.[52]

Yntema has also formulated the a priori relationship between domestic demand and supply elasticities and import demand elasticities. (η_D, e_D, and η_M respectively). This relationship is derived by defining the quantity of import demand (M) as the difference between domestic demand (D) and supply (S), at prices (P) below domestic equilibrium. Note

that the equation for import demand elasticity is (employing d to denote a small change):

$$(1)\ \eta_M = \frac{\frac{dM}{M}}{-\frac{dP}{P}}$$

$$= \frac{dM}{M} \cdot \frac{-P}{dP}$$

$$= \frac{d(D-S)}{D-S} \cdot \frac{-P}{dP}$$

$$= \frac{dD+dS}{D-S} \cdot \frac{-P}{dP}$$

$$= \frac{dD}{D-S} \cdot \frac{-P}{dP} - \frac{dS}{D-S} \cdot \frac{P}{dP}$$

$$= \frac{dD\,\frac{P}{dP}}{D-S} - \frac{dS\,\frac{P}{dP}}{D-S}$$

$$= \frac{D\,\frac{dD}{D} \cdot \frac{-P}{dP}}{D-S} - \frac{S\,\frac{dS}{S} \cdot \frac{P}{dP}}{D-S}$$

$$= \frac{D}{D-S}\,\frac{\frac{dD}{D}}{\frac{dP}{-P}} - \frac{S}{D-S}\,\frac{\frac{dS}{S}}{\frac{dP}{P}}$$

$$(1)\ \eta_M = \frac{D}{M}\eta_D - \frac{S}{M}e_D$$

As equation (1) illustrates, the import demand elasticity for steel is inversely related to the share of imports in domestic consumption and production. The import shares for the United States and other major steel traders are shown in Table A32 of Appendix 5. Using this relationship, the present study's estimate of the United States import demand elasticity (-4.17), and Yntema's average domestic demand elasticity

estimate of -0.15, it is possible to derive the elasticity of domestic supply for steel:

$$\eta_M = \frac{D}{M}\eta_D - \frac{S}{M}e_D$$

$$e_D = \frac{\eta_M - \frac{D}{M}\eta_D}{-\frac{S}{M}}$$

$$= \frac{-4.17 - (14.80)(-0.15)}{-13.30}$$

$$= \frac{-1.95}{-13.30}$$

$$e_D = 0.146$$

This or any other statistical estimate of supply elasticity, however, must be severely qualified. The qualification, as Milton Friedman points out, stems from the fact that it is "impossible to define the average cost of a particular firm for different hypothetical outputs independently of conditions of demand" due to the existence of specialized resources.[53] Even under constant cost conditions the supply curve of a monopolistic industry like steel may be upward sloping depending on the manner in which demand shifts outward.[54] Although the competitive firm operating in the range of constant returns to scale would have infinitely elastic domestic and export supply functions, the same may not be true for the monopolist. Nevertheless, even the imperfectly competitive industry's supply depends, at least in part, on its factor costs. Thus, a look at conditions underlying

domestic steel supplies may yield some clue to domestic supply elasticities.

The basic raw materials of the steel industry include iron ore, scrap, coke, and other energy sources. Since many iron ore mines have close links with domestic steel producers, import prices are more indicative of the cost of this factor of production. The f.o.b. import prices of iron ore are presently continuing in a long-term decline in the United States and abroad. However, c.i.f. price decreases are less pronounced because of increases in port charges, unloading costs, inland transport, and storage costs, despite a decline in shipping rates.[55] Scrap prices in Europe, Japan, and the United States have also generally declined over the last ten years. Though they rose in early 1968 in response to a "somewhat sharp upturn in demand," scrap prices decreased markedly later in the year.[56] The quantity of coke used in making a ton of pig iron has fallen annually in recent years, and the concurrent trend in coke prices has been the same.[57] Increased demand in all countries, and instability in Middle East supplies to Europe, have contributed to increases in petroleum prices facing steel producers. The use of electricity is increasing in all countries, along with natural gas and oxygen.[58] In general, purchases of raw materials as a percent of the value of total domestic shipments in the United States has increased slightly from 41 to 44 percent in the last 10 years.[59] No comparable figures could be found for foreign

steel producers. It appears that all the major steel-trading countries could expand steel production without increasing their per unit raw material costs appreciably.

While a rise in productivity occurred in every country but the United States, all major steel traders, except Japan, experienced a decrease in total employment in steel in 1967.[60] Labor productivity in steel has not been compared between countries, even in studies begun with that purpose in mind.[61] In general, an indication of trends during 1966 and 1967 in the steel countries is given by the statement that "manpower costs as a proportion of total costs have fallen in some (OECD) Member countries, while in others, the increase in productivity over the period under review has not fully made up for increases in the cost of labour."[62]

The tightness of the labor market in general is as important a consideration as current labor costs per unit of output. Here, there is a significant difference between periods of high or low levels of economic activity.

During inflationary periods, there is little unemployment and the cost of attracting more labor to the steel sector, for instance, would be high. The difficulties of expanding steel output when there is full employment are illustrated by the recent complaints of United States steel producers about the tight labor market.[63] In contrast, when higher rates of unemployment exist, the United States and the other major steel traders could conceivably achieve a costless reallocation

of labor and their domestic supply elasticities would be correspondingly greater.

Strong support for the estimate that domestic supply is infinite, at least for small increases in output when there is no inflation, comes from data on capacity utilization in the United States and abroad. Crude steel production/capacity ratios in 1967 were 73 percent for the United States,[64] 80 percent for Europe and Canada, and 92 percent for Japan.[65] These have probably increased in 1969, though no consistent estimates are available.

In contrast, the United States wholesale price index for steel rose from 77.4 to 111.0 between 1954 and 1958, indicating a less than perfectly elastic long-run domestic supply.[66] However, domestic supply appears to be very elastic for the intervening period of 1959 to 1965; prices rose by less than four percentage points, while domestic shipments increased by one-third. Larger domestic price increases occurred in 1966 and succeeding years as inflationary pressures grew.

Although the domestic steel supply elasticity derived with equation (1) is inelastic, there seems to be substantial support for the view that the elasticity approaches infinity within some range of output levels. It is possible, however, that these contradictory estimates can be reconciled by positing the behavior of the elasticity under different economic conditions. During times of increased economic activity in general and near-capacity production of steel in

particular, domestic supply may be highly inelastic, but when opposite market conditions prevail, output may fall to the very elastic range of the domestic supply schedule for steel. Therefore, this study's estimates of the effects of nontariff barriers will employ alternative assumptions concerning domestic supply elasticities. First, they are assumed to be infinite, so that import demand decreases by the full value of the subsidy. Second, the domestic supply elasticities will take the value of .146.

IV. Foreign Import Demand Elasticities.

A. The Problem.

There are numerous statistical estimates of import demand elasticities for some countries.[67] A few of these estimates are for steel, and several more apply to broader commodity groups in which steel is an important item. Specific steel estimates, however, are only available for some foreign countries not considered in this study,[68] or for significantly different time periods.[69] Deficiencies in country data in some cases make direct price elasticity estimates impossible. In other cases they would make the results incomparable with the United States estimates, since the latter are based on quarterly data for a precisely defined steel category. Therefore, foreign import demand elasticities are inferred from readily available data and compared with independent estimates for broader commodity groups.

B. The Assumption of Identical Domestic Elasticities.

Similarities in culture and other demographic factors, state of economic development, pattern of industrialization, technology, and steel industry structure among the ten countries considered here suggest that their domestic demand and supply schedules are also about the same. Such an assumption has been used before in studies of differences in effective tariffs,[70] and estimates of the restrictiveness of tariffs.[71] This assumption will also be employed here in order to facilitate the calculation of foreign import demand elasticities and the results compared with the few independent estimates available.

C. The Method of Calculation.

Foreign price elasticities are inferred from the United States estimates, import share ratios, and the a priori relation between the elasticities and ratios, as shown in formula (1). On the assumption of equal domestic demand and supply elasticities for steel in all industrial countries, foreign elasticities (η_M) can be derived by dividing the domestic demand and supply elasticities by the share of imports in domestic consumption and production respectively, and summing the absolute value of their products. The appropriate import ratios for this computation were obtained from the OECD and are presented in Table A32 of Appendix 5 at the end of this study.

Note that domestic supply elasticities (e_D) may differ markedly under different economic conditions. Since import demand depends in part on domestic supply, alternative estimates of supply elasticities will yield different import demand figures. In particular, if the industry is operating in the infinitely elastic range of the domestic supply schedule, formula (1) shows that import demand elasticities (η_M) will also be infinite. On the other hand, if $e_D = .146$, then the η_M for each country will equal the values appearing below in Table 2.

Table 2
Elasticities of Import Demand for Steel with Respect to Price

Belgium	-1.72
Canada	-2.52
France	-1.21
West Germany	-1.95
Italy	-1.69
Japan	-44.44
Luxembourg	-1.72
Netherlands	-0.44
United Kingdom	-4.78
United States	-4.17

Source: See text.

D. Other Estimates.

Independent verification of the latter price elasticity estimates was possible for a few countries. DeVries' steel import demand elasticity estimates based on information provided by United States commodity experts range from -3.14 to -4.53.[72] This study's statistical estimate for the United

States falls within this range, and is also close to Kreinin's estimate of -4.71 for United States imports of manufactures.[73] Similarly, Scott calculated the British price elasticity of demand for imported manufactures and found it equal to -6, a figure which is close to the inferred elasticity for the United Kingdom.[74]

For the most part, Houthakker and Magee's recent elasticity estimates for total imports are lower than other independent results.[75] Nevertheless, they tend to support this study's conclusion that Japan has one of the highest elasticities of import demand of the ten countries considered here. Moreover, ranking their elasticities for the EEC countries by size shows that the relative positions of their estimates and this study's are substantially the same: Belgium-Luxembourg and Germany have the highest elasticities, followed in order by Italy, France, and the Netherlands.

The present study's Canadian elasticity estimate of -2.52 receives the most support and this independent verification comes from several sources. Kemp, for instance, calculated elasticities ranging from -1.28 to -3.97 for imports in a steel-dominated category called "materials for investment in structures." The average of these estimates is very close to the inferred elasticity. Moreover, another important steel group including equipment for producers was assigned an elasticity of -2.61 by Kemp.[76]

E. World Demand for Steel Imports.

Studying the impact of export subsidies requires a knowledge of the export demand facing the subsidizing country, and this depends partly on the total demand for imports. Consequently, it is useful to note the relationship between the elasticity of import demand for each country (η_i) and the elasticity of world demand for imports. (η_w). As the following derivation illustrates η_w is the weighted average of η_i. The weights are the share of each (i_{th}) country's imports (M_i) in total world imports (M_w). Where P is the world trade price, and d denotes a small change:

$$\eta_w = \frac{dM_w}{M_w} \cdot \frac{-P}{dP}$$

$$= \sum_{i=1}^{n} \frac{dM_i}{M_w} \cdot \frac{-P}{dP} \qquad \text{since } M_w = \sum_{i=1}^{n} M_i$$

$$= \sum_{i=1}^{n} \frac{dM_i}{M_w} \cdot \frac{M_i}{M_i} \cdot \frac{-P}{dP} \qquad \text{since } M_w \text{ is a constant common denominator.}$$

$$= \sum_{1=1}^{n} \frac{dM_i}{M_i} \cdot \frac{-P}{dP} \cdot \frac{M_i}{M_w}$$

$$= \sum_{i=1}^{n} \frac{dM_i}{M_i} \cdot \frac{-P}{dP} \cdot \frac{M_i}{M_w}$$

$$\eta w = \sum_{i=1}^{n} \eta_i \cdot \frac{M_i}{M_w}$$

Since the ten major steel-trading countries account for about 80 percent of Free World imports, the weighted average of their import demand elasticities should yield a reasonable

approximation of the elasticity of world demand for steel. Therefore averaging the figures appearing in Table 2 and weighting them according to the import shares in Appendix 10, yields a value of -3.162 for η_W. Alternatively, if any $\eta_i = \infty$ (due to $e_D = \infty$), then $\eta_W = \infty$.

V. Export Supply Elasticities.

A. Method of Calculation.

The elasticity of supply for steel exports together with import demand determines the distribution of the burden of a tariff or other cost imposed by trade restrictions. It also shows the quantity of exports retracted due to the imposition of trade barriers. The more inelastic is the export supply, the more the exporter absorbs the cost, and the less he decreases the quantity supplied. Estimates of supply elasticities are presented here and checked against some independent observations. The estimation method used here is based on the precise a priori relationship between domestic demand and supply elasticities, and export supply elasticities (η_D, e_D, and e_X respectively). This connection follows from considering the quantity of exports (X) to be the difference between the quantity of domestic supply (S) and demand (D) at prices (P) above domestic equilibrium. Employing d to indicate a small change, the equation for export supply elasticities can be written:

$$e_X = \frac{dX}{X} \cdot \frac{P}{dP}$$

$$= \frac{d(S-D)}{(S-D)} \cdot \frac{P}{dP}$$

$$= \frac{dS + dD}{dP} \cdot \frac{P}{S-D}$$

$$= \frac{dS}{dP} \cdot \frac{P}{S-D} + \frac{dD}{dP} \frac{P}{S-D}$$

$$= \frac{P}{S} \cdot \frac{dS}{dP} \cdot \frac{S}{S-D} + \frac{P}{D} \cdot \frac{dD}{dP} \cdot \frac{D}{S-D}$$

$$= \frac{dS}{S} \cdot \frac{P}{dP} \frac{S}{S-D} + \frac{dD}{D} \cdot \frac{P}{dP} \frac{D}{S-D}$$

$$(2) \qquad = e_D \cdot \frac{S}{X} + \eta_D \cdot \frac{D}{X}$$

Using equation (2), the information on the share of exports in production and consumption shown in Table A33 of Appendix 5, and the domestic elasticities (-0.150 and 0.146) discussed in section III. of this chapter, this study calculated export supply elasticities (e_i) for each of the major steel-trading countries. These estimates are shown in Table 3. Of course, the alternative estimate of infinite domestic supply elasticities ($e_D = \infty$) would yield infinite export supply elasticities for each country. It also follows in the latter case, that the world supply of steel exports would be infinitely elastic (i.e. $e_W = \infty$). Where $e_D = .146$, on the other hand, the relationship between e_i and e_W is not so readily apparent. Nevertheless, the evaluation of export subsidies requires knowledge of the demand for a country's exports, which in turn depends in part on world export supply.

Table 3
The Price Elasticity of the Supply of Steel Exports from Each of the Major Steel-Trading Countries

Belgium	0.209
Canada	3.977
France	0.831
Germany	0.817
Italy	2.431
Japan	1.831
Luxembourg	0.209
Netherlands	0.310
United Kingdom	1.849
United States	34.194

Source: See text.

Therefore, the relationship between e_i and e_W was derived, and e_W was found to be the weighted average of e_i. The weights are the share of each (i_{th}) country's exports (X_i) in total world exports (X_W). Where P is the world trade price, and d denotes a small change:

$$e_W = \frac{dX_W}{X_W} \cdot \frac{P}{dP}$$

$$= \frac{\Sigma\, dX_i}{X_W} \cdot \frac{P}{dP} \quad \text{since } \Sigma X_i = X_W$$

$$= \sum_{i=1}^{n} \frac{dX_i}{X_W} \quad \frac{X_i}{X_i} \quad \frac{P}{dP} \quad \text{since } X_W \text{ is a common constant denominator}$$

$$= \sum_{i=1}^{n} \frac{dX_i}{X_i} \cdot \frac{P}{dP} \quad \frac{X_i}{X_W}$$

$$= \sum_{i=1}^{n} \frac{dX_i}{X_i} \cdot \frac{P}{dP} \cdot \frac{X_i}{X_W}$$

$$e_W = \sum_{i=1}^{n} e_i \frac{X_i}{X_W}$$

Since the ten major steel-trading countries account for about 90 percent of Free World exports, the weighted average of their export supply elasticities gives a good approximation of the world export supply elasticity. After averaging the figures in Table 3 with weights shown in Table A33 of Appendix 5, one obtains a value of 1.755 for e_W where $e_D = .146$.

Note that e_W is not the appropriate elasticity to match with each country's import demand elasticity (η_M) in order to assess the impact of trade restrictions. Instead, the elasticity of supply of exports (e_{Mi}) facing each (i_{th}) country must be determined, and it is precisely related to e_W. Using the standard notation of this chapter, e_{Mi} may be defined as follows:

$$e_{Mi} = \frac{dX_W}{M_i} \cdot \frac{P}{dP}$$

$$= \frac{dX_W}{M_i} \cdot \frac{X_W}{X_W} \cdot \frac{P}{dP}$$

$$= \frac{dX_W}{X_W} \cdot \frac{P}{dP} \cdot \frac{X_W}{M_i}$$

$$e_{M_i} = e_W \cdot \frac{X_W}{M_i}$$

Thus, e_{M_i} and e_W vary inversely according to the share of world exports which the i_{th} country imports. These shares are also listed in Table A33 of Appendix 5, for each country, and the elasticity of supply of exports to each country appears in Table 4 below.

Table 4
The Price Elasticity of the Supply of Steel Exports to Each of the Major Steel-Trading Countries

Belgium	79.82
Canada	78.24
France	17.88
Germany	16.36
Italy	28.87
Japan	216.79
Luxembourg	149.17
Netherlands	37.21
United Kingdom	58.09
United States	9.72

Source: See text.

B. Other Estimates.

Direct statistical estimation of the export supply elasticities is difficult mainly because of an identification problem. The extent to which this study's statistical estimate of United States import demand elasticity actually measured demand and not supply depended on a stable demand function and a highly variable supply function. The same attributes prevent the same price-quantity relations from specifying an export supply elasticity.

Nevertheless, casual inspection of empirical evidence tends to support the estimate that the elasticity of long-run supply of steel from the rest of the world ($e_{M_{US}}$) is infinite. This study's index of the United States import prices in Appendix 5 shows fourth quarter prices to have varied no more than six percentage points in 11 of the last 15 years. The average United States f.o.b. import price was $116 in the fourth quarter of 1954, compared with a 1968 price of $111.

Over the same time period, United States import volume increased by 210 percent. Although there have been large quarterly price variations in these years, the trend indicates that the long-run foreign supply of exports to the United States is infinitely elastic.

A very elastic United States supply is indicated by observing the United States export market, where export prices declined from $207.65 per ton in 1961 to $198.45 in 1965.[77] During this five-year period, United States export volume increased from 1,990 to 2,496 tons.[78] Likewise, the response of United States producers to competition in their export markets indicates a very elastic export supply. According to a Congressional study, few attempts are made to align export pricing on the substantially lower prices quoted in third markets by the European or Japanese steel producers. "In recent years, these price policies have meant that the United States producers withdraw from exporting" rather than lower price.[79]

It may also be possible to estimate $e_{M_{US}}$ more precisely using the relationship between it and $\eta_{M_{US}}$ on the one hand, and the distribution of the burden of a tariff change on the other. The principles established in the derivation on page 38 above lead to the relationship below. Where t denotes the change in tariffs as a percent of f.o.b. import price, and p denotes the percentage change in f.o.b. import price,

$$\frac{e_{M_{US}}}{\eta_{M_{US}}} = \frac{t-p}{p}$$

$$(3) \qquad e_{M_{US}} = \frac{t-p}{p}\ \eta_{M_{US}}$$

Recent changes in United States steel duties occurred as the result of concessions negotiated in the "Dillon Round" which was formally completed in July, 1962; and in the "Kennedy Round" of 1967. Tariff changes associated with the first negotiations are most easily obtained from the United States Department of Commerce,[80] but this organization has not yet reported post-"Kennedy Round" duty-rates.

Average prices for the year preceding and following the tariff concessions were calculated from f.o.b. unit value data provided by the Department of Commerce.[81] The differences between the pre- and post-tariff prices as a percent of their average were then computed. The resulting value for p is 0.006, and t=0.015. The estimate for $e_{M_{US}}$ derived from equation (3) is 6.09.

Of course, it is not possible to tell if the only influence on p was t, because in the absence of a comparable group of imports whose duties were not reduced, the impact of other factors affecting p cannot be measured. To the extent that this estimate of $e_{M_{US}}$ for the United States is reliable, however, it tends to substantiate the inferred estimate of 9.72 from Table 3.

In addition, one independent source gives a statistical estimate of the elasticity of supply for exports of steel plate from Germany (0.27).[82] While this figure is lower than the one derived here (0.817), they both show that German supply is inelastic. The same study also found e_X of the United Kingdom to be fairly small but larger than the German figure--a result which conforms with the present study's elasticity estimate.

VI. The Elasticity of Demand for Exports.

The incidence of an export subsidy determines the extent to which it erects an import barrier, and depends on the elasticity of export supply and the elasticity of demand facing the (i_{th}) subsidizing country's exports (η_{X_i}). The latter elasticity has not been estimated so far, though it is quite possible to derive it from information on export shares, the elasticity of world demand for imports (η_W) and the elasticity of supply from the rest of the world (e_W). Denoting the quantity of exports supplied by the rest of the world as X_{W-i}, and otherwise using a notation which should be quite familiar by now, one expresses η_{Xi} in the following way:[83]

$$\eta_{X_i} = \frac{dX_i}{X_i} \cdot \frac{-P}{dP}$$

$$= \frac{d(X_W - X_{W-i})}{X_W - X_{W-i}} \cdot \frac{-P}{dP} \quad \text{since } X_W = X_i + X_{W-i}$$

$$= \frac{d(X_W - X_{W-i})}{dP} \cdot \frac{-P}{X_W - X_{W-i}}$$

$$= \frac{dX_W}{dP} \cdot \frac{-P}{X_W - X_{W-1}} + \frac{dX_{W-1}}{dP} \cdot \frac{-P}{X_W - X_{W-1}}$$

since $d(X_W - X_{W-1}) = dX_W + dX_{W-1}$

$$= \frac{dX_W}{dP} \cdot \frac{-P}{X_W - X_{W-1}} \cdot \frac{X_W}{X_W} - \frac{dX_{W-1}}{dP} \cdot \frac{P}{X_W - X_{W-1}} \cdot \frac{X_{W-1}}{X_{W-1}}$$

$$= \frac{dM_W}{M_W} \cdot \frac{-P}{DP} \frac{X_{W-1}}{X_W - X_{W-1}} - \frac{dX_{W-1}}{X_{W-1}} \cdot \frac{P}{dP} \frac{X_{W-1}}{X_W - X_{W-1}}$$

since $X_W = M_W$

$$(4) \quad \eta_{X_i} = \eta_W \frac{X_W}{X_i} - e_W \frac{X_{W-i}}{X_i}$$

The export shares of each steel country appear in Table A33 of Appendix 5, and the values for η_W and e_W have been estimated at -3.162 and 1.755 respectively (when $e_D = .146$). This information and equation (4) yield estimates of η_X for the seven major steel traders which grant export subsidies: the estimates appear in Table 5. Alternatively, if η_W or e_W are infinite, then η_X for any country equals infinity.

Table 5
The Price Elasticity of Demand for the Steel Exports of Some Major Steel Traders

Belgium	-28.23
France	-38.80
Italy	-127.14
Japan	-23.42
Luxembourg	-58.20
Netherlands	-105.01
United Kingdom	-63.57

Source: See text.

VII. Footnotes

[1]See Kindleberger, op. cit., pp. 162-3.

[2]The Steel Import Problem, op. cit., p. 12.

[3]Steel Imports, op. cit., p. 152.

[4]C. M. Rehmus, "Collective Bargaining in the Basic Steel Industry," Proceedings of the American Statistical Association, September 7, 1962.

[5]R. J. Ball and K. Marwah, "The United States Demand for Imports, 1948-1958," The Review of Economics and Statistics, November, 1962, pp. 395-401.

[6]M. E. Kreinin, "Price Elasticities in International Trade," Review of Economics and Statistics, November, 1967, pp. 510-516.

[7]For the method see J. Durbin and G. S. Watson, "Testing for Serial Correlation in Least Squares Regression," Pts. I and II, Biometrika, 1950 and 1951.

[8]For the method see J. Johnston, Econometric Methods, McGraw-Hill: New York, 1963, pp. 177-200.

[9]United States Department of Commerce, World Trade Information Service, Part 3: Statistical Reports, 1954-1960, and Overseas Business Reports, 1961-1968, United States Government Printing Office: Washington, D.C.

[10]Alternative Commercial Policies, op. cit., p. 47.

[11]World Trade Information Service and Overseas Business Reports, op. cit.

[12]I. Kravis, R. Lipsey, and P. Bourque, Measuring International Price Competitiveness: A Preliminary Report, National Bureau of Economic Research: New York, 1965, p. 31.

[13]Ibid., p. 33.

[14]Ibid., p. 37.

[15]United States Department of Labor, Bureau of Labor Statistics, Wholesale Price Index, United States Government Printing Office: Washington, D.C., various years.

[16]See United States Department of Labor, Bureau of Labor Statistics, BLS Bulletin, No. 1214, September, 1967, p. 3; No. 1257, July, 1959, p. 51; No. 1411, June, 1965, pp. 27, 90, 91, United States Government Printing Office: Washington, D.C.

[17]M. J. Bailey, "Administered Prices in the American Economy," The Relationship of Prices to Economic Stability and Growth: Compendium of Papers Submitted by Panelists Appearing before the Joint Economic Committee, 85th Congress, 2nd Session, March 31, 1958, United States Government Printing Office: Washington: D.C., 1958, pp. 91-95.

[18]Bailey, op. cit., p. 92.

[19]United States Department of Labor, Bureau of Labor Statistics, "Handbook of Methods for Surveys and Studies," BLS Bulletin, No. 1458, United States Government Printing Office: Washington, D.C., 1967, p. 91.

[20]Ibid., p. 92.

[21]Ibid.

[22]Steel Prices, op. cit., p. 244.

[23]W. Adams and J. Dirlam, "Steel Imports and Vertical Oligopoly Power," American Economic Review, September, 1964, pp. 626-655.

[24]See Federal Reserve System, Federal Reserve Bulletin.

[25]United States Department of Commerce, Survey of Current Business and Business Statistics, United States Government Printing Office: Washington, D.C., various years.

[26]American Iron and Steel Institute, Annual Statistical Report, 1958, p. 13.

[27]Ibid., 1958, 1959.

[28]Senate Judiciary Committee, Administered Prices: Steel, United States Government Printing Office: Washington, D.C., 1957, p. 549.

[29]I attempted to make estimates of the rate of growth of capacity in the 1960's based on capital expenditures and depreciation figures, but I could find no consistent relationship between increases in capacity and net annual investment.

[30]The Iron Age, September 5, 1968, p. 85.

[31]The Iron Age, May 6, 1954, p. 199 and June 10, 1954, p. 163.

[32]The Iron Age, April 28, 1955.

[33]The Iron Age, January 29, 1959, p. 129, and January 7, 1960, p. 371.

[34]The Iron Age, February 15, 1962, p. 143.

[35]The Iron Age, April 18, 1963, p. 163.

[36]The Iron Age, June 17, 1965, p. 97.

[37]The Iron Age, June 17, 1965, p. 97.

[38]The Iron Age, February 29, 1968, p. 45; July 4, 1968, p. 81; and September 5, 1968, p. 85.

[39]United States Department of Labor, Bureau of Labor Statistics, "Work Stoppages-Water Transportation Industry, 1927-59," BLS Report, No. 176, p. 7 and BLS Bulletin, No. 1460, p. 22.

[40]United States Department of Labor, Bureau of Labor Statistics, "Employment and Earnings Statistics," BLS Bulletin, No. 132-5, p. 839.

[41]With imports lagged one quarter after price and income, the resulting regression equation was:

$$Y = \underset{(0.062)}{-0.478} + \underset{(0.332)}{0.242}\, X_1 + \underset{(0.280)}{5.067}\, X_2 - \underset{(0.128)}{0.262}\, X_3$$

$$+ \underset{(0.064)}{0.351}\, X_4 - \underset{(0.663)}{0.966}\, X_5 \quad R = 0.969$$

In the lagged equation, price elasticity was positive and the multiple correlation coefficient was lowmr than in the unlagged model. Also the partial correlation coefficient between relative prices and import volume was a low 0.099 when lags were introduced, but an absolutely higher -0.366 without them. Therefore, the results of the lagged regression were rejected and unlagged estimates were used for price and income elasticities.

[42]1954: C/M = 114, calculated from Steel Imports, pp. 252, 269; 1967: C/M = 14.8.

[43]Noted below, p.65.

[44]This assumes no change in domestic supply and demand elasticities.

[45]See G. C. Chow, "Test of Equality between Sets of Coefficients in Two Linear Regressions," Econometrica, Vol. 28, No. 3, pp. 591-605, July, 1960.

[46]H. Houthakker and S. Magee, "Income and Price Elasticities in World Trade," Review of Economics and Statistics, May, 1969, p. 116.

[47]For the method see J. Durbin and G. S. Watson, "Testing for Serial Correlation in Least Squares Regression," Pts. I and II, Biometrika, 1950 and 1951.

[48]De Vries' empirical test verifying the negative correlation compared those commodities with above-average import shares and those with below-average shares. See B. A. De Vries, "Price Elasticities of Demand for Individual Commodities Into the U.S.," IMF Staff Papers, April, 1951, pp. 43-45.

[49]Council of Economic Advisors, Report to the President on Steel Prices, op. cit., p. 12.

[50]Ibid.

[51]Alternative Commercial Policies, op. cit., p. 43.

[52]Temporary National Economic Committee, "The Iron and Steel Industry: United States Steel Corporation Studies, Prices and Costs," Investigation of Concentration of Economic Power, Part 26, United States Government Printing Office: Washington, D.C., January, 1940, pp. 13592-13594.

[53]See M. Friedman, Price Theory: A Provisional Text, Aldine: Chicago, Revised, 1962, p. 142.

[54]C. E. Ferguson, Microeconomic Theory, Irwin: Homewood, Illinois, 1966, pp. 236-238.

[55]OECD, The Iron and Steel Industry in 1967 and Trends in 1968, op. cit., pp. 46-49.

[56]Ibid., pp. 50, 51.

[57]Ibid., pp. 50-54.

[58]Ibid., p. 54.

[59]AISI, Charting Steel's Progress, 1967, pp. 60, 61.

[60]OECD, op. cit., Tables 23 and 25.

[61]For instance see United Nations, Economic Commission for Europe, International Comparisons of Labour Productivity in the Iron and Steel Industry, United Nations, New York, 1967, p. 13.

[62]OECD, op. cit., p. 55.

[63]M. K. Drapkin, "Steel Workers Become Much Sought after as Mills Expect Continued Strong Activity," The Wall Street Journal, May 21, 1969, p. 7.

[64]See Appendix 6 of this chapter.

[65]OECD, op. cit., 1967, p. 46.

[66]See Appendix 2 of this chapter.

[67]For references to estimates for a few steel products see H. S. Cheng, "A Collection of Statistical Estimates of Elasticities in International Trade," International Monetary Fund Staff Papers, April, 1959, pp. 107-158.

[68]See J. Polak, An International Economic System, University of Chicago Press: Chicago, 1953; and Morgan and Corlett, Journal of the Royal Statistical Society, Series A, CXIV Part III, 1951, pp. 307-52.

[69]T. Chang, Cyclical Movements in the Balance of Payments, Cambridge, England, 1951.

[70]B. Balassa, Trade Liberalization Among Industrial Countries, Council on Foreign Relations, New York, 1967, p. 49.

[71]M. Kreinin, Alternative Commercial Policies, op. cit.

[72]For a review of estimates that have been made see B. A. de Vries, "Price Elasticities of Demand for Individual Commodities Into the United States," International Monetary Fund Staff Papers, April, 1951, pp. 43-45.

[73]Kreinin, op. cit., p. 46.

[74]He calculates a very large import demand elasticity (- 15) for steel in post-war years, but notes that this is the result of the unusual conditions of British steel shortages in the face of government price control.

[75]Houthakker and Magee, op. cit., p. 113.

[76]M. Scott, A Study of United Kingdom Imports, Cambridge University Press, 1963, p. 184.

[77]Steel Imports, op. cit., p. 78.

[78]Ibid., p. 76.

[79]Ibid., p. 126.

[80]United States Department of Commerce, Bureau of the Census, United States Commodity Exports and Imports as Related to Output, United States Government Printing Office: Washington, D.C., 1958 and 1963.

[81]United States Department of Commerce, World Trade Information Service, Part 3: Statistical Reports, 1954-1960, and Overseas Business Reports, United States Government Printing Office: Washington, D.C., 1961-1968.

[82]Morgan and Cordett, op. cit., p. 351.

[83]This formula is also derived in F. C. Shorter, "Jute Production Policies of India and Pakistan," Indian Economic Journal, III, July, 1955, p. 44.

CHAPTER FOUR
THE RESTRICTIVENESS OF NONTARIFF BARRIERS TO STEEL

I. Introduction.

Using the elasticities derived in the preceding chapter and the information on nontariff barriers summarized in Chapter 2, it is now possible to estimate the value of steel imports excluded by each of the major steel-trading countries. To determine the restrictive effects of these barriers it is convenient to divide them into four groups: government procurement policies, quantitative restrictions like quotas and "voluntary" export limitations, subsidies, and other nontariff barriers.

II. Government Procurement Policies.

One method of measuring the amount of potential imports excluded by government procurement policies would be to compare import/consumption ratios for the public and private sectors of each country.[1] The extent to which these ratios differed would reflect the amount of bias in government purchasing; the increase in government imports necessary to bring the ratios into equality would indicate the amount of potential trade deterred. The Organization for Economic Cooperation and Development tried to make a similar comparison, but was unable to obtain the necessary information, since most

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government agencies do not specify which of their purchases are from abroad, nor report their expenditures according to product category.[2]

In the absence of data on actual government imports of steel (except for AID), this study can only estimate the restrictiveness of the percentage price preferences applied to government procurement, summarized in Table 1 of Appendix 1. These price preferences are equivalent to advalorem import duties on c.i.f. value including the duty, an equivalency which arises from the similarity between tariffs and nontariff barriers discussed in Chapter 2. Since the trade data are valued exclusive of duty, however, the preferences are expressed as a percent of c.i.f. duty-free import prices. A recent report on post-Kennedy Round Tariffs gives steel duty rates (shown in Table 20 below) for the major steel-trading countries.[3] Therefore, the original price preferences have been multiplied by one plus the tariff rate in each country in order to determine the appropriate nontariff barrier rate. They appear in the first row of Table 6 below.

Using elasticities (η_M and e_M) derived in Chapter 3 and assuming that η_M is applicable to each government's import demand, the value of steel imports restricted by the price differential can be estimated. Of course, such estimates do not take into consideration the unquantified domestic preferences of the British, French, German, Italian, and Japanese governments, and may not reflect all the bias in

Table 6
Steel Consumption, Imports, and Price Preferences
of Governments in the Major Steel-Trading Countries

	Importing Countries: Belgium	Canada	Luxembourg	Netherlands	United States Defense	AID	Other
Price Preferences[a]	10.720	10.800	10.720	10.720	30.836	NA	6.522
Estimated Government Steel Consumption[b]	50.949	340.837	1.700	64.768	2035.155	163.000	2172.137
Estimated Government Steel Imports							
Total	19.615	39.196	1.286	43.200	138.390	145.070	147.705
From Belgium	NA	2.211	.457	12.476	12.856	13.477	13.722
Canada	.023	NA	.011	.108	13.590	14.246	14.505
France	4.274	1.325	.206	4.272	8.456	8.864	9.025
Germany	6.543	2.689	.315	21.233	21.603	22.645	23.057
Italy	.280	.188	.013	.682	2.878	3.017	3.072
Japan	.615	4.166	.029	.199	57.238	60.001	61.091
Luxembourg	2.436	.737	NA	4.156	4.276	4.483	4.564
Netherlands	2.348	.016	.113	NA	2.671	2.800	2.851
United Kingdom	.386	3.869	.019	1.171	9.936	10.416	10.605
United States	1.167	21.895	.017	.376	NA	NA	NA
Total Government Imports Subject to Price Preferences[c]	14.831	39.196	.716	26.568	138.390	NA	147.705

Notes:
a. As a percent of c.i.f. import price excluding duties and the preference.
b. The c.i.f. value in millions of dollars.
c. Less than row three for Benelux members by the amount of imports from other members.
NA Not applicable.

Sources: See text.

the purchasing policies of the Benelux and North American governments.

The value of restricted steel imports (dV) can be obtained by figuring the decrease in potential government imports (V) resulting from imposition of the percentage price preference. If the price margin as a percent of c.i.f. import price (P_0) is denoted by t, then in the eyes of government purchasing agents the price of imports would rise by $\frac{e_M}{\eta_M + e_M} \cdot t \cdot P_0 = dP,$ while the actual c.i.f. import price (P_0) would fall (to P_1) by $\frac{\eta_M}{\eta_M + e_M} \cdot t \cdot P_0 = dP.$ This proposition follows from generalizing the incidence analysis on page 38 above.

Note that when the elasticity of supply for imports (e_M) is infinite, the actual import price would not change, despite the elimination of t. In this case, we can predict how much the c.i.f. value of government imports (V) will fall due to imposition of the price preference (t). Denote the quantity of government imports by M, and a small change by d. Using the subscripts 0 and 1 to indicate values before and after imposition of the import restriction, the change in the value of government imports may be written:

$$\begin{aligned} dV &= V_1 - V_0 \\ &= P_1M_1 - P_0M_0 \\ &= P_0(M_1 - M_0) \quad \text{since } P_0 = P_1 \text{ when } e_M = \infty \end{aligned}$$

$$= -P_0 dM$$

$$= -P_0 M_0 \left(\frac{dM}{M_0} \right) \frac{P_0}{dP'} \left(\frac{dP'}{P_0} \right)$$

$$= V_0 \eta_M \, t \left(\frac{e_M}{e_M + \eta_M} \right)$$

$$= V_0 \eta_M \, t \left(\frac{1}{1 + \eta_M / e_M} \right) \quad \text{dividing through by } e_M$$

$$(1) \qquad = V_0 \eta_M \, t \text{ where } e_M = \infty$$

In a more general case, we can also compute the change in government steel imports when η_M and e_M are less than infinite:

$$dV = V_1 - V_0$$

$$= P_1 M_1 - P_0 M_0$$

$$= P_1 (M_0 - dM) - (P_1 + dP) M_0$$

$$= P_1 M_0 - P_1 dM - P_1 M_0 - dP M_0$$

$$= -P_1 dM - dP M_0$$

$$= -P_0 M_0 (dP/P_0) - P_0 M_0 (dM/M_0) (P_1/dP) (dP/P_0)$$

$$= -V_0 (dP/P_0) - V_0 e_M (dP/P_0)$$

$$= -V_0 (dP/P_0) (e_M + 1)$$

$$(2) \qquad = -V_0 (\eta_M / e_M + \eta_M) \, t \, (e_M + 1)$$

Where the elasticity of import demand (η_M) is infinite, equation (2) is simplified by dividing through with η_M as follows:

$$dV = -V_0 \left(\frac{1}{1 + e_M / \eta_M} \right) t \, (e_M + 1)$$

$$(3) \qquad = -V_0 \, t \, (e_M + 1) \qquad \text{when } \eta_M = \infty$$

Equation (2) can be used to estimate the restrictiveness of price preferences when there is capacity production at home and abroad. When there is excess capacity at home, equation

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(3) applies, while the case of excess capacity abroad is accounted for by equation (1).

Although the actual level of government steel imports (V_1) cannot be found, what the level would be in the absence of price preferences (V_0) can be estimated. If a government's share of total domestic steel consumption is proportional to its share of total domestic consumption of all other goods, the ratio of total government expenditures to gross national product times the total value of steel consumed in each country yields an estimate of the value of steel purchased by each government. These estimates for 1967 are presented in Table 6, Row 2. If each government and its corresponding economy had the same import/consumption ratio for steel in the absence of purchasing preferences, then total government imports (shown in Table 6, Row 3) of steel should have equalled total government consumption times the import ratio of the country as a whole.

Given the values for V_0 and t which appear in Table 6 and the appropriate elasticities from Chapter 3, the three formulas are used to calculate alternative estimates of the total amount of steel imports restricted by price preferences in each of the major steel-trading countries. These are presented in Table 7 along with estimates of the restricted amount of each major steel trader's exports. The change in government imports from each foreign country is computed on the assumption that each foreign steel would have the same share of

Table 7
Steel Imports Exluded by Government Purchasing Policies
(c.i.f. value in millions of dollars)

Importing Country	Estimated Value of Imports Restricted from: Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States	Total Value Restricted
When $e_M, \eta_M < \infty$											
Belgium	NA	.004	.569	.870	.043	.091	———	———	.057	.206	2.730
Canada	.266	NA	.197	.398	.035	.737	.089	.002	.686	5.546	10.732
Luxembourg	———	*	.027	.042	.002	.004	NA	———	.003	.003	.132
Netherlands	———	.006	.292	1.458	.039	.012	———	NA	.069	.018	1.282
United States:											
Defense	4.469	10.453	1.782	3.771	1.883	34.001	1.486	.983	5.923	NA	121.954
AID[a]	12.407	13.129	8.169	20.857	2.767	55.298	4.131	2.580	9.586	NA	133.700
Other	1.026	2.401	.409	.866	.432	7.811	.341	.226	1.361	NA	28.005
When $e_M = \infty$											
Belgium	NA	.004	.794	1.216	.052	.114	———	———	.072	.217	2.754
Canada	.602	NA	.360	.732	.051	1.133	.200	.004	1.953	5.958	10.665
Luxembourg	———	*	38.254	.058	.002	.005	NA	———	.003	.003	.113
Netherlands	———	.005	.203	1.008	.032	.009	———	NA	.056	.018	1.262
United States:											
Defense	16.189	17.114	10.649	27.205	3.624	72.080	5.385	3.363	12.512	NA	174.274
AID[a]	12.407	13.129	8.169	20.857	2.767	55.298	4.131	2.580	9.586	NA	133.700
Other	3.719	3.931	2.446	6.248	.823	16.556	1.237	.773	2.874	NA	40.028
When $\eta_M = \infty$											
Belgium	NA	.012	.845	1.284	.104	.188	———	———	.119	4.436	127.851
Canada	.289	NA	.262	.528	.070	1.274	.096	.002	1.190	83.222	335.436
Luxembourg	———	*	.041	.062	.005	.009	NA	———	.006	.065	11.612
Netherlands	———	.058	.845	4.167	.253	.061	———	NA	.360	1.429	109.638
United States:											
Defense	4.694	20.426	4.676	11.854	2.982	48.936	1.561	1.057	8.549	NA	406.235
AID[a]	12.407	13.129	8.169	20.857	2.767	55.298	4.131	2.580	9.586	NA	133.700
Other	1.078	4.692	1.074	2.723	.685	11.242	.359	.243	1.964	NA	93.320

Notes:
a. Estimated in text.
NA Not applicable.
* less than $1,000.

Source: See text.

both private and government purchases of steel imports in the absence of the price preferences.

For most nontariff barriers the analysis of restrictiveness proceeds on the rather safe assumption that there is no trade diversion caused by discrimination on the part of the EEC and EFTA. The diversionary effects are small, if not nonexistent, because nontariff barriers are usually imposed on all imports irrespective of origin. In the case of government price preferences, however, trade diversion results because Benelux members do not impose them on imports from member countries. Therefore, the estimated pre-preference amount of government imports subject to this official price discrimination (shown in the last row of Table 6) in Belgium, Luxembourg, and the Netherlands does not include estimated imports from other Benelux countries. Moreover, the amount of steel restricted by price preferences (shown in Table 7) in intra-Benelux trade is zero.

The purchasing policies of the United States Agency for International Development (AID) were not subjected to analysis above because they do not state a given preferential margin. Nevertheless, AID has adopted purchasing policies favoring United States steel producers. As a result the proportion of AID steel purchases made in the United States rose from 11 percent in 1960 to 93 percent in 1965.[4] The influence of the change in AID procurement policy on steel exports is indicated by the fact that in 1960 AID-financed steel exports accounted

for 23 percent.[5] At the same time the proportion of AID steel purchased from other developed countries fell from 76 percent to less than one-half of a percent.[6] Since AID has no set percentage price preference, estimating the restrictiveness of its purchasing policies with elasticities is impossible. For now, the direct restrictive effect of this biased procurement on steel imports may be estimated by assuming that the same percentage as in 1960 of AID purchases would come from domestic steel producers if AID were to return to competitive procurement and applying the difference to current AID purchases of steel which are about $163 million.[7] Foreign purchases by AID would increase by 82.0 percentage points (93.0 -11.0) on that assumption. Thus, the value of steel imports excluded by present AID purchasing policies is estimated to be $133.7 million ($163 million x .820).

Because the Benelux governments import a large share of their foreign purchases from fellow members, the volume of steel restricted by each is far less than that excluded by Canadian preferences, even though their price differentials are the same. (See Tables 6 and 7) In contrast, the large price preferences applied by the United States Defense Department, the large bias in AID purchasing, and the large volume of potential Federal imports, combine to make the value of excluded United States steel imports range from almost one-third to two-thirds of a billion dollars

(depending on alternative elasticity estimates). Thus, United States government purchasing policies, under conditions of capacity production at home and abroad, restrict over 20 times the value of steel excluded by the four other governments.

III. Quantitative Restrictions.

A. France.

As noted in Appendix 1 of this study, France imposed a quota of 59,000 tons per month in 1968. The restrictive effect of the French quota may be estimated by first calculating the tariff-equivalent price differential it creates and then estimating the value of steel excluded by it.

In Chapter 2, it was established that the quantity of imports kept out by the quota included the amount that imports would have grown in the absence of the quota. This may be estimated by assuming that the volume of imports is distributed evenly over the year, and that the French income elasticity of demand for steel imports is 1.66 as discussed in Chapter 3. It follows from these assumptions that the 4.5 percent increase in France's real GNP between 1967 and 1968 would have caused steel imports to rise by 7.47 percent at the given price level. The French quota allowed them to rise by seven percent. Therefore, the decrease in demand would equal .47 percent. It follows from the relationships shown in equations (1), (2), and (3) on page 34 above, that the price differential (t) created by the French quota will have different values, depending on alternative estimates for French

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import demand and supply elasticities. When there is capacity production in both France and the other major steel-trading countries, the price differential as a percent of c.i.f. import price is .41 percent. If French import demand is infinitely elastic, however, the differential falls to .03 percent. An infinitely elastic supply of imports to France allows the quota to establish a price differential of .39 percent.

The value of restricted steel imports (dV) can be obtained by figuring the increase in imports resulting from elimination of the quota and its price differential (t). From the section on government procurement we obtain equations (1), (2), and (3). With opposite signs they yield the estimates of restricted French imports of steel appearing in Table 8. Also

Table 8
The Restrictiveness of French Import Quota

Country of Origin	Estimated Value of Excluded Steel (c.i.f. in millions of dollars)			Value of 1968 French Imports (millions of dollars)
	η_M and $e_M < \infty$	$\eta_M = \infty$	$e_M = \infty$	
Belgium	1.097	.094	1.225	259.644
Canada	.005	.001	.005	1.043
Germany	1.256	.154	1.333	282.548
Italy	.213	.047	.215	45.522
Japan	.021	.004	.022	4.615
Luxembourg	.366	.031	.468	86.540
Netherlands	.102	.009	.113	23.881
United Kingdom	.074	.014	.075	16.012
United States	.038	.083	.037	7.879
Total	3.328	3.841	3.200	678.104

Source: See text.

shown is the reduction in French imports from each of the other major steel-trading countries. As Table 8 illustrates, removal of the French quota would have increased 1968 imports by no more than 0.56 percent and United States exports to France by $83 thousand at most.

B. United States.

"Voluntary" limitations on exports to the United States have also been described in Appendix 1. An indication of their restrictive effect on import demand can be obtained by comparing the import limits with estimates of what 1969 United States steel imports would have been in the absence of the "voluntary" quota of 14 million tons. The most recent estimate of 1969 United States GNP is $727.5 billion (in terms of 1958 prices), approximately a 2.8 percent increase over the 1968 level.[8] Given an income elasticity of demand for steel of 2.3 (computed in Chapter 3), and assuming constant relative prices, the volume of United States steel imports in 1969 should have increased by 6.44 percent to 18.8 million tons. Thus, the restrictiveness of this quantitative restriction on United States steel imports in 1969 is estimated to be 4.8 million tons, a 25.5 percent decrease in import demand.

The price differentials caused by quantitative restrictions on exports to the United States also vary with alternative elasticity estimates. They are computed with formulas from page 34 in Chapter 2. In the case of capacity production at home and abroad, the price differential as a percent of

c.i.f. import price is 8.73 percent, while it is 2.62 percent when the United States elasticity of import demand is infinite, and 6.11 percent when the supply of United States imports is infinite. Following the same procedure used for France, the total value of United States steel imports (as well as the amount from each of the major steel traders) excluded by "voluntary" export limitations are estimated and the results appear in Table 9. In contrast to the results for France, however, the United States "quota" is found keeping out about a half-billion dollars of steel imports. Eliminating the limitation would increase the value of United States imports by roughly 25 percent.

Table 9
The Restrictiveness of "Voluntary" Export Limitations on United States Steel Imports

Country of Origin	Value of 1968 United States Steel Imports	Value of Excluded United States Steel Imports		
		η_M, $e_M < \infty$	$e_M = \infty$	$\eta_M = \infty$
	(c.i.f. in millions of dollars)			
Belgium	182.387	18.327	5.777	46.470
Canada	192.807	42.871	25.141	49.125
France	120.059	7.316	5.759	30.589
Germany	306.256	15.453	14.579	78.030
Italy	40.978	7.752	3.683	10.441
Japan	811.427	139.337	60.185	206.741
Luxembourg	60.787	6.108	1.925	15.438
Netherlands	37.924	4.036	1.302	9.662
United Kingdom	140.970	24.293	10.522	35.917
Total	1961.837	499.761	551.009	499.850

Source: See text.

IV. Subsidies.

A. Domestic Subsidies.

This study has found quantifiable subsidies for steel in eight of the ten major steel-trading countries. The various advalorem rates of subsidization appear in Table 10 below, but

Table 10
Transformation of Domestic Subsidization Rates

Subsidizing Country	Total Rate of Subsidy	c.i.f. Nontariff Barrier Rate		c.i.f. Nontariff Barrier Rate (t)[b]	
		$e_D = \infty$	$e_D < \infty$	$e_D = \infty$	$e_D < \infty$
Belgium	.030	.030	.015	.032	.016
Canada	.076	.076	.037	.082	.040
France	.022	.022	.011	.024	.012
Germany	.028	.028	.014	.030	.015
Italy	.018	.018	.009	.019	.010
Luxembourg	.030	.030	.015	.032	.016
Netherlands	.030	.030	.015	.032	.016
United Kingdom[a]	.086	.086	.083	.093	.090

Source: See text.

[a] 8% is fully passed on to steel buyers; see Appendix 3.

[b] As a percent of c.i.f. price excluding duty.

their restrictive effect on imports cannot be estimated until they are converted to advalorem nontariff barrier rates. According to the procedure developed on page 38, the conversion is made by multiplying the rate of subsidization times the ratio of the domestic supply elasticity to the absolute sum of domestic demand and supply elasticities, $\frac{e_D}{e_D + \eta_D}$. Because of alternative estimates concerning the elasticity of domestic

supply, however, this calculation yields different values for the nontariff barriers created by domestic subsidies. For example, when e_D is infinite, the nontariff barrier and subsidization rates are equal; but the latter exceeds the former if e_D is less than infinite. The results of this calculation appear in the second and third columns of Table 10. These columns must also be increased by the appropriate tariff rate in order to express the nontariff barriers in terms of a percent of c.i.f. duty-free price, and this is done in the fourth and fifth columns of Table 10.

If we now denote the present total value of steel imports by V_0, (shown in Table 11 for all the major steel traders) then equations (1), (2), and (3) with opposite signs can be used to estimate the increase in steel imports (dV) arising from removal of the subsidies. The three equations, of course, give alternative estimates of the amount of steel restricted under varying conditions, and the same conditions have influenced the value of the nontariff barrier rates (t). Therefore, it should be noted that equations (1) and (2) employ rates consistent with the less-than-infinite case, while rates calculated with $e_D = \infty$ are applicable to equation (3). The results derived with the equations appear in Table 12.[9]

Despite the fact that half of the other subsidizers import more than the United Kingdom, the latter country excludes more steel than the rest put together. The amount is $119 million if capacity operations prevail at home and

Table 11
Value of 1968 Imports of Iron and Steel Mill Products[a]
(c.i.f. in millions of dollars)

Importing Country	Imports from: Belgium[c]	Canada	France	Germany	Italy	Japan	Luxembourg[d]	Netherlands	United Kingdom	United States	Total Imports
Belgium[c]	———	.296	53.695	82.200	3.532	7.718	30.603	29.513	4.872	14.674	246.377
Canada	16.816	———	10.074	20.456	1.451	31.698	5.605	.149	29.441	166.491	298.027
France	259.644	1.043	———	282.548	45.522	4.615	86.540	23.881	16.012	7.879	678.104
Germany	375.291	.670	218.189	———	68.459	9.467	125.084	90.877	16.740	5.896	987.916
Italy	51.099	3.922	74.949	108.590	———	11.408	17.031	13.574	10.834	9.210	348.250
Japan	.042	.009	.036	1.902	.021	———	.014	.019	1.088	5.645	19.776
Luxembourg[b]	9.381	.023	4.228	6.472	.278	.608	———	2.325	.384	.347	26.389
Netherlands	123.224	1.105	42.196	209.728	6.747	1.975	41.070	———	11.581	3.738	426.647
United Kingdom	19.539	12.559	17.382	39.222	17.576	12.302	6.513	26.778	———	17.329	299.959
United States	182.387	192.807	120.059	306.256	40.978	811.427	60.787	37.924	140.970	———	1961.837

Source: OECD, Trade Statistics, Series C.

Notes:
a. SITC 67 less SITC 671
b. Estimated from BLEU data on the basis of a Luxembourg/BLEU import ratio of .073.
c. BLEU figures from OECD less estimated Luxembourg imports or exports.
d. Estimated from Luxembourg/BLEU export ratio of .333.

Table 12
Estimated Steel Imports Excluded by Domestic Subsidies
(c.i.f. value in millions of dollars)

Importing Country	Imports from: Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States	Total
$h_M, e_M < \infty$											
Belgium	———	.007	1.060	1.620	.080	.169	.528	.524	.107	.384	6.721
Canada	.751	———	.555	1.123	.101	2.078	.250	.007	1.935	15.623	30.232
France	3.212	.014	———	3.675	.623	.062	1.071	.299	.216	.110	9.740
Germany	6.147	.016	4.202	———	1.568	.207	2.049	1.540	.227	.163	27.400
Italy	.550	.058	.920	1.330	———	.155	.183	.150	.147	.148	5.573
Luxembourg	.162	*	.083	.127	.006	.013	———	.041	.432	.009	.723
Netherlands	1.617	.009	.428	2.134	.057	.017	.539	———	.101	.026	3.053
United Kingdom	2.036	3.070	2.440	5.478	3.597	2.266	.665	2.277	———	6.538	119.189
$e_M = \infty$											
Belgium	———	.008	1.478	2.262	.097	.212	.842	.812	.134	.404	6.780
Canada	2.796	———	1.015	2.062	.146	3.155	.565	.015	2.968	16.782	30.041
France	3.770	.015	———	4.102	.661	.067	1.256	.347	.232	.114	9.846
Germany	10.977	.019	6.382	———	2.002	.277	3.659	2.658	.490	.172	28.896
Italy	.863	.066	1.267	1.835	———	.193	.288	.229	.183	.156	5.885
Luxembourg	.258	.001	.116	.178	.008	.017	———	.064	.010	.009	.726
Netherlands	.867	.007	.297	1.476	.047	.014	.289	———	.081	.026	3.004
United States	8.406	5.403	7.478	16.873	7.561	5.292	2.802	11.520	———	7.455	129.042
$h_M = \infty$											
Belgium	———	.047	3.146	4.770	.388	.699	1.184	1.237	.444	16.526	637.190
Canada	1.667	———	1.512	3.048	.408	7.358	.558	..016	6.878	480.478	1936.484
France	7.534	.124	———	12.321	3.748	.313	2.511	.751	1.095	6.655	307.248
Germany	13.612	.100	11.985	———	7.046	.804	4.536	3.571	1.431	6.225	514.507
Italy	1.174	.371	2.607	3.749	———	.614	.391	.338	.586	6.159	197.642
Luxembourg	.363	.004	.248	.376	.030	.055	———	.097	.035	.391	126.811
Netherlands	4.767	.176	2.472	12.194	.741	.179	1.589	———	1.056	4.210	521.670
United Kingdom	2.197	5.813	2.960	6.628	5.608	3.240	.732	3.262	———	56.718	1648.386

Source: See text.
*Less than $1000.

abroad, and this large value can be attributed to the size of the subsidy and the high British elasticity of import demand for steel. It is also interesting to note that the British subsidy excludes an amount equal to a third of its present 1968 imports, but a smaller proportion of its imports from each of the major steel-trading countries. This difference can be attributed to the size of the total export supply elasticity facing Britain relative to the small elasticity of the supply of exports from the individual steel traders.

B. Export Subsidies.

Export subsidies generally create nontariff barriers equal in amount to that part of the export subsidy passed forward to buyers. According to the discussion on page 40, the nontariff barrier as a percent of c.i.f. import price will equal the product of (1) each country's rate of subsidization, (2) each country's tariff rate plus one, and (3) the ratio of each country's export supply elasticity to the sum of its export supply and demand elasticities $\frac{e_X}{e_X + \eta_X}$.

It also follows from Chapter 3, that whenever the subsidizing country has substantial excess capacity so that its e_D and e_X equal ∞, the rate of export subsidization (t') equals the nontariff barrier rate. The restrictiveness of the barrier in this case is calculated with equation (3). In contrast, if $e_D = \infty$ for any other country (implying that $\eta_X = \infty$), there is no restriction of imports due to the subsidy.

If e_D was everywhere less than infinitely elastic, the barrier (t) is less than t' and the appropriate equation for calculating restrictiveness is (2). The different values (t and t') for the nontariff barrier are shown in Table 13. The

Table 13
Export Subsidies and Corresponding Nontariff Barrier Rates
(share of c.i.f. value)

Subsidizing & Importing Country (i)	Subsidy Rate (t')	Nontariff Rate (t)
Belgium	.0756	.0007
France	.0939	.0025
Italy	.2883	.0070
Japan	.0076	.0073
Luxembourg	.0108	.0000*
Netherlands	.0601	.0002
United Kingdom	.0324	.0011

Source: See text.

*.0045 percent.

alternative estimates of the value of steel excluded by export subsidies from the major steel traders appear in Table 14.[10] Table 14 also shows the value of Japanese steel imports excluded by penalties for failure to export. In Appendix 1, it was established that this Japanese export incentive scheme does force the volume of steel exports to rise by 10 percent in much the same way they would behave with a subsidy. The consequent reduction in export and domestic prices (P), moreover, depends on the elasticity of demand (η_X) for Japan's exports (X). Denoting a small change by d, η_X can be written:

Table 14
Estimated Steel Imports Excluded by Export Subsidies
(c.i.f. value in millions of dollars)

Importing Country	Imports from: Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States	Total
η_M and $e_M<\infty$											
Belgium	———	*	.046	.071	.003	.007	.023	.023	.005	.017	.294
France	.669	.003	———	.766	.130	.013	.223	.062	.045	.023	2.029
Italy	.385	.041	.644	.931	———	.108	.128	.105	.103	.104	4.027
Japan	*	*	*	.025	*	———	*	*	.022	.796	5.323
Luxembourg	*	*	*	*	*	*	———	*	*	*	.002
Netherlands	.020	*	.005	.027	*	*	.007	———	.001	*	.038
United Kingdom	.025	.037	.030	.067	.044	.028	.008	.028	———	.080	1.457
η_M and $e_X=\infty$											
Belgium	———	.111	7.433	11.291	.016	1.652	2.797	2.923	1.049	39.043	1505.361
France	2.768	.487	———	48.207	14.666	1.227	9.824	2.938	4.283	26.038	1202.164
Italy	17.811	5.628	39.564	56.884	———	9.311	.059	5.127	8.899	93.449	2998.962
Japan	*	*	.502	.026	.001	———	*	*	.024	1.510	108.733
Luxembourg	.122	.001	.084	.127	.010	.019	———	.033	.012	.132	42.799
Netherlands	8.954	.330	4.643	22.903	1.371	.335	2.984	———	1.983	7.906	979.761
United Kingdom	.765	2.025	1.031	2.309	1.954	1.128	.255	1.137	———	19.760	574.276

Source: See text.
*Less than $1000.

$$\eta_X = \frac{dX}{X} \cdot \frac{P}{dP}$$

$$= .10 \frac{P}{dP}$$

$$\frac{dP}{P} = \frac{.10}{\eta_X}$$

If $\eta_X = \infty$, there will not be any nontariff restriction created. However, in Chapter 3, η_X for Japan was also estimated to be -23.42. Therefore, the percentage reduction in price, which is the value of the nontariff barrier created by this scheme, equals 0.43 percent of c.i.f. duty-paid value. This was adjusted to a percent of c.i.f. value excluding tariffs and added to the rate of the other Japanese export subsidy shown in Table 1 of Chapter 2. Then, computation was made to ascertain the amount (in total and by source) of Japanese steel imports restricted under alternative conditions using equations (1) and (2).

The striking feature of the figures in Table 14 is the degree to which alternative conditions affect the value of steel imports restricted by export subsidies. In Italy, for instance, only four million dollars is excluded when e_D is everywhere less than infinite, but $2998 million when the Italian domestic supply and import demand are infinitely elastic. Since the latter value is almost nine times total Italian imports, the second set of estimates in Table 14 must be used with caution. Such large changes may be justified when one considers the Italian subsidization rate of 29 percent, but the smaller values computed on the basis of

near-capacity operations in both domestic and foreign steel industries may be more realistic.

V. Other Nontariff Barriers.

The remaining quantified nontariff barriers in the major steel-trading countries (summarized in Table 1 of Chapter 2) are totalled and expressed as a percent of c.i.f. import price including duty in the first column of Table 15. Also

Table 15
The Rates of Other Nontariff Barriers[a]
(share of c.i.f. value)

Importing Country	c.i.f. Nontariff Rate[d]	c.i.f. Nontariff Rate[c]
Belgium	.0658	.0711
Canada	.1200[b]	.1296[b]
France	.0025	.0027
Italy	.0540	.0583
Japan	.0058	.0063
Luxembourg	.0300	.0324
Netherlands	.0575	.0621
United Kingdom	.0190	.0205
United States	.0326	.0352

Source: See text.

[a]Includes indirect border taxes, customs fees, import surcharges, prior deposit requirements, and freight rate discrimination. See Table 1, Chapter 2.

[b]Applies to 80% of Canadian imports.

[c]As a percent of c.i.f. duty-free value.

[d]As a percent of duty-paid value.

appearing in Table 15 are the c.i.f. duty-free rates corresponding to those shown in the first column. These nontariff

barriers include indirect border taxes, customs fees, import surcharges, prior deposit requirements, and freight rate discrimination. The restrictiveness of these nontariff barriers is determined by estimating the increase in the value of imports (dV) that would follow the elimination of the restrictions. Using the same equations and import data employed in the section on subsidies, one obtains alternative estimates of the value of steel imports excluded by this set of nontariff barriers as shown in Table 16. Once again the United States appears to keep out far more steel than the others, despite the fact that its freight rate differential of .0326 is smaller than four of the others' nontariff barriers.

VI. The Total Amount of Steel Restricted.

The values of steel imports excluded by quantitative measures, biased government procurement, subsidies, and other tariff-like restrictions are not strictly additive for each country since "voluntary" export limitations were not applied in 1968. Nevertheless, a rough comparison of the steel restricted by the quantified barriers in each country can be obtained if this addition is carried out. The totals are presented in Table 17. The following discussion about Table 17 concentrates on the case where elasticities are everywhere less than infinite.

The United States reduces its steel imports by almost one billion dollars with its quantified restrictions, more than six times the amount excluded by each of the runners-up;

Table 16
Estimated Steel Imports Excluded by Other Nontariff Barriers*
(c.i.f. in millions of dollars)

Importing Country	Restricted Imports from: Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States	Total
When $e_M, \hat{h}_M < \infty$											
Belgium	———	.032	4.711	7.200	.357	.752	2.346	2.329	.476	1.705	29.867
Canada	2.432	———	1.798	3.637	.328	6.733	.811	.023	6.269	50.620	97.951
France	.723	.003	———	.827	.140	.014	.241	.067	.049	.025	2.192
Italy	3.206	.339	5.361	7.755	———	1.904	1.068	.876	.859	.865	33.541
Japan	*	*	*	.021	*	———	*	*	.019	.687	4.594
Luxembourg	.328	.001	.169	.258	.013	.027	———	.084	.017	.018	1.464
Netherlands	6.275	.034	1.661	8.283	.220	.067	2.091	———	.393	.101	11.843
United Kingdom	.464	.699	.556	1.248	.819	.516	.152	.519	———	1.489	27.149
United States	7.389	17.286	2.950	6.231	3.126	56.182	2.463	1.627	9.795	———	201.507
When $e_M = \infty$											
Belgium	———	.036	6.566	10.052	.432	.944	3.743	3.609	.596	1.795	30.123
Canada	.712	———	3.290	6.681	.474	10.223	1.831	.049	9.615	54.375	77.333
France	.002	.003	———	.923	.149	.015	.283	.078	.052	.026	2.215
Italy	5.035	.386	7.385	10.699	———	1.124	1.678	1.337	1.067	.907	34.312
Japan	.012	.003	.010	.533	.006	———	.004	.005	.305	1.580	5.537
Luxembourg	.523	.001	.236	.361	.016	.034	———	.130	.021	.019	1.471
Netherlands	3.367	.030	1.154	5.730	.184	.054	1.122	———	.317	.102	11.658
United Kingdom	1.915	1.231	1.703	3.843	1.722	1.206	.638	2.624	———	1.698	29.393
United States	26.772	28.301	17.623	44.954	6.015	119.105	8.923	5.567	20.692	———	287.966
When $\hat{h}_M = \infty$											
Belgium	———	.105	6.990	10.619	.862	1.553	2.631	2.749	.987	36.719	1415.757
Canada	2.108	———	1.913	3.854	.516	9.306	.703	.020	8.698	607.628	2448.944
France	.848	.014	———	1.386	.427	.035	.282	.084	.123	.749	34.567
Italy	3.602	1.138	8.001	11.503	———	1.883	1.200	1.037	1.800	18.897	606.450
Japan	*	*	*	.022	.001	———	*	*	.019	1.252	27.134
Luxembourg	.367	.004	.251	.381	.031	.056	———	.099	.035	.396	128.399
Netherlands	9.251	.341	4.798	23.665	1.438	.347	3.083	———	2.049	8.170	1012.365
United Kingdom	.484	1.281	.653	1.461	1.236	.714	.161	.719	———	12.502	363.354
United States	7.762	33.778	7.738	19.588	4.949	80.860	2.587	1.749	14.137	———	740.287

Source: See text. *Same as Table 15.

Table 17
Estimated Steel Imports Excluded by All Quantified Nontariff Barriers
(millions of dollars)

Importing Country	$e_M = \infty$		$\eta_M = \infty$ $e_D = \infty$		η_M, $e_M < \infty$	
	total	from U.S.	total	from U.S.	total	from U.S.
Belgium	39.657	2.416	3686.159	96.724	39.612	2.312
Canada	118.039	77.115	4720.864	1171.328	138.915	71.789
France	15.261	.177	1547.307	33.480	17.289	.196
Germany	28.896	.172	514.507	6.225	27.400	.163
Italy	40.197	1.063	3803.054	118.505	43.321	1.117
Japan	5.537	1.580	135.867	2.762	9.917	1.483
Luxembourg	3.393	.031	309.621	..984	2.321	.030
Netherlands	15.924	.146	2623.434	21.715	16.215	.145
United Kingdom	158.435	9.153	2586.016	88.980	147.795	8.107
United States	1186.977	———	1873.392	———	984.927	———

Source: See text.

Britain and Canada in descending order. Luxembourg, because of its small import volume, keeps out the least amount of steel with its quantified barriers, followed by Japan, the Netherlands, France, West Germany, Belgium, and Canada. The amount of United States steel exports excluded by the quantified restrictions of all major foreign steel-trading countries (as shown in Table 17) is less than one-tenth of the amount of United States imports restricted. However, this comparison cannot be taken as an unambiguous indication that the United States steel industry has a competitive advantage attributable to its absolutely more restrictive barriers. The only barriers compared here are the few that were amenable to quantification, and the number quantified may bear no relation to the total number of barriers erected. As illustrated in Table 18,

Table 18
Number of Quantified and Nonquantified Barriers

Importing Country	Total Number of Barriers	Number of Quantified Barriers
Belgium	16	4
Canada	10	3
France	21	5
Germany	15	1
Italy	16	5
Japan	18	4
Luxembourg	15	4
Netherlands	15	4
United Kingdom	17	4
United States	17	3

Source: See Chapter 2.

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Canada imposes the fewest nontariff restrictions, but not the smallest number of quantified ones.

Nevertheless, there are only two major steel-trading countries which raise more nontariff restrictions than the United States. Although the foreign nations may exclude relatively more steel with their nonquantifiable restraints, this cannot be determined with any precision. The large share of world steel imports accounted for by the United States tends to support the view that even if foreigners restricted a greater proportion of their imports, the absolute amount would be smaller than the value of steel excluded by the United States.

From a relative standpoint United States barriers are also found to be most restrictive. The value of restricted steel as a percent of 1968 imports in each of the major steel-trading countries is shown in Table 19 below. The Americans appear to

Table 19
Steel Excluded by Quantified Nontariff Barriers
(As a Percent of 1968 Imports)

Importing Countries	Percentage Rate
Belgium	16
Canada	46
France	2
Germany	3
Italy	3
Japan	50
Luxembourg	9
Netherlands	4
United Kingdom	49
United States	51

Source: Computed from Tables 11 and 17.

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restrict the largest proportion of imports (51 percent) but they are closely followed by the Japanese, British, and Canadians.

VII. Tariff and Nontariff Restrictions.

A. Nominal Tariff Rates.

Another interesting comparison concerns the relative importance of tariff and nontariff barriers confronting steel. This comparison requires calculating the value of steel imports excluded by duties. It has been possible to obtain the unweighted average of post-Kennedy Round nominal tariff rates on steel imports entering nine of the ten major steel-trading countries. These duties (appearing in Table 20) are applied to equations (1), (2), and (3) in order to determine the value of steel excluded by nominal tariffs.

Table 20
Post-Kennedy Round Tariff Rates on Steel
(millions of dollars)

	c.i.f. Tariff Rate
Belgium	.072
Canada	NA
France	.072
Germany	.072
Italy	.072
Japan	.073
Luxembourg	.072
Netherlands	.072
United Kingdom	.090
United States	.087

Source: See Footnote 3 at the end of this chapter.

NA Not applicable or available.

The results of this calculation are shown in Table 21. All the tariff rates are about the same, with a 1.5 percentage point difference between the highest and lowest duties in the nine countries considered here. Nevertheless, international differences in elasticities and import volume result in wide disparities in the value of steel imports excluded by tariffs. Once again, the United States keeps out the most (approximately one-half billion dollars) and Luxembourg the least. Three countries (the United Kingdom, Netherlands, and Japan), however, exclude a greater share of their total imports than the United States.

The next step in comparing tariff and nontariff barriers would ordinarily be to contrast the restrictiveness of each. But before embarking on such a comparison, it is necessary to make the following two qualifications of the estimating procedure used here.

B. Unweighted Averages.

First, it should be noted that unweighted tariff averages ignore the relative importance of certain commodities in total trade, and their use must therefore be qualified. In 1962, for instance, there was considerable variance in steel tariffs, with the advalorem duty on ingots and other primary steel forms being twice the size of the tariff rate applied to more fabricated steel products in the United States. (See the nominal rates in Table 22.)

Table 21
Estimated Steel Imports Excluded by Tariffs
(c.i.f. value in millions of dollars)

Importing Country	Imports from: Belgium	Canada	France	Germany	Italy	Japan	Luxembourg	Netherlands	United Kingdom	United States	Total
When $\eta_M, e_M < \infty$											
Belgium	———	.032	4.771	7.291	.361	.762	2.375	2.359	.482	1.726	30.245
France	19.274	.087	———	22.052	3.736	.374	6.424	1.793	1.299	.662	58.442
Germany	29.507	.079	20.171	———	7.527	.995	9.835	7.394	1.092	.782	131.519
Italy	3.959	.419	6.621	9.578	———	1.116	1.319	1.082	1.061	1.068	41.422
Japan	.004	.003	.005	.248	.005	———	.001	.002	.217	7.963	53.236
Luxembourg	.728	.002	.376	.574	.028	.060	———	.186	.037	.041	3.253
Netherlands	7.275	.040	1.926	9.604	.256	.078	2.425	———	.456	.117	13.731
United Kingdom	2.036	3.070	2.440	5.479	3.597	2.266	.665	2.278	———	6.538	119.189
United States	18.264	42.724	7.291	15.400	7.726	138.859	6.087	4.002	24.210	———	498.044
When $\eta_M = \infty$											
Belgium	———	.037	6.650	10.180	.437	.956	3.790	3.655	.603	1.817	30.511
France	22.635	.091	———	24.616	3.966	.402	7.539	2.081	1.395	.686	59.076
Germany	52.691	.094	30.634	———	9.612	1.329	17.562	12.759	2.350	.828	138.703
Italy	6.218	.477	9.120	13.213	———	1.388	2.072	1.652	1.318	1.121	42.375
Japan	.136	.029	.117	6.170	.068	———	.045	.062	3.530	18.313	64.156
Luxembourg	1.162	.003	.524	.802	.034	.075	———	.288	.048	.043	3.268
Netherlands	3.904	.035	1.337	6.644	.214	.063	1.301	———	.367	.118	13.516
United Kingdom	8.406	5.403	7.478	16.873	7.561	5.292	2.802	11.520	———	7.455	129.042
United States	66.168	69.948	43.556	111.107	14.866	294.378	22.053	13.758	51.143	———	711.735
When $e_M = \infty$											
Belgium	———	.106	7.079	10.754	.873	1.573	2.664	2.784	.999	37.184	143.678
France	22.601	.374	———	36.964	11.245	.941	7.533	2.252	3.285	19.965	921.787
Germany	32.668	.240	28.764	———	16.912	1.930	10.888	8.572	3.434	14.940	1235.816
Italy	4.448	1.405	9.881	14.206	———	2.325	1.483	1.280	2.222	23.338	748.960
Japan	.004	.003	.005	.252	.005	———	.001	.002	.226	14.503	314.412
Luxembourg	.817	.008	.557	.847	.069	.124	———	.219	.079	.879	285.324
Netherlands	10.726	.396	5.563	27.438	1.667	.403	3.575	———	2.376	9.472	1173.757
United Kingdom	2.126	5.626	2.864	6.414	5.427	3.134	.709	3.157	———	54.889	1595.212
United States	19.184	83.485	19.125	48.413	12.232	199.852	6.394	4.322	34.941	———	1829.688

Source: See text.

Table 22
Nominal and Effective Tariff Rates on Steel Imports[a]

	United States		United Kingdom		Common Market		Japan	
	t_j	z_j	t_j	z_j	t_j	z_j	t_j	z_j
Ingots and/primary forms	10.6	106.7	11.1	98.9	6.4	28.9	13.0	58.9
Rolling mill products	7.1	2.2	9.5	7.4	7.2	10.5	15.4	29.5
Other steel products	5.1	0.5	17.0	46.8	9.9	20.9	13.4	14.1
Weighted average[b]	7.7	37.7	12.0	49.3	7.6	19.5	14.0	35.5
Effective when $t_i = 0$	NA	77.0	NA	120.0	NA	76.0	NA	140.0

Notes: t_j = nominal tariff rate

z_j = effective tariff rate

t_i = nominal duty rate on inputs

NA = not applicable

[a] as a percent of c.i.f. value in 1962

[b] weighted by the share of each commodity group in the total exports of the major steel-trading countries

Source: B. Balassa, "Tariff Protection in Industrial Countries: An Evaluation," Journal of Political Economy, December, 1965, p. 580.

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Disaggregated post-Kennedy-Round steel tariff rates, however, are as yet unavailable, so that weighting is impossible. Nevertheless, all weighting techniques are subject to some objection anyway. Weighting by imports gives low values to very prohibitive restrictions; weighting by domestic production and consumption is improper because of the distorting effects of trade restraints on consumer choice and intercommodity differences in "trade-ability." Even weighting restrictions by the total value of world trade will still be affected by intercountry similarities in the structure of tariffs or other trade barriers, although this is probably the most legitimate means.[11] There have been few weighting problems with nontariff barriers in this study, because most of them are applied across the board on steel products. In any event, the unweighted average of steel duties can give us a basis for an up-to-date, if not precise, comparison of the relative restrictiveness of nominal tariff and nontariff barriers.

C. The Effective Rate of Protection.

The second limitation to which this study's estimates are subject stems from the failure to distinguish between nominal and effective rates of tariff or nontariff restrictions. The latter take account of barriers to imported material inputs and indicate the protection accorded to domestic value added. The restrictive effect of tariff and nontariff barriers has so far been indicated by the difference

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between potential and actual steel imports, when the former refers to trade flows that would take place under ceteris paribus assumptions if the importing country eliminated nominal restrictions. One important assumption used in preceding estimates is that restraints on other goods (in particular steel inputs) stay constant.

It should be apparent that lowering barriers to raw materials and other intermediate products would expand the domestic supply of final products. As a result, the increase in imports of final goods attributable to elimination of trade restraints would be smaller. Moreover, the size of this increment in imports will vary inversely with the proportion of output accounted for by tradable inputs and the nominal rates of the trade restrictions facing them, but directly with the nominal tariff or nontariff rate on final imports.

1. Effective Tariff Rates.

With respect to duties, the relevant factors are embodied in the concept of effective rates of protection developed by Johnson, Corden and others.[12] If input coefficients are constant in the relevant range, the effective rate of duty (z_j) for any commodity (j) can be expressed in the framework of an input-output system.[13] Let (t) denote the nominal rate of tariffs, (a) the material input coefficient, and (v) the proportion of value-added to output, all measured at world-market prices. For commodity (j) we have, then,[14]

$$(4) \quad z_j = \frac{t_j - \Sigma a_{ij} t_i}{v_j}$$

Observing the behavior of the formula, one notes that effective tariff rates (z_j) are highest when input duties (t_i) are zero. Elimination of negligible input duties, however, will cause no change in domestic supply. In this case, the present study's estimating procedure based on nominal rates retains its ability to make valid predictions about changes in the value of imports (dV). On the other hand, when t_i is positive, z_j becomes smaller, and eliminating t_i can result in a substantial increase in domestic supply. Johnson has demonstrated[15] that if input duties (t_i) are lowered along with t_j, the production effect of lowering t_j will be more or less offset by the increased supply following the reduction of t_i. As a result, the increase in imports of (j) when both t_j and t_i go to zero will be smaller. Indeed, if t_i is large enough to make $z_j = 0$, the value of imports will be unchanged by an across-the-board removal of t_i and t_j. When z_j is negative, removing t_j and t_i will cause the value of imports to decrease. Since it seems most reasonable that t_i is a positive number, this study's estimates are probably upper limits of the actual value of imports excluded by any given trade restriction.

The remaining question involves the sensitivity of the present study's estimates to changes of input restrictions. For tariffs, this sensitivity can be determined by using information on nominal and effective rates on steel imports

calculated by Balassa.[16] (See Table 22.) His results indicate that the effective rate of protection accorded to steel in nine of the ten major steel-trading countries is generally higher than the nominal rate for the same goods. Balassa also finds the effective rate on ingots and other primary forms in the United States to be extremely high. Since this category is an input of rolling mill and other steel products, the effective tariffs for the latter products is expectedly low.

Two additional comments on Balassa's American data may be worthwhile. First, it is interesting to note that the greatest degree of protection for value-added occurs at the most monopolized stage of the United States steel industry. Second, Balassa's results highlight the fact that steel products differ according to their stage of production, while the analysis in this study has been based on the assumption of strong similarity among steel products. The hazards of this assumption, however, are partially avoided, since in contrast to wide tariff disparities, nontariff barriers are usually applied across the board — on all steel products regardless of fabrication stage.

The next to the last row of Table 22 shows averages of Balassa's tariff rates, weighted by the share of each commodity group in total steel exports from the major steel-trading countries. In addition, weighting United States tariffs[17] on various materials used in blast furnaces, steel works, rolling and finishing mills by the appropriate input

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coefficients,[18] yields an estimate of 0.037 for t_i. Using these facts and equation (4), one finds that the value of a_{ij} implicit in Balassa's results is about 0.9. Given this value, it follows from the behavior of equation (4), that when $t_i = 0$, then $z_j = 0.77$, and the present study's estimating procedure for dV is consistent with this effective tariff rate. However, when t_i for the United States assumes its actual value of 0.037, z_j falls by approximately half to 0.377. If the same relationships between nominal and effective rates hold true for post-Kennedy Round duties, then it may be reasonable to say that the estimates of dV in Table 21 should be halved. If this is the case, one would find the United States excluding one-quarter rather than one-half billion dollars of steel with its tariffs.[19]

Since Balassa employs standardized imput coefficients, it is possible to determine the sensitivity of dV to simultaneous changes of input and output duties in major steel-trading countries besides the United States. Setting t_i equal to zero, one obtains values of z_j for each country consistent with Table 21 estimates of dV based on changes in nominal ouput tariffs only. The various z_j under that assumption appear in the last row of Table 22.

Contrasting the extreme values of z_j with the actual z_j computed by Balassa, one finds that the ratios of the latter to the former are all less than one. Multiplying these ratios by Table 21 estimates may indicate the reaction dV to an across-the-board elimination of tariffs. Employing

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this procedure for foreign steel traders, in the same way it was used for the United States, one finds that the change in United Kingdom steel imports would be 5/12 of its original value, or $50 million. The dV for the major steel traders in the EEC would be 26 percent of its original value. Therefore, the increase in steel imports of Belgium would be $8 million; France, $15 million; Germany, $43 million; Italy, $10 million; Luxembourg, $0.8 million; and the Netherlands, $3.4 million. Japan's dV would also fall to 25 percent of the original estimate, or $13.3 million.[20]

2. Effective Rates of Nontariff Barriers.

Johnson has also demonstrated[21] that the effective rate of tariffs will be lower in the presence of nontariff restrictions applied across the board. For instance, excise taxes levied at the same rate on imports of both output and inputs will reduce the effective-protection rate accorded by tariffs. Johnson does not mention, however, that many nominal nontariff barriers may have higher effective rates themselves, because the restrictions on inputs may be lower.

Whether or not this is the case in the steel industry cannot be determined with any precision. Steel inputs generally are subject to domestic subsidies. Transport rebates, low or nonexistent excise taxes, and are not impeded by most customs regulations, advertising, patent, trademark, and health or safety rules. They do appear to be restrained by the same price preferences, import surcharges, antidumping laws, customs fees or deposits, penalties, technical

specifications, and restrictive business practices imposed on steel output. On the other hand, raw materials are more often subject to quantitative restrictions, price controls, national security regulations, and other import barriers. Therefore, in the absence of a comprehensive investigation of every barrier erected against steel inputs, it is difficult to determine what difference exists between the nominal and effective rate of protection afforded by nontariff restrictions on steel.

It is nevertheless quite obvious that nontariff barriers on steel inputs have a positive rate. Thus, this study's estimates of the dV caused by eliminating all nontariff barriers (shown in Table 17) overstate the increases in the case where restrictions on inputs are also removed. The degree to which they are overstated may be estimated by employing the plausible assumption that input and output restrictions have approximately equal nominal rates. The reasonableness of this assertion follows from the discussion in the preceding paragraph. There, one sees that both steel inputs and outputs are subject to some barriers of the same height. With regard to other barriers, those on inputs are sometimes higher and sometimes lower lower than those on output. In that case, the other input barriers may average to a height approximately equalling that of output restrictions.

Given the assumptions that $z_i = t_i = t_j$ for nontariff barrier rates, and that $v_i = 0.10$ as before, then equation

(4) tells us that all nontariff barriers exclude only one-tenth of the steel imports kept out under the alternative assumptions of $t_j = 0$. Therefore, instead of the United States excluding almost one billion dollars of steel as shown in Table 17, it may keep out only $100 million. Likewise, for the other major steel traders, the increase in steel imports (dV) following elimination of output barriers in Table 12 must be reduced by 90 percent in order to account for simultaneous changes in barriers facing steel inputs.

D. Comparison of Nominal Tariff and Nontariff Restrictions.

Table 23 shows the total value of steel imported in 1968 by each of the major steel-trading countries. United States imports, it can be seen, account for approximately 38 percent of the ten nations' imports. In the same table, one also finds the total value of each country's steel imports excluded by nominal tariffs and nontariff barriers, as well as the ratios of excluded steel to total imports. Summarizing the results in Table 23, it can be seen that in five countries the few nontariff barriers quantified in this study appear to exclude more total steel imports than tariffs deter. These countries are Belgium, Italy, Netherlands, the United Kingdom, and the United States. The four foreign countries restrict about $9 million of United States exports with tariffs, for instance, but almost one-third more with nontariff as with tariff restrictions. In the United States twice as much steel is excluded by quantified nontariff barriers.

Table 23
Comparison of Tariff and Nontariff Barriers

	Value of 1968 Imports $1,000,000	Estimated Value of Steel Excluded* Nontariff $1,000,000	Nontariff % of total imports	Tariff $1,000,000	Tariff % of total imports
Belgium	246.377	39.612	16	30.245	12
Canada	298.027	138.915	46	NA	NA
France	678.104	17.289	2	58.442	9
Germany	987.916	27.400	3	131.519	13
Italy	348.250	43.321	12	41.422	12
Japan	19.776	9.917	50	53.236	27
Luxembourg	26.389	2.321	9	3.253	12
Netherlands	426.647	16.215	4	13.731	32
United Kingdom	299.959	147.795	49	119.189	39
United States	1961.837	984.927	51	498.044	25

*Assuming η_M, $e_M < \infty$

NA Not Available

Source: See text.

Although quantified nontariff barriers restrain relatively less steel in France, Germany, and Japan, this does not necessarily mean that their nontariff restraints are less significant than their tariffs. Indeed, the comparison may only reflect the fact that these three countries depend more on barriers whose height cannot be expressed numerically. Japan, for instance, has a larger number of unquantified barriers than any other major steel trader. The other two countries have the second greatest number of unquantified restrictions.

Of course, these estimates are based on the assumption of constant restrictions on steel inputs, while tariffs may be more important when effective rates of protection are considered. As the analysis in the preceding section illustrates, however, this cannot be determined with any precision in the absence of further study.

Thus, nontariff barriers appear to be the most important type of nominal restriction facing steel. To the extent that steel is representative of general imports, this study's results indicate that nontariff barriers may also have a significant impact on other goods, and that tariffs may well be of lesser importance. Hopefully, the results of the present study have demonstrated that consideration of nontariff barriers is a worthwhile endeavor, and suggested a possible method for similar investigations in other industries.

VIII. Footnotes.

[1]Kelly, "Nontariff Barriers," op. cit., p. 265.

[2]Ibid.

[3]Maxwell Stamp Associates, "The Free Trade Area Option: Opportunity for Britain," The Atlantic Trade Study, London, 1968, p. 40.

[4]Steel Imports, op. cit.

[5]Ibid.

[6]Ibid.

[7]Ibid.

[8]United States Department of Commerce, Survey of Current Business, February, 1970, United States Government Printing Office: Washington, D.C., p. S-1.

[9]Table 12 does not include the impact of eliminating domestic subsidies on the subsidizing countries exports.

[10]These estimates do not reflect the increase in the subsidizing countries' exports due to the subsidy.

[11]B. Balassa and M. Kreinin, "Trade Liberalization under the Kennedy Round," Review of Economics and Statistics, May, 1967, pp. 125-137.

[12]See for instance, H. Johnson, "The Theory of Tariff Structure, with Special Reference to World Trade and Development," Trade and Development, Etudes et Travaux de l'Institut Universitaire de Hautes Etudes Internationales, No.4, Geneva, 1965. p. 10.

[13]The assumptions underlying the use of an input-output framework in the model have been summarized by J. Leith, "Substitution and Supply Elasticities in Calculating the Effective Protective Rate," Quarterly Journal of Economics, November, 1968, p. 589:

(1) The rate of duty expresses the rate of divergence between protected and free-trade prices of a tradable.

(2) The production function describing the relationship between inputs and outputs is linearly homogeneous.

(3) The elasticities of substitution between inputs is zero.

(4) The elasticity of foreign supply of exports facing domestic buyers is infinite.

(5) The elasticity of supply of domestic nontradable inputs is infinite.

(6) The elasticity of supply of other factors of production to the domestic industry is less than infinite.

(7) Production and trade are present before and after the introduction of protection.

In the same contribution Leith has proceeded to determine the sensitivity of the effective rate of protection to relaxation of some of these restrictive assumptions. In particular, a nonzero substitution elasticity, or a less than infinite supply of inputs appears to reduce the effective rates.

[14]B. Balassa, "Tariff Protection in Industrial Countries" An Evaluation," Journal of Political Economy, December, 1965, p. 580.

[15]H. Johnson, "The Theory of Effective Protection and Preferences," Economica, May, 1969, p. 124.

[16]Balassa, op. cit.

[17]Tariffs obtained from United States Department of Commerce, United States Commodity Exports and Imports as Related to Output, United States Government Printing Office: Washington, D.C., 1963.

[18]The share of each material in total inputs is obtained from the United States Department of Commerce, Census of Manufactures, United States Government Printing Office: Washington, D.C., 1963.

[19]Assumes that e_M and η_M are both less than infinite.

[20]Assumes that e_M and η_M are both less than infinite.

[21]Johnson, op. cit.

APPENDICES

I.

APPENDIX ONE
FOREIGN TRADE POLICIES

I. Introduction.

A comprehensive list of nontariff barriers was developed in Chapter One as a guide to finding the barriers which apply to trade in steel among the major steel-trading countries of the Free World. The first category of nontariff barriers appearing in this list is referred to as foreign trade policies. These are courses of action adopted by governments to influence imports and exports directly. Eight of the ten types of barriers erected by foreign trade policies were found to restrict steel imports. The two which do not restrict steel are state trading and shipping and insurance regulations.

State trading involves government monopolization of the right to import, and may have the same effect on trade as tarriffs or quotas. Only a few manufactured products, such as alcohol, tobacco products, matches, and coal are subject to state trading in the major steel-trading countries.[1] Although every country has shipping and insurance regulations, not one seems to have used these rules to restrict any imports, least of all steel. The eight foreign trade policies which do erect import barriers to steel are considered below.

II. Import Licensing.

Import licensing systems require importers to obtain permits before purchasing foreign goods. The systems often implement other quantitative restrictions, such as quotas, but may also erect important barriers by themselves. In addition, administrative and legal costs of obtaining a license have an effect similar to tariffs.

Working alone and without fixed quotas, import licensing systems may halt imports at any level or time, a fact which increases the risk of importing. Thus, systems that stop issuing permits after an arbitrary or unannounced level of imports is reached may be more restrictive than quotas of the same amount which are determined in advance. According to a Congressional study, "the mere existence of the licensing requirement provides little clue as to how restrictive the requirement is at a given time, if at all. Indeed, licensing procedures are sometimes maintained only as a 'standby' procedure, in the event that a need should arise for restricting imports."[2]

Whether used alone or in conjunction with quotas, import licenses also allocate the right to import among alternative traders. Issuing one license on an import with no domestic substitutes bestows monopoly power on the licensee, and as a result the volume of imports may be smaller still. This proposition is illustrated in Figure A1 where SS represents the supply of imports (and with the exception of distribution expenses, the marginal cost schedule for imports), and DD the

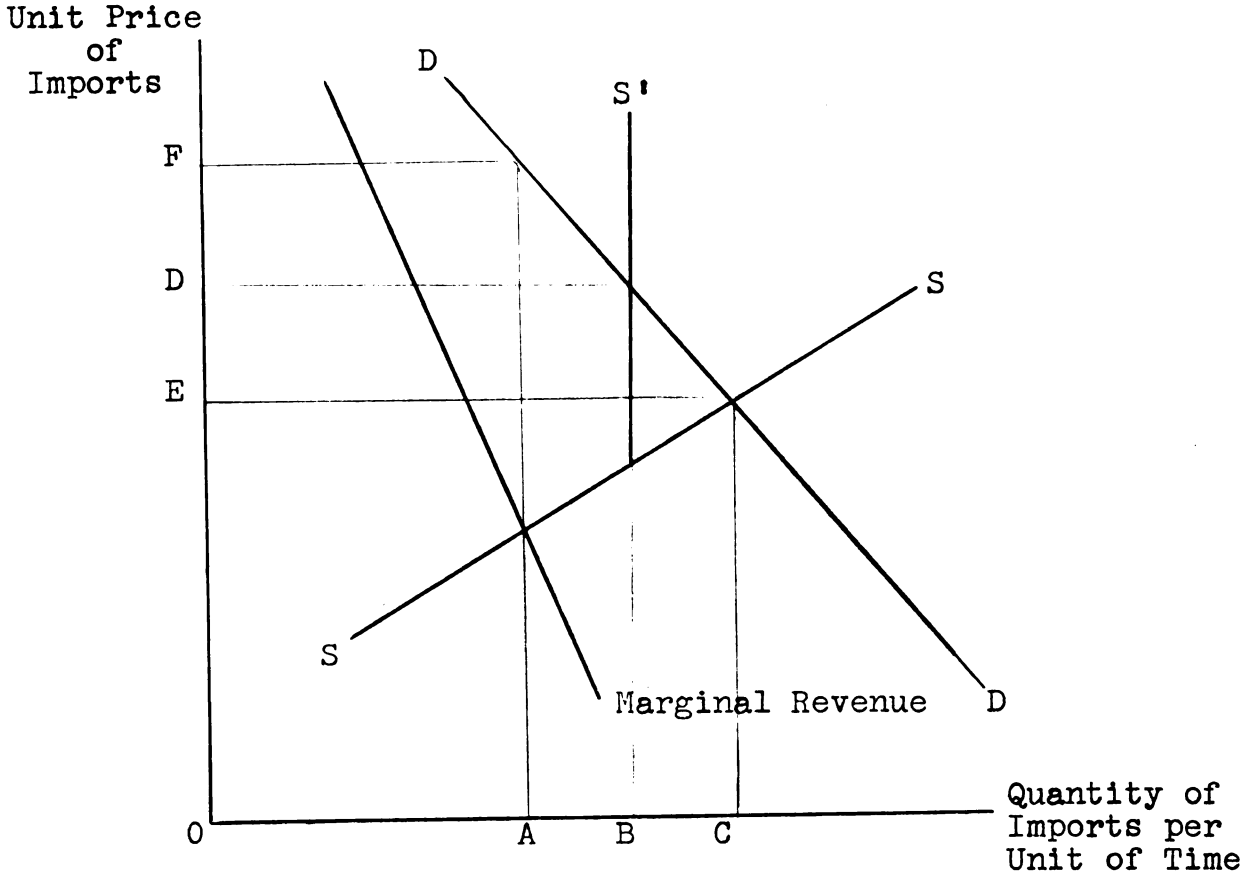

Figure A1
The Monopoly Effect of an Import License

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demand for imports. Imposition of quota OB causes the import supply schedule to become SS'. If the restricted imports are distributed competitively, the quantity of imports will fall by BC and the import price will rise from OE to OD. Consider, on the other hand, a license granted to only one domestic seller of imported goods with OB once again established as the limit on that import. If the import has no close domestic substitutes, a monopoly is established with the volume of imports dropping to OA and import price rising from OE to OF. As long as the quota itself is not too restrictive (ie. as long as OB is larger than OA) the monopolization of the right to import will further restrict the volume of imports.

Altogether, nine of the ten main steel-trading countries require licenses for a wide variety of imports, including certain agricultural goods, energy sources, transportation machinery, textiles, chemicals, and metals — exluding steel.[3] Not one of the nine, however, licenses more than a few types of imports.[4] In contrast, Japan subjects all imports, including steel, to licensing in a three-tiered system where permits can be issued automatically, with varying limitations, or according to announced quotas.[5] Although 90 percent of its trade was under the two less-restrictive types of licenses in 1962, Japan retains quota licensing on 123 items, half of which are manufactures and include passenger cars, computers, typewriters and power generators.[6] Among these 123 items are some alloy steels which are subject to quotas which vary from year to year.[7] Moreover, all other steel

products are under the second most restrictive type of licensing where unannounced restrictions may be placed on the granting of import permits.[8] According to United States exporters, steel imports to Japan have been restricted mostly by this licensing system.[9]

III. Foreign Exchange Restrictions.

Closely associated with import licenses are the exchange permits which importers must obtain before they may make payment for imports. Licenses for foreign exchange are substitutable for import permits, since importers cannot purchase goods from abroad without access to foreign currencies. The administrative cost involved in applying for licenses also has a tariff-like effect on imports. However, in practice, the right to import and the right to exchange are simultaneously granted.

In the past, many countries have turned to exchange controls to regulate their international payments. Exchange licensing systems which discriminate by currency attempt to balance the payments between the home country and another country or currency area. This type of discrimination was common from the time of the currency upheavals of the thirties through post-war reconstruction.[10] It is still widely used in the developing countries.[11]

Exchange controls may also discriminate by commodities, limiting the importation of goods which are regarded as non-essential. Here there may easily be an element of protection for domestic producers supplementing the traditional reason

for imposing exchange control. While this system is also widespread in the developing countries, it is not uncommon to find exchange restrictions still hindering a few imports in the industrial countries. Among the ten steel-trading countries considered here, however, only three require exchange permits for all imports, including steel.

Following the French crisis of 1968, exchange controls were imposed. These required all import and export payment operations to be conducted directly through banks authorized to act as intermediaries in foreign transactions. Although certain payments could be made freely through such banks on the basis of general authorization, other transactions faced uncertain treatment.[12] United States steel producers rank exchange restrictions as the fifth most restrictive nontariff barrier to steel in France.[13]

Although Japan generally grants exchange concurrently with import licenses,[14] in certain cases importers must apply for exchange allocation certificates, or obtain approval of their method of payment from the Japanese Ministry for International Trade and Industry.[15] Such exceptions may surreptitiously protect domestic producers. United States steel exporters believe exchange restrictions to rank sixth among the nine nontariff barriers they find in Japan.[16] The effect of Japanese exchange controls on United States steel exports has been publicized by William Jackson of the Investors League, who has stated that "it is very difficult somehow to collect Japanese yen for steel sold in Japan."[17]

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Although licenses are said to be issued automatically,[18] there is in fact much room for discrimination in the complex procedure of obtaining foreign exchange in the United Kingdom. Copies of settlement invoices, exchange control documents, customs entry forms, customs declarations, and the duty charge docket must be submitted to authorized banks when the goods have been entered at customs. Prior to entrance at customs, the authorized banks will approve payment only upon the submission of documentation which proves that the goods will be dispatched upon payment, import licenses, pro forma invoices, contracts, confirmations of orders, and Sterling transfer forms or import exchange forms. (Obtained by applications to the government).[19] United States steel exporters have ranked exchange controls as the prime nontariff barrier to steel in the United Kingdom.[20]

IV. Quotas.

Although they also raise the cost of importing in much the same way as tariffs, foreign exchange and import licensing requirements are usually intended to implement quotas. These restrictions are limitations on either the value or the quantity of a designated commodity that may be imported into a country within a given period of time.

It should be noted that quotas based on quantity often result in greater imports of higher-priced items, with the result that the value of imports may not be lowered in the same proportion as quantity. Absolute quotas should be distinguished from tariff quotas which do not permit imports

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in excess of a certain amount unless an additional duty is levied.

The number of current quotas in the industrial countries is smaller than in the years of currency and wartime disruption, as well as smaller than the number imposed in the less developed countries. Nevertheless, all of the major steel-trading countries have quotas on a few products, unually those subject to licensing. Only one, however, has imposed a quota on steel. That quota, which limits French steel imports to 59,000 long tons per month, was imposed by the French after their May, 1968 crisis. Like the other French emergency measures, the quota applied for only a temporary period: July 1 to December 31, 1968. The limit was set at an import rate seven percent higher than that of monthly imports during 1967.[21]

V. Export Limitations.

Akin to quotas are so-called "voluntary" export limitations, negotiated under the importing country's threat to apply more stringent quantitative restrictions. In 1964, there were 67 items subject to voluntary quotas in the United States, 28 in Canada, 65 in the United Kingdom, five in West Germany, and one in France, most of which were imposed on Japanese exports to these countries.[22] The United States was the first to use such restrictions when it imposed them on Japanese textile exports to the United States in the mid-1950's.[23]

Once again, the United States has led the way by being the first country to institute "voluntary: restraints on

exports of the other industrial countries of the West. In January, 1969, the United States Government announced that steel producers in Japan, the EEC, the United Kingdom, and Canada had agreed to impose their own restrictions on steel exports to the United States for the next three years. The agreement came in letters of intent from the Japanese Iron and Steel Exporters' Association and the European Coal and Steel Community, and in less formal assurances from Britain and Canada.[24] United States steel imports will be limited to 14 million short tons in 1969 and be allowed to expand at a rate of five percent in each succeeding year. The limits would divide United States steel imports on a 40-40-10 percentage basis among the European Coal and Steel Community, the Japanese, and the two other major steel traders, Britain and Canada, respectively.[25] These allotments correspond roughly to the percentage shares of these countries in 1967 United States steel imports.[26] One indication of the restrictive effect of these "voluntary" export limitations is given by the fact that they are almost 20 percent below the 1968 United States import level of 17.7 million tons.[27] United States steel importers rank the new "voluntary" quotas as the most restrictive nontariff barrier erected by the United States.[28] One has estimated that the quota will result in the importation of higher-valued steel products, with prices averaging 10 to 30 percent higher than those on present imports.[29]

VI. Domestic Biased Procurement.

While negotiated export limitations have a quota-like effect on imports, the purchasing practices of governments may have the restrictive effect of a quota, a tariff, or both. Government procurement policies may, in effect, prohibit or limit imports; alternatively, they may accord a preferential margin to domestic producers on the basis of some percentage of price. Generally, the same preference is given to all goods, except where the amount of preference is at the discretion of various government agencies. Although both the European Economic Community and European Free Trade Association are attempting to harmonize purchasing procedures between member countries, little progress has been made.[30]

Seven of the ten major steel-trading countries, including the United States and six EEC members, provide for methods of awarding government contracts which range from open or public bidding to privately negotiated transactions.[31] In practice, these countries, as well as Canada, Japan, and the United Kingdom often restrict the bidding to domestic firms or enter into negotiations only with domestic firms.[32] In the cases of Belgium, Germany, Japan, Luxembourg, Netherlands, and the United States, the principle that domestic goods are to be favored over foreign products is specified in the law.[33] In contrast, Canada, France, Italy, and the United Kingdom have no existing acts imposing general restrictions on federal government procurement from other countries.[34] In the latter countries, however, broad administrative discretion in government purchasing practices affords ample

opportunity for discrimination against foreign goods.[35] Many governments exhibit their bias against purchasing abroad by requiring ministerial approval for large contracts with foreign firms,[36] inviting tenders from national suppliers only,[37] requiring a minimum amount of tenders to come from domestic suppliers,[38] setting aside a certain percent of government contracts for small domestic businesses,[39] preventing purchasing agencies from contacting firms not legally established in the home country,[40] advising government purchasers "to give special consideration to the value of domestic products,"[41] requiring suppliers to maintain a domestic domicile,[42] specifying the domestic origin of certain materials,[43] and entering into exclusive supply agreements with domestic cartels.[44]

It is not surprising, therefore, that this study's survey of world steel traders indicates that government purchasing practices are one of the most restrictive nontariff barriers to steel. The degree of governmental bias in favor of domestic goods is not known, however, except in the five major steel trading countries which accord a preferential margin to domestic producers on the basis of some percentage of price. Three of the five are members of the Benelux Customs Union. Here, a domestic bias exists to the extent that products of foreign origin shall not be used if producers in the Benelux Customs Union are able to supply the same quality at prices which are substantialy the same.[45] Domestic prices are considered to be substantially the same even if they are up to 10 percent higher than the c.i.f.

import price including duty.[46]

The Canadian Government's margin of preference for all domestic goods can by indicated by the percentage preference accorded domestic defense equipment, which is by far the largest single class of public expenditure at the federal level.[47] The price differential on defense spending is usually 10 percent.[48] However, there is no hard and fast rule regarding the amount of such preference and no legislation or guidance of a formal character dealing with this matter has been issued. For non-defense purchases, the premium is said to be less than 10 percent and is based on the difference in price of the foreign content in the tenders.[49] The existing arrangements do not exclude the granting of a preference of more than 10 percent under special circumstances. For coal a premium of up to 20 percent can be paid.[50] Provincial governments give a price differential to domestic goods ranging from five to fifteen percent.[51] Ten percent is probably the best average since this is the preferential margin accorded by most provinces, including Ontario, the largest province in terms of commerce and population.

In the United States the principle that government departments must award contracts to the lowest bidder is limited, so far as foreign products are concerned, by the "Buy American" policy which requires that goods of domestic origin (ie. whose domestic components account for over 50 percent of total cost) be purchased by federal agencies for use in the United States except when domestic cost is

unreasonable, domestic materials are not available in sufficient quantity or satisfactory quality, or domestic procurement is inconsistent with the public interest.[52] The most important procedure prescribed for the implementation of the Buy American Act determines the standard of reasonableness by which domestic prices are judged. Given the equality of other factors, United States prices must exceed foreign c.i.f. prices (including duties) by more than six percent, or a total of twelve percent applies if the domestic product is produced in an area of substantial unemployment or by a small business firm.[53]

Since 1962 a "temporary" increase in the six-percent margin of preference to a "benchmark" of 50 percent has been applied to foreign procurement by the Department of Defense.[54] However, in practice this price differential has been estimated to average 28 percent.[55] In no case has a preference of more than 50 percent been applied.[56]

As of 1962 a 50 percent preference has also been applied to all Federal procurement (with the exception of AID expenditures) for use outside of the United States. As for the Agency for International Development, its predecessors shifted away from a free-world-wide procurement policy to more restrictive policies favoring United States suppliers in early 1960, though no specific price preferences have been established by AID.[57]

Apart from the Federal Government, there is a vast, scarcely charted area of Buy-American laws, regulations, and

undeclared policies in the States and local governments.[58] However, most state laws grant preferences to domestic firms by absolutely prohibiting the purchase of foreign steel, rather than by establishing some price differential.[59] United States steel importers regard domestic biased government procurement as one of the most important nontariff import barriers in the country, second only to voluntary export limitations in restrictiveness.[60] A summary of the percentage price preferences applied to government procurement is presented in Table A1 below.

VII. Subsidies.

A. Introduction.

In general, any subsidy has a restrictive effect on imports because it gives domestic producers a competitive advantage vis a vis foreign suppliers. Subsidies may be classified as direct or indirect, according to whether they take the form of a direct cash payment, or the guise of tax exemptions, low-cost loans and other services, reduced raw material and labor costs, or monopolistic privileges which permit higher output prices.[61] Alternatively, bounties may be classified as domestic or export subsidies, depending on whether government aid goes to all domestic production or just to exports. Although domestic subsidies sometimes have the purpose and always the effect of influencing the foreign trade sector of an economy, they are considered in Appendix Three on internal economic policies.

Among the major steel trading countries, indirect

Table A1
Price Preference Given Domestic Goods
by Purchasing Governments[1]

Belgium		10
Canada	Federal	10
	Provincial	10
Luxembourg		10
Netherlands		10
United States	Department of Defense	28
	Other Federal[2]	6

Notes:
1. As a percent of c.i.f. import price.
2. Excluding AID.

Sources: See text.

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subsidies have been favored over direct ones, although steel in particular, does receive some cash payments. The subsidies include accelerated depreciation, investment incentives, low interest rates, "over-priced" government purchases, internal tax rebates, subsidies to factors of production which lower their prices, direct subisidies to exporters, overseas marketing assistance, tied foreign aid, and border tax rebates. Only the last four are pure export subsidies; the others will be considered later. All these subsidies apply to steel, as well as other goods.

B. Direct Export Subsidies.

France is the only major steel-trading country to make cash payments to exporters. It recently started granting indemnities to exporting manufacturers of industrial products in order to compensate for increases in their wage costs following the 1968 crisis.[62] The original "basic rate of compensation" was set at six percent of export production costs.[63] France's European neighbors also appear to subsidize shipment of exports on domestic transportation facilities over which they have control, although the exact amount of subsidization is unknown.[64]

The Japanese Government grants a percentage increase in depreciation allowances[65] and defers the direct profits taxes of exporters.[66] The benefit derived from such deferrals is equal to the alternative cost of obtaining capital saved by using deferred taxes as a substitute source of funds, and this constitutes a pure export subsidy.

C. Overseas Marketing Assistance.

While direct export subsidies are prohibited under the GATT[67] most countries apply various indirect measures to assist in the marketing of all exports.[68] The major selling expenses faced by exporters include insurance, credit, product promotion, market information, and penalties for failure to export.

1. Credit.

Credit granted by exporters in each of the major steel-trading countries can be insured at a nominal premium with their respective governments. Similarly, all ten countries will directly finance exports or refinance credit granted by their exporters. In the case of Britain, Belgium, France, Italy, and Japan, exporters may discount their receivables at a preferential rate, although the first two countries do not disclose the precise amount. For the rest, however, the difference between the preferential and market discount rate can be used to quantify this particular export subsidy.

French exporters, for instance, may discount their receivables with the Bank of France at a rate of 5.8 percent. This contrasts with the regular discount rate of 8.5 percent.[69]

Mediocredito is an agency of the Italian Government which will refinance up to 85 percent of export credit at an interest rate of three percent. The balance of the credit is refinanced at the general interest rate of 8.5 percent. Thus, Italian exporters receive an advalorem export subsidy of 4.7 percent (.85 X .055 where .055 is the difference between government and market discount rates.)[70]

The Export-Import Bank of Japan finances 80 percent of long-term export credit on steel and other capital goods at an interest rate of four percent, considerably lower than the 5.5 percent charged for credit on other manufactured goods. Following the method used for Italy above, this study found the Japanese export subsidy to be 1.2 percent.[71]

2. Product Promotion and Market Information.

All ten major steel-traders also engage in product promotion, consisting of advertising exports; designing, erecting, and financing trade fairs and exhibits; sponsoring trade missions; and covering losses arising from expansion into new foreign markets. Likewise, every country conducts market research, and provides export marketing information to domestic firms. In addition, Canada has a credit reference service for exporters,[72] Japan offers her exporters free consulting engineering services,[73] and France sponsors trade conferences.[74]

3. Penalties as Export Incentives.

The Japanese Government not only offers overseas marketing assistance, but also offers the most direct incentive to export of any major steel trader. Since GATT forbids direct export subsidies, Japan has offered its steel industry an incentive to export by penalizing those firms which do not. The Japanese Government is able to impose penalties through its close control of Japanese cartels in which such inputs as investment capital and raw materials are allocated among firms, and production or sales quotas are established and enforced by fines.[75]

At the end of 1967, the Ministry for International Trade

and Industry(MITI) informed members of the Japanese steel industry that failure to export 10 percent more tonnage in 1968 would result in a production penalty of $28.00 per ton and curtailment of their coke and coal supply.[76] Such a sizable penalty ($28.00 per ton of production equals $140.00 per ton of exports in 1966) would have caused the Japanese supply(SS) function to change in shape. As Figure A2 demonstrates, the supply curve would kink at the price where Japanese exporters would normally be willing to supply 110 percent of 1967 export tonnage. Below that price the new supply curve (SS') would be perfectly inelastic, while above that price the function would retain its original elasticity. The volume of exports would rise and export prices would fall in much the same way they would behave with a subsidy.

D. Tied Foreign Aid.

The tying of economic development grants to purchases in the donor country may oblige the recipient to pay higher prices than it could obtain on the world market.[77] Thus, tied foreign aid may bestow a monopolistic privilege, and in effect a subsidy upon producers in the donor country. Aid commitments as a percentage of gross national product are largest in the United States and France.[78] Moreover, these countries are also foremost in the restrictive tying of aid, though the resulting subsidization has not been quantified.

E. Border Tax Rebates.

1. Introduction.

The rationale of border tax adjustment in general is to place imports on the same footing as domestically produced goods

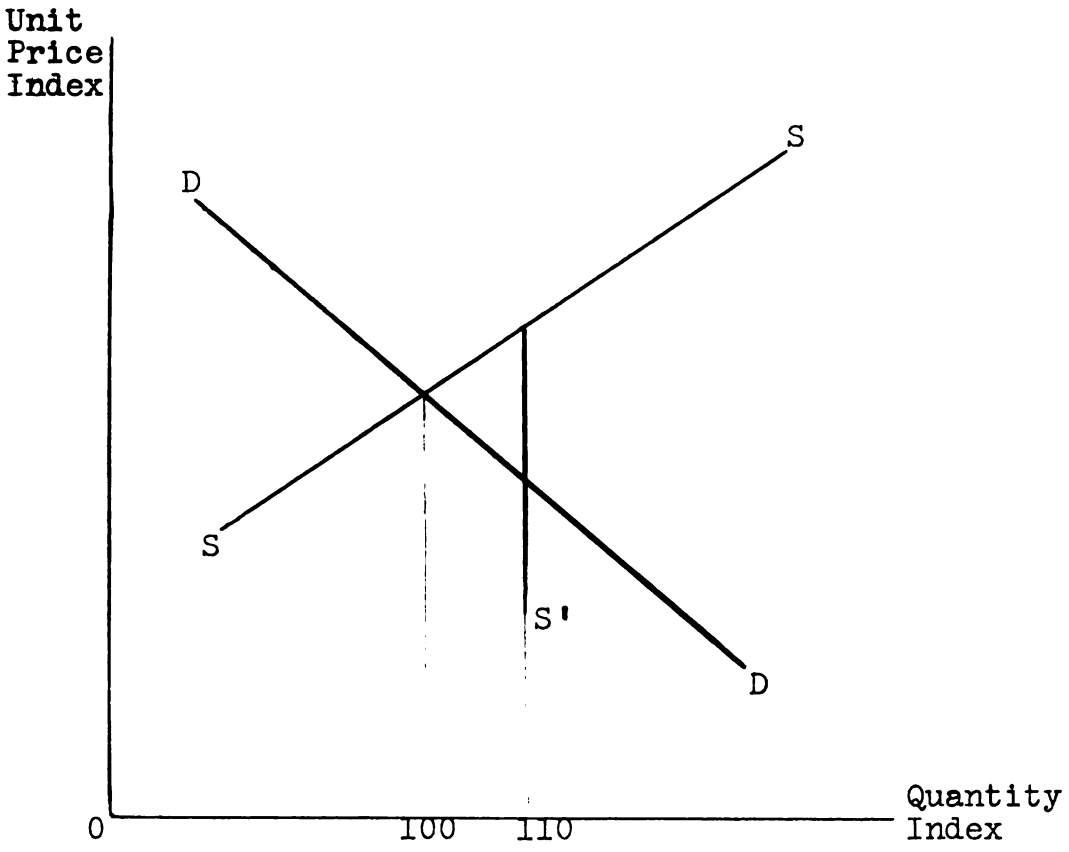

Figure A2
The Japanese Steel Export Market

(1966 export volume = 100)

with regard to taxes imposed on them.[79] The General Agreement on Tariffs and Trade (GATT) has legitimatized the border-tax practices of Western Countries by sanctioning adjustments for indirect taxes in excess of their nominal rate.[80]

There is no widespread agreement over the economic distinction between direct and indirect taxes, and according to John F. Due, "Little is to be gained by seeking to establish definitions of direct and indirect taxes."[81] In the real world of international trade, categorizing taxes has been left to the GATT officials. They have decided that any levy on a particular good "at one or several stages" of production and distribution is indirect, and that net corporate income taxes are direct.[82] Therefore, this will be the definition of direct and indirect taxes used in this study.

In turn, indirect or sales taxes may be classified, according to the manner in which they are collected, as (1) single stage, (2) value-added, or (3) cascade taxes. Single-stage taxes are collected at only one point in the chain of distribution, while cascade taxes are assessed on the value of each transfer of goods. The value-added type effectively taxes only the increase in the value of a product over the value of a sale less the taxes levied on the purchase of inputs (tax occulte).[83]

2. The Direct-Indirect Tax Mix.

The American iron and steel industry, among others, has stated that "the United States is more dependent on direct taxes than on indirect taxes."[84] Moreover, it claims that

under current GATT rules " a country with a high ratio of direct to indirect taxes is at a disadvantage in export markets when competing with a country whose fiscal system is weighted in favor of indirect taxes."[85]

As for the statement that the United States relies more upon direct taxation, this is not at all clear, because of the different bases to which taxes can be related. It is true that when the total tax bill is used a a base (as in Table A2), the proportions of direct and indirect taxes show a stronger dependence on direct taxes in the United States, than in any other major steel-trading country, save Japan. Using GNP as a base (as in Table A3), the United States still appears to rely relatively more on the non-adjustable direct taxes than most countries, but the differences shown in Table A3 are less pronounced than in Table A2. However, in order to compare the actual tax burden of steel companies in the ten countries considered here, net corporate income may be a more appropriate measure. By this base, the direct tax burden on the United States corporations is almost equal to that imposed on most foreign companies, as shown in Table A4.

3. The Effect of the Tax Mix on Trade.

Given that the United States may rely slightly more on direct taxes than on indirect taxation, the question remains: Does this nonrebatable burden inhibit United States exports and encourage United States imports? Those who answer affirmatively argue as follows: If direct taxes are shifted forward, they raise the price of the good to the buyer. If the

Table A2
Direct and Indirect Taxes as a Percentage of Total Taxation*

	Profit Taxes	Consumption Taxes
Belgium	6.5	36.9
Canada	16.0	33.1
France	4.8	34.1
Germany	11.2	28.8
Italy	2.0	33.0
Japan	23.2	27.9
Netherlands	8.1	24.8
United Kingdom	6.7	34.7
United States	16.0	19.6
Luxembourg	NA	NA

*1963-1965 average

Source: Organization for Economic Cooperation and Development, Border Tax Adjustments and Tax Structures in OECD Member Countries, Paris: 1968,p.198.

Table A3
Direct and Indirect Taxes as a Percentage of GNP

	Profit Taxes	Consumption Taxes
Belgium	1.8	10.2
Canada	4.2	8.7
France	1.8	12.8
Germany	3.8	9.7
Italy	6.0	10.2
Japan	4.5	5.4
Luxembourg	NA	NA
Netherlands	NA	8.3
United Kingdom	2.0	10.3
United States	3.9	4.8

Source: Organization for Economic Cooperation and Development, op. cit., p. 199.

Table A4
Profits Tax as a Percentage of Corporate Profits

Belgium	36
Canada	50
France	50
Germany	66
Italy	48
Japan	35
Luxembourg	40
Netherlands	47
United Kingdom	40
United States	48

Source: Organization for Economic Cooperation and Development, op. cit., p. 195.

United States depends more on direct taxation, but can only exempt exports from indirect taxes, its export prices will be higher than those of Europe, because Europeans who depend more on indirect taxes are also able to rebate more on their exports. Moreover, United States goods face higher indirect taxes at the borders of foreign countries than foreign goods face upon entrance to the United States.

This line of reasoning is partly based on three tenuous assumptions: (1) The incidence of taxes is the same in each country; (2) the incidence of taxes is the same for imports and exports as it is for domestically traded goods; and (3) the tax burden shifted forward in the case of direct taxes is at least equal to the tax burden passed forward in the case of indirect taxes. The first assumption requires that demand and supply elasticities for all goods are precisely related to each other in the same way in each country. The second assumption depends on the foreign trade demand and

supply elasticities for each country satisfying the same exacting relationship as the domestic elasticities.

The third assumption is necessary if a direct tax rebate is to lower export prices in the same way that an indirect tax rebate lowers export prices. It has been tested empirically with differing results, none of which indicate the incidence of direct and indirect taxes to be equal, and only one of which finds the incidence to be higher. Zero shifting has been found by M. A. Adelman[86] and C. Hall,[87] while 100 percent shifting has been found by Musgrave and Kryzyzniak.[88] A debate, to lengthy to summarize here, has ensued over the reliability of these empirical tests.[89] As for this study, the traditional theoretical notion that there is zero shifting in the short-run shall be retained, and the doubtful impact of small differences in the direct-indirect tax mix ignored. Balassa concurs with this evaluation when he concludes that "the greater reliance on direct taxes in the United States, compared to European countries, does not discriminate against American exports to an appreciable extent."[90] This conclusion should not prejudice the present study's results to any great extent, since even under the assumption of equal incidence for direct and indirect taxes, rebates of direct taxes have been estimated to have a very small effect on export prices. Using taxes as a percentage of GNP for 1961, Aliber and Stein found less than a two percentage point difference among the direct taxes of France, Germany, Japan, the United Kingdom and the United States. They found that

the rebating of direct taxes on United States exports would lower their price by almost five percent, assuming an equal incidence for direct and indirect taxes. However, if other countries also rebated direct taxes, the relative prices of United States exports would decrease by considerably less: one to two percent.[91]

A more recent contribution, it should be noted, has found that if social security taxes are included with other non-rebatable direct taxes, the United States has a competitive advantage under the existing border adjustment system. On the other hand, the same study has also found that the present European border adjustments for indirect taxes have placed United States exports at a competitive disadvantage in foreign markets. Even though domestic and border tax rates may be equal, different elasticities of supply and demand, apparently cause distortions in trade flows.[92]

4. Rebates in Excess of Indirect Taxes.

There are two ways in which border tax adjustments may unambiguously distort trade patterns, and become nontariff barriers. Firstly, when the border tax imposed on imports is more than that assessed on similar domestic products at the same stage of distribution, there may be a tariff-like restriction of imports. Secondly, when the border tax rebate granted exports is more than the tax levied on domestic sales of the same good, there may be a pure export subsidy. Import border taxes are considered later in the section on internal economic policies since their purpose, and for the

most part their effect, is to levy the same internal tax on all goods. Border tax rebates on exports, on the other hand, have the intent of at least equating the competitive position of a country's exporters with that of foreign suppliers, and may be appropriately considered in this section on foreign economic policies. Almost all of the cascade-tax countries considered here lack any uniformity between their rebates to exports and extra charges on imports, due to the arbitrary manner in which these border tax adjustments are calculated.[93]

The GATT's opposition to export subsidies is implicit in its recognition that "a subsidy on the export of any product may have harmful effects for other contracting parties both importing and exporting... and may hinder the achievement of the objective of this agreement."[94] The treaty does not consider exemption of taxes levied on similar domestic goods to be a subsidy, nor does it permit tariff retaliation by another country to compensate for refunds of taxes imposed on an exported product.[96] It is these excessive rebates which constitute pure export subsidies, but the question remains as to the occurence of this type of subsidization among the major steel trading countries. In turn, the answer to this question requires an examination of the indirect tax systems in each of the nations under consideration.

Belgium, Italy, Luxembourg, and the Netherlands usually apply cascade taxes, though they plan to switch to value-added taxation systems in 1970 in accordance with EEC tax harmonization. France and Germany apply value-added taxes,

while Canada, Japan, and the United Kingdom levy single-stage taxes at the wholesale or retail level. The United States levies only a few special excise taxes at the Federal level, while the states apply both single-stage taxes at the retail level or cascade taxes on every transfer of property.

Usually single-stage taxes are not levied on steel exports, but if they are, rebates are generally equal to the tax and cause no subsidization. Steel exports are usually exempt from value-added taxes, and only the amount of tax actually paid on inputs is refunded to the exporter, so that once again there are no bounties for exporters. Rebates to steel exporters for cascade taxes, on the other hand, usually subsidize exports and create corresponding nontariff barriers to imports. This conclusion is based on the following generalizations, which are supported by detailed consideration of the taxes, rebates, and industrial structure in the four cascade-tax countries mentioned above.

The border-tax rebate of cascade taxes on any good constitutes an export subsidy for two reasons. First, it often includes taxes on purchases of plant, equipment, power, and services while the GATT Article VI provides that only taxes on the product itself may be rebated.[97] Second, the amount of tax remitted is usually determined in accordance with arbitrary tax remission rates established by the cascade-tax countries, as distinguished from an exact accounting by the applicant of the amount of taxes in fact paid on the

materials used in producing the goods for export. In many cases the amount of tax refunded under this formula exceeds the tax paid by the manufacturer with respect to the raw materials purchased by him for use in manufacturing the exported merchandise.[98] For instance, the frequency with which rebates tend to exceed tax occulte in Europe is reported to have created many problems within the Common Market.[99]

For steel in particular, the border tax rebates result in export subsidization because there are few if any actual payments of tax occulte to be compensated for. The high degree of vertical integration in steel makes taxable purchases of raw materials uncommon. Moreover, the few inputs which are purchased are generally subject to extremely low or non-existent taxes. Finally, inputs for steel that is destined for export are usually exempted from all taxes and duties. Proof of each statement in this and the preceding paragraph can be found below. Rebate and border tax rates referred to below are expressed as a percent of c.i.f., duty-paid value, excluding the tax charges.

a. Rebates for Taxes on Plant, Equipment, and Power.

Article VI of the GATT provides that "no <u>product</u>... imported into the territory of any other contracting party shall be subject to anti-dumping or countervailing duty by reason of the exemption of <u>such product</u> from duties or taxes borne by the <u>like product</u> when destined for consumption in

the country of origin... or by reason of the refund of such duties or taxes."[100] (Emphasis added) Nevertheless, Belgian and Luxembourg rebates include taxes paid on purchases of machines and equipment, estimated property taxes, as well as taxes paid on processing, transportation, and rental expenses concerned with the handling of goods prior to exportation.[101] The rebatable Italian taxes include levies on the furnishing of heat, light, and power, as well as those on sales of the product at various stages of production and distribution.[102] In the Netherlands, provision is made for rebates of taxes paid on solid fuels,electricity, gas, capital equipment, and services in the manufacture of exports.[103]

b. Arbitrary Rebates.

Belgian steel exporters, in addition to being exempt from the sales tax on their finished product, receive a lump-sum export rebate which averages seven percent.[104] Since the amount of the rebate does not vary directly with the degree of finishing, no clear relation between tax occulte and export rebates seems to exist.[105] Similarly, Dutch rebates, ranging from 0.75 to 10.4 percent, are paid to exporters to compensate for "estimated" tax occulte. Exports from the Netherlands are not only exempt from the standard tax of 5.25 percent; but also receive a rebate averaging 5.57 percent.[106] Luxembourg applies an across-the-board rebate of one percent to all products, including steel, regardless of their stage of manufacture.

Iron and steel mill products in Italy are subject to a

cumulative turnover tax of four percent, and Italian steel exporters receive a four percent refund.[107] To compensate for estimated taxes on inputs, however, additional export rebates are granted which vary from 3.6 to 7.8 percent for steel.[108] "The rate of 4.8 percent of the export price is allowed on most exported steel products."[109] Yet another rebate is added to Italian steel exports. The rates of this rebate on iron and steel mill products vary from Lire 15 to Lire 30 per kilogram.[110] This specific rate is the equivalent of $25 to $50 per metric ton, or an advalorem rate of 18 to 35 percent.

The first Italian compensatory export rebate is an estimated average of taxes paid.[111] Nevertheless, a Congressional study has concluded that the refund appears to be excessive.[112] As for the second, specific, export rebate, it is calculated on a weight-basis without regard to the taxes paid.[113] Adding the minimum specific rebate (in advalorem form) to the first advalorem rebate, one obtains a total export subsidy of 22.8 percent due to border tax rebates.

Referring to two of these cascade-tax countries, specifically, the OECD has concluded that "it is quite possible that the tax refunded on particular products to certain firms might be higher than the average tax paid on these products on the home market."[114] With respect to steel this appears to be an understatement.

c. Vertical Integration in Steel.

It has been pointed out that under the cascade-tax system, the amount of tax paid by a producer may vary greatly from one firm to another, depending on the degree of vertical integration.[115] Since most steel comes from fully integrated manufacturers in the cascade-tax countries, any refund of "estimated" tax occulte seems unjustified. For instance, owners of the Belgian steel industry also control most of the coal mines, with the result that Belgian mills produce 75 percent of their own coke requirements.[116] In addition, the Belgian steel companies "control sufficient iron ore deposits in Luxembourg and France to cover their requirements."[117] The Italian state controls most of the country's crude steel, coal, and iron ore production and the consequent steel complex "in effect constitutes a large vertical concentration from raw materials to final products."[118] The steel industry in Luxembourg is owned by highly integrated Belgian and German steel companies, one of which, for instance, controls one-fourth of the Saar region's steel output, some coal mines in Germany, iron ore mines in France, fabricating plants in Belgium and Germany, as well as 60 percent of Luxembourg's 1955 crude steel output.[119] Many of these large steel complexes are export-based, since only a small share of their output is sold domestically. With respect to such firms the OECD has concluded that "the export intensive firm, being generally larger and more integrated than the average domestic firm selling similar

products is likely to have paid less tax on each product than the average firm on the home market."[121]

d. Low Input Taxes.

Many inputs are either taxed at very low rates or are exempt from taxes in the four countries considered here. Such important raw materials for Belgian steel as iron ore and coal are subject to only a one percent lump-sum tax,[122] and certain services carry a reduced tax rate of 0.7 percent.[123] Moreover, the OECD reports that any raw materials or semi-finished products can be exempted from transmission taxes if they are destined for export from Belgium, Italy, and the Netherlands.[124] Italian materials may bear a tax rate as little as 0.6 percent,[125] fuels used in steelmaking as little as one percent, and purchases of capital assets are exempt from taxation. According to the USDC, Luxembourg levies a 0.75 percent tax on fuel oil, and 3.75 percent tax on coal, but exempts purchases of gas, water, electricity, and some services and raw materials from taxation.[126] In general, the Department of Commerce reports that raw materials are taxed at a rate of one percent in the Netherlands, while fuels, such as coal, are exempt from Dutch tax.[127]

e. Exemptions from Import Duties.

All four of the major steel traders which are cascade-tax countries also import much of their steel-making raw materials. Belgium imports over 20 percent of its coke requirements as well as iron ore from the Lorraine region of

France and from Sweden.[128] Italy imports all of its coal for coke production, and over half of its iron ore and scrap.[129] Luxembourg uses its own low-grade of iron ore, but must import a higher grade from Lorraine as well as all of its blast furnace coke.[130] The Netherlands imports about 40 percent of its coal requirements and virtually all of its iron ore.[131]

To the extent that these raw materials are destined for export in the form of steel, and much of them are exported, they are exempted from all taxes and duties in the four countries considered here.[132] Nevertheless, this exemption does not appear to affect the estimates of export rebates in these countries.[133] According to the United States Department of Commerce, the estimated rebates often include an amount to compensate for duties paid on imported inputs.[134] Italy, for instance, grants a rebate of "presumed customs duties and indirect taxes (other than the general turnover tax) paid on the raw materials..."[135]

f. Conclusion.

As the preceding pages point out, arbitrarily determined rebates to steel exports for nonexistent payments of tax occulte seem totally unjustified. In the case of steel exports from the four cascade-tax countries mentioned above, in fact, the input tax rebates appear to be pure export subsidies. In contrast, the value-added-tax countries give refunds for only those input taxes which are proven to be paid, and no pure export subsidy results. On the other hand,

one single-stage-tax country, the United Kingdom, does subsidize steel exports with a rebate on steel exports of about three percent. Because the steel rebate has the official purpose of promoting overseas sales, and is granted in addition to the export refunds for specific input taxes, the three percent rebate can be looked upon as a pure export subsidy.[136]

In summary, the extent to which border rebates subsidize exports from each of the major steel-trading countries is shown in Table A5.

Table A5
Export Subsidization Due to Border Tax Rebates*

	Excess Border Tax Rebate
Belgium	7.00
Canada	0.00
France	0.00
Germany	0.00
Italy	22.80
Japan	0.00
Luxembourg	1.00
Netherlands	5.57
United Kingdom	3.00
United States	0.00

*As a percent of export price.

Source: See text.

VIII. Import Surcharges.

These import levies are additional (often temporary) border taxes on foreign goods which are not related to any other charge, such as tariffs, internal taxes, or customs

fees. The American steel industry has claimed that the countries of the European Coal and Steel Community have been "dealing with their steel import problem by imposing duty increases or import surcharges within the past two years."[137] However, there is no evidence of surcharges (by this study's definition) in the Common Market, except in the case of Luxembourg, which has imposed a surcharge for some time.[138] The current rate of the Grand Duchy's surcharge is three percent on the c.i.f., duty-paid value of imports.[139] United States steel producers , themselves, have erected a barrier of uncertainty to United States steel imports by publicly asking Congress for a temporary, import surcharge on steel in 1967.[140] This action supplemented the industry's standing request for an import quota.

Nevertheless, this discussion should not gainsay the fact that many other countries have imposed import surcharges in the past. The most recently retracted levies were in Canada and the United Kingdom. Starting in October, 1964, the British imposed a surcharge of 15 percent on all imports except certain foodstuffs, and raw materials, and the levy was not eliminated until November, 1966.[141] However with regard to solving the British balance of payments problems "the surcharge was not very effective under conditions of overfull employment and excess demand."[142]

In June, 1962, Canada imposed surcharges of fifteen, ten, or five percent on products affecting about one-half of its total annual imports, but eliminated the levy on March 31,

1963.[143] The five percent surcharge applied to most steel products.[144] The Canadian surcharge greatly reduced imports during its brief operation, due to "the slack" in the Canadian economy.[145]

IX. Antidumping Measures.

A. Introduction.

Jacob Viner's classic work on the subject defines dumping as "price-discrimination between national markets."[146] Dumping commonly refers to sales of a good to foreign purchasers at a price lower than the price of the same goods to domestic buyers.[147] Although governments appear to be more concerned with the effect of low-priced, dumped imports on domestic producers, the main economic objection to dumping is the imperfectly competitive conditions which cause it.[148] In fact, dumping has the economic advantage of giving import buyers the benefit of lower prices.[149] Although buyers in the dumping country are discriminated against, their prices may not necessarily be higher, and even if they are, this decrease in the real income of consumers must be weighed against the increased profits of producers.[150] The uncommon occurrence of predatory dumping to force out competitors is the only time when economics does not justify dumping.[151] Still, the consequence of governmental preoccupation with protecting domestic producers has been the proliferation of regulations that authorize antidumping duties to compensate for the lower export price of dumped goods. Apart from countervailing duties, the administrative

procedures implementing antidumping regulations may, in themselves, hinder imports through delay and uncertainty.[152]

The GATT recognizes the harm to domestic industry caused by dumping, and it permits contracting parties to levy countervailing tariffs to make up the difference between the dumped-import price and the normal price. The normal price is defined as either the comparable domestic price in the exporting country, or in its absence, the export price of a third country, or the cost of production and selling plus a reasonable profit margin in the exporting country. Due allowance must be taken for legitimate differences in price, and no duty may be levied, except in the case of subsidies, unless material injury is expected to befall an established or infant industry. Since the determination of possible injury usually involves some delay, the importing country may make an immediate, but temporary, countervailing levy.[153]

For the most part, antidumping regulations in the major steel trading nations conform with the GATT provisions.[154] There are a few inconsistencies in government practices and loopholes in the GATT, however, some of which will be rectified or closed by the Kennedy Round Antidumping Code. These problems will be taken up below, together with a consideration of how steel has fared regarding antidumping measures. Steel, it should be noted, is considered to be "one of the foremost candidates for dumping" because of the "prevalence of oligopolies" in the steel industries of many countries.[155]

B. Comparative Analysis of Antidumping Measures.

As part of European economic integration, the EEC plans a common antidumping policy.[156] Until recently, however, most European countries had no antidumping laws.[157] There are no specific antidumping regulations in the Netherlands, but measures can be taken under the Customs tariff procedures set up by the Benelux treaty. These procedures provide for countervailing duties of 10 percent minimum to twice the regular tariff rate at a maximum on goods from countries "which maintain a less favorable policy (toward)... or whose policy interferes with the vital interests of the Benelux countries."[158] Similarly, the Benelux agreement guides the antidumping policies of Belgium and Luxembourg, though Belgium has also incorporated the provisions into law.[159] The formal legal power in Belgium was found to be wider in scope than GATT permits in a 1957 study, but GATT restraints on antidumping practices were claimed to have been respected in executive orders.[160] Another restrictive effect of the Belgian system is that importers have no opportunity to present their side of the case.[161] Adoption of the new Kennedy Round Antidumping Code, however, is supposed to ensure fair and open hearings where importers can defend their interests.[162] Out of the 10 antidumping complaints lodged by Belgian producers between 1948 and 1958, only three were subjected to antidumping measures, and none of the three goods were steel products.[163]

Canadian antidumping provisions are unique in that an

undefined, normal duty valuation is used as a basis for determining the margin of dumping.[164] The penalty for dumping is a countervailing duty which may not exceed 50 percent of the normal market values.[165] Another unique aspect of Canadian law is that no injury to domestic industry is required for antidumping duties to be levied.[166] Canada does not report the number of requests for antidumping restrictions nor the times they are granted.[167] Therefore, no official information is available on restriction of steel imports in particular nor of imports in general, except for the Canadian-American Committee's estimate that "Canada has not made extensive use of the valuation process as a deliberate means of restricting trade..."[168] The GATT finds Canadian antidumping provisions narrower in scope than its own, except insofar as the injury requirement is concerned.[169] Now, Canada has in effect agreed to adopt an injury requirement by accepting the Kennedy Round Antidumping Code.[170]

France, Germany, and Italy, all have laws which delegate general powers concerning antidumping measures to their respective customs authorities.[171] The three countries customs codes authorize imposition of countervailing duties under the same circumstances provided by the GATT: below-normal prices or subsidies, and serious injury.[172] Recent modification of French law, however, increases the applicability of antidumping measures by narrowing the definition of an industry in cases where serious injury is claimed.[173]

Germany has taken no formal action against steel, but

German officials forced one United States steel company to recently raise its prices with the threat of antidumping duties.[174]

The Japanese have no specific antidumping legislation, though this type of protection is afforded by the Customs Tariff Law of 1910.[175] Article 9 of the Law provides relief along the same lines as GATT, but allows the government to impose countervailing duties retroactively—a practice which increases the uncertainty of importing.[176] There is no information available on the extent to which the Japanese use antidumping measures to stop steel imports.

British countervailing duties may be levied only after a Board of Trade order is confirmed by an affirmative resolution of the House of Commons.[177] Usually the Board of Trade awaits complaints from domestic industry before investigating or initiation action against dumping, according to GATT provision.[178] Such a complaint (concerning steel imports) has been publicly contemplated by the British Iron and Steel Federation recently.[179] Between 1961 and 1964, 29 antidumping complaints were made by various British industries, but none of these formal complaints involved steel.[180]

While the United States antidumping legislation generally conforms with GATT rules,[181] it has also been subject to more complaints concerning delays and administrative practices.[182] The GATT has found United States legislation to be wider in scope than its own regarding the injury

requirement,[183] but Europeans report that in practice less stringent injury requirements have only been applied on agricultural products.[184] United States law also empowers the administration to levy countervailing duties on subsidies granted by private parties, such as cartels, while the GATT restricts them to goods subsidized by governments,[185] except for cases of material injury. Neither of these inconsistencies were apparently corrected by the Kennedy Round Antidumping Code, whose main impact on the United States has been to require injury adjudication and thus the withholding of appraisement to last no longer than 90 days.[186]

Information on the overall number and disposition of antidumping cases is presented in Table A6. Although the data are overlapping, it does demonstrate that antidumping measures do not restrict imports primarily through imposition of countervailing duties. In almost one-half of the most recent cases appraisement was withheld and importers did not know what profit if any to expect on their sales, even though in most cases antidumping duties were never assessed. In approximately one-fourth of the cases, the threat of antidumping restrictions has forced import price increases. Between 1948 and 1957, one of two antidumping actions was taken against cast iron pipe from the United Kingdom.[187] According to the Canadian-American Committee the action was based on injury to "one marginal producer" who "had not been making a profit even when there had been no imports."[188] By the Committee's reckoning, imports equalled less than

"four-tenths of one percent of domestic production."[189]

Table A6
United States Antidumping Cases

Calendar Years	Number of Cases	No Price Discrimination	Price Revision	No Injury	Injury	Appraisement Withheld
1948-1957	96	NA	NA	NA	2	NA
1955-1963	282	187	62	27	6	NA
1959-1964	194	108	53	25	8	89

Sources: 1st row - GATT, op. cit., p. 117.
2nd row - Hemmendinger, op. cit.
3rd row - United States Congressional Record, June 1, 1965.

During the period 1959-1964, steel imports were subjected to one-fourth of the antidumping restrictions applied. Two 1964 actions imposed antidumping duties on steel reinforcing bars from Canada, and on carbon steel bars and shapes from the same country.

Two years before these two events, however, a more publicized dumping complaint was entered against imports of steel wire rods from the EEC and Japan. Although imports from the EEC were found to be sold at "lower than fair value," the Tariff Commission found that no American industry was being injured as a result of the dumping.[190] Nevertheless, the number of complaints and the uncertainty and delay they lead to caused United States steel importers to rank antidumping measures in third place among America's nontariff restrictions.[191]

X. Footnotes.

[1]Kelly, op. cit., p. 276.

[2]Subcommittee on Foreign Economic Policy, Joint Economic Committee, 87th Congress, 1st Session, Trade Restraints in the Western Community, United States Government Printing Office: Washington, D.C., 1961, p. 11.

[3]Joint Economic Committee, 89th Congress, Hearings before the Subcommittee on Foreign Economic Policy: The Future of United States Foreign Trade Policy, United States Government Printing Office: Washington, D.C., July, 1967, p. 311, 314, 317, 321, 331, 332, 335, 341; Foreign Trade and Tariff Proposals, House Ways and Means Committee, 90th Congress, 2nd Session, United States Government Printing Office: Washington, D.C., 1967, Pt. 9, p. 3944, 3901, 3902, 3903; F. Masson and J. B. Whitely, Barriers to Trade Between the United States and Canada, Canadian-American Committee, 1960, p. 22; United States Treasury Department, Bureau of Customs, United States Imports Requirements, United States Government Printing Office: Washington, D.C., 1965, p. 6.

[4]Ibid.

[5]Joint Economic Committee, op. cit., p. 334.

[6]United States Department of Commerce, "Japan Lifts Import Restrictions on 39 Additional Commodities," International Commerce, United States Government Printing Office: Washington, D.C., October 26, 1964, p. 14.

[7]Foreign Trade and Tariff Proposals, Pt. 9, op. cit., p. 3944.

[8]Trade Restraints, op. cit., p. 18.

[9]See Figure 4.

[10]H. Chaliners, "Operation of Foreign Import-License and Exchange-Control Systems," Foreign Commerce Weekly, August 15, 1949, pp. 3, 4.

[11]International Monetary Fund, 19th Annual Report on Exchange Restrictions, Washington, D.C., 1968.

[12]United States Department of Commerce, "France Reimposes Exchange Controls in Wake of Crisis," International Commerce, July 7, 1968, p. 22.

[13]See Figure 4.

[14]Future of United States Foreign Trade Policy, op. cit., p. 308.

[15]Overseas Business Reports, 65-11, op. cit.

[16]See Figure 4.

[17]Foreign Trade and Tariff Proposals, Pt. 7, op. cit., p. 1034.

[18]Future of United States Foreign Trade Pclicy, op. cit., p. 310.

[19]Overseas Business Reports, 68-83, op. cit., p.6.

[20]See Figure 4.

[21]"The Community Deals with French Crisis," European Community, August, 1968, No. 115, p. 3.

[22]Kelly, op. cit., p. 210.

[23]K. Bauge, Voluntary Export Restrictions as a Foreign Commercial Policy with Special References to Japanese Cotton Textiles; Unpublished Ph.D. thesis, Michigan State University, 1967.

[24]"Steel: Barriers to Imports," Time, January 24, 1969, p. 67.

[25]"Steelmakers in Europe, Japan, Appear to Agree to Curb Exports to United States," The Wall Street Journal, November 20, 1968, p. 3.

[26]Ibid.

[27]United States Department of Commerce, "The Export and Import Trade of the United States," Overseas Business Reports, 69-2, op. cit., March, 1969, p. 11.

[28]See Figure 4.

[29]Letter from a West-coast metal importer.

[30]Parlement Europeen, Documents de Seance, 1965-66, Document 1, March 22, 1965, and Article 14, Stockholm Convention.

[31]Congressional Record, United States Government Printing Office: Washington, D.C., April 28, 1965, pp. 8716-8721; "Cabinet Order No. 336," Official Gaxette of the Japanese Government, September 25, 1963, Translation for Congressional Record, op. cit., May 9, 1965, p. 9706; Organization for Economic Cooperation and Development, op. cit., pp. 65, 66; Federal Property and Administrative Services Act of 1949, 41 United States Code 251 et seq.; Armed Services Procurement Act of 1947 (now Chapter 137 or Title 10 of the United States Code.)

[32]Parlement Europeen, op. cit., p. 3; Congressional Record, op. cit., April 29, 1965, p. 8900; Organization for Economic Cooperation and Development, op. cit., pp. 103-5.

[33]Foreign Trade and Tariff Proposals, Pt. 1, op. cit., p. 225; Organization for Economic Cooperation and Development, Government Purchasing, p. 38; "Cabinet Order No. 336," Official Gazette of the Japanese Government, September 25, 1963, Translation for Congressional Record, op. cit., May 9, 1965, p. 9706; Congressional Record, April 28, 2965, op. cit., p. 8721; see Massel, op. cit., pp. 65,67,68; N. Hemmindinger, Non-Tariff Trade Barriers of the United States, United States-Japan Trade Council, Washington, D.C., 1964, pp. 8-12; M.S. Massel, Competition and Monopoly; Legal and Economic Issues, Washington, D.C., The Brookings Institution, 1962, p. 64; Kelly, op. cit., pp. 278-9; Towle, op. cit., pp. 544-7; Subcommittee on Defense Procurement, Joint Economic Committee, 88th Congress, 1st Session, Hearings on the Impact of Military Supply and Service Activities on the Economy, United States Government Printing Office: Washington, D.C., 1963; H. van Cleve, "The Use of Federal Procurement to Achieve National Goals," 1961 Wisconsin Law Review 566, 577-92; Knapp, "Buy-American Act: A Review and Assessment," 1961 Columbia Law Review, 430; Gantt and Spect, "Domestic v. Foreign Trade Problems in Federal Government Contracting: Buy-American Act and Executive Order," Journal of Public Law 378, 1968; Masson and Whitely, Barriers to Trade between Canada and the United States, op. cit., pp. 39-45; Organization for Economic Cooperation and Development, op. cit., pp. 107-115.

[34]Report by the Tariff Board, "Radio, Television, and Related Products," Reference no. 123, Ottowa: 1965, p. 28; Organization for Economic Cooperation and Development, op. cit., p. 56, 103.

[35]B. Balassa, Trade Liberalization among the Industrial Countries, McGraw-Hill; New York, 1967, p. 65; "European Non-Tariff Obstacles to Trade Criticized," European Community, August, 1965, No. 84, p. 8; Foreign Trade and Tariff Proposals, op. cit., p. 255; Organization for Economic Cooperation and Development, op. cit., p. 103.

[36]Organization for Economic Cooperation and Development, Government Purchasing in Europe, North America and Japan; Regulations and Procedures, Paris: 1966, p. 115; Congressional Record, April 29, 1965, p. 8903.

[37]Foreign Trade and Tariff Proposals, op. cit., Pt. 1, p. 242.

[38]Organization for Economic Cooperation and Development, Government Purchasing, pp. 36, 37.

[39]Organization for Economic Cooperation and Development, Government Purchasing, p. 38.

[40]Foreign Trade and Tariff Proposals, op. cit., p. 255.

[41]Organization for Economic Cooperation and Development, op. cit., p. 61.

[42]Ibid., p. 72.

[43]Foreign Trade and Tariff Proposals, op. cit., Pt. 1, p. 303.

[44]The Financial Times, February 22, 1965, p. 1.

[45]Congressional Record, op. cit., April 28, 1965, p. 8721.

[46]Ibid., p. 8722; Foreign Trade and Tariff Proposals, Pt. 1, op. cit., p. 225.

[47]Masson and Whitely, Barriers to Trade between Canada and the United States, op. cit., p. 64.

[48]B. Balassa, Trade Liberalization among the Industrial Countries, op. cit., p. 65.

[50]"How Governments Buy," Industrial Canada, June, 1968, p. 12.

[51]Congressional Record, May 4, 1965, p. 12.

[52]Buy-American Act of 1933, 41 United States Code 10a to 10d.

[53]Executive Order 10582, 10 Federal Register 8723, December 17, 1954.

[54]Kelly, op. cit., p. 279.

[55]Impact of Military Supply, op. cit., p. 357.

[56]Organization for Economic Cooperation and Development, op. cit., p. 113.

[57]Joint Economic Committee, 88th Congress, 1st Session, Steel Prices, United Costs, and Foreign Competition, United States Government Printing Office: Washington, D.C., 1963, p. 489.

[58]Hemmindinger, op. cit., p. 11; Foreign Trade and Tariff Proposals, op. cit., p. 2902.

[59]Texas Association of Steel Importers v. Taxas Highway Commission, Docket No. A-9515, Supreme Court of Texas, November 6, 1963; Newsletter, West Coast Metal Imports Association, Inc., Vol. 3, No. 1, January, 1969.

[60]See Figure 4.

[61]Towle, International Trade and Commercial Policy, p. 467.

[62]Time, July 5, 1968, p. 56.

[63]European Community, op. cit., August, 1968, p. 3.

[64]Steel Imports, op. cit., p. 39; "ECSC High Authority Decision," Journal Officials Des Communantes Europeenes, June 17, 1967.

[65]Foreign Trade and Tariff Proposals, op. cit., p. 2902.

[66]Ibid., p. 2902.

[67]General Agreement on Tariffs and Trade, ArticleXVI, as revised by the Protocol Amending the Preamble and Parts II and III of the General Agreement, dated March 10, 1955.

[68]Balassa, op. cit., p. 67.

[69]Foreign Trade and Tariff Proposals, op. cit., p. 2910.

[70]Steel Imports, op. cit., p. 39.

[71]See preceding page.

[72]Trade and Commerce, op. cit., p. 13.

[73]Foreign Trade and Tariff Proposals, op. cit., pp. 2002-2004.

[74]Ibid., p. 2911.

[75]Steel Imports, op. cit., p. 329; 328.

[76]Japan Metal Trade Bulletin, January 11, 1968, p. 1.

[77]H. G. Johnson, Economic Policies toward Less Developed Countries, op. cit., pp. 27, 82.

[78]In 1962, the percentages were .66 percent and 1.32 percent respectively. See A. Pincers, "The Cost of Foreign Aid," Review of Economics and Statistics, Vol. 45, November, 1963, p. 364.

[79]Properly applied border tax adjustments do not discriminate against foreign in favor of domestic goods, even if internal taxes are higher in the importing country. Therefore differences between the absolute value of indirect taxes are not considered to erect non-tariff barriers in this study, as they are in other works. Cf. Dosser, op. cit., pp. 230, 231.

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[82]H. Junz, "The Border Tax Issue Defined," Issues and Objectives of United States Foreign Trade Policy, Joint Economic Committee, United States Congress, 90th Congress, 1st Session, September, 1967, pp. 31-32.

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[84]Steel Facts, October, 1963, p. 3.

[85]Ibid.

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[88]Musgrave and Kryzyzniak.

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[91]R. Z. Aliber and H. Stein, "Price of United States Exports and the Mix of Direct and Indirect Taxes," American Economic Review, September, 1963, pp. 703-10.

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[93]See below.

[94]GATT, Article XVI.

[95]GATT, Article XVI and Article VI, Paragraph 4.

[96]GATT, Article XVI, Paragraph 4.

[97]Foreign Trade and Tariff Proposals, op. cit., p. 2222.

[98]Ibid., p. 1147.

[99]J. Jansen, "Tax Harmonization in the Community," European Community, January, 1968.

[100]GATT, Basic Instruments and Selected Documents, Geneva, Article VI.

[101]Foreign Trade and Tariff Proposals, op. cit., p. 2913.

[102]Ibid., p. 2223.

[103]Ibid., p. 2917; and Organization for Economic Cooperation and Development, Border Tax Adjustments and Tax Structures in OECD Member Countries, Paris, 1968, p. 149.

[104]Belgian Office of Foreign Trade, Taux de la Ristorine, April, 1969, Section 73.

[105]Ibid.

[106]Organization for Economic Cooperation and Development, op. cit., p. 148, but see Foreign Trade and Tariff Proposals, pp. 281, 3902.

[107]Foreign Trade and Tariff Proposals, op. cit., p. 2906.

[108]Letter dates June 25, 1969, United States Embassy, Rome, Italy.

[109]Steel Imports, op. cit., p. 37.

[110]United States Embassy, Rome, op. cit.

[111]Organization for Economic Cooperation and Development, op. cit., p. 141.

[112]Steel Imports, op. cit., p. 37.

[113]Foreign Trade and Tariff Proposals, op. cit., Pt. 5, p. 2222.

[114]Organization for Economic Cooperation and Development, op. cit., Border Tax Adjustment, p. 36.

[115]Dosser, p. 230.

[116]European Coal and Steel Community, op. cit., p. 42.

[117]Ibid., p. 141.

[118]Ibid.

[119]Ibid., p. 140.

[120]Ibid., p. 147.

[121]Organization for Economic Cooperation and Development, op. cit., Border Tax Adjustments, p. 36.

[122]Foreign Trade and Tariff Proposals, op. cit., p. 3881.

[123]Organization for Economic Cooperation and Development, op. cit., Border Tax Adjustments, p. 114.

[124]Ibid., p. 114, 141, 149.

[125]Ibid., p. 140.

[126]Ibid., p. 145; Overseas Business Reports, op. cit., 69-30, p. 10.

[127]Foreign Trade and Tariff Proposals, op. cit., p. 3902.

[128]European Coal and Steel Community, op. cit., p. 42.

[129]Ibid., p. 45.

[130]Ibid., p. 40.

[131]Ibid., p. 44.

[132]Organization for Economic Cooperation and Development, op. cit., Border Tax Adjustments, pp. 114, 141, 149, 146.

[133]Ibid., p. 35.

[134]Foreign Trade and Tariff Proposals, op. cit., p. 2913-17.

[135]Letter from Italian Embassy, June 25, 1969.

[136]Steel Imports, op. cit., p. 38.

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[138]Overseas Business Reports, 64-26, op. cit., p. 4.

[139]Foreign Trade and Tariff Proposals, Pt. 8, op. cit., p. 3582.

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[151]Viner, op. cit., p. 133.

[152]Massel, op. cit., p. 63.

[153]GATT, Article VI, Basic Instruments and Selected Documents, Vol. I, (revised), Geneva.

[154]Kelly, op. cit., p. 300.

[155]Balassa, Trade Liberalization among Industrial Countries, op. cit., p. 66.

[156]Kelly, op. cit., p. 300.

[157]See GATT, Antidumping and Countervailing Duties, Geneva: July, 1958.

[158]Overseas Business Reports, 64-31, op. cit., p. 3.

[159]Ibid., 64-26, p. 2.

[160]GATT, op. cit., p. 10.

[161]GATT, op. cit., p. 21.

[162]Hearings before the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, The Future of United States Foreign Trade Policy, 90th Congress, 1st Session, Vol. I, United States Government Printing Office: Washinton, D.C., 1967, p. 15.

[163]GATT, op. cit., pp. 14, 47, 48.

[164]Ibid., p. 50.

[165]World Trade Information Service, 62-50, op. cit., Pt. 2, p. 12.

[166]Kelly, op. cit., p. 297.

[167]GATT, op. cit., p. 53.

[168]Masson and Whitely, Barriers to Trade between Canada and the United States, op. cit., p. 53.

[169]GATT, op. cit., p. 10.

[170]The Future of United States Foreign Trade Policy, op. cit., p. 15.

[171]GATT, op. cit., pp. 5, 6.

[172]Overseas Business Reports, 67-91, op. cit., pp. 5, 6.

[173]International Commerce, April 6, 1968, op. cit., p. 24.

[174]"European Non-Tariff Obstacles Criticized," European Community, op. cit., August, 1965, p. 8.

[175]GATT, op. cit., p. 6.

[176]Overseas Business Reports, 65-11, op. cit., p. 6.

[177]GATT, op. cit., pp. 5, 6.

[178]Overseas Business Reports, 68-83, op. cit., p. 4.

[179]Hearings on Senate Resolution 149, op. cit., p. 342.

[180]Kelly, op. cit., p. 300.

[181]"Europeans Weigh United States Non-Tariff Obstacles to Trade," European Community, July, 1965, op. cit., p. 9.

[182]Kelly, op. cit., p. 297.

[183]GATT, op. cit., p. 10.

[184]European Community, op. cit., July, 1965, p. 9.

[185]Tariff Act of 1930, Section 303, 19 U.S.C..1303..

[186]The Future of United States Foreign Trade Policy, op. cit., p. 15.

[187]GATT, op. cit., p. 117.

[188]Masson and Whitely, op. cit., p. 35.

[189]Ibid.

[190]United States Tariff Commission, "Hot-Rolled Carbon Steel Wire Rods from Belgium" Tariff Commission Publication 93, Washington, D.C., Luxembourg, West Germany, 1963, France 94, 95, 99.

[191]See Figure 4.

APPENDIX TWO
ADMINISTRATIVE PRACTICES

I. Introduction.

Although it is intended to implement other import restrictions, such as tariffs and quotas, customs administration in itself may erect barriers that are more difficult to surmount than the original restrictions. One indication of the importance of this broad category of barriers is provided by the emphasis which the Common Market has placed on achieving complete harmonization of its member's customs procedures.[1] The action of the United States Congress, which was so impressed by the protective effects of certain valuation procedures that in enacting changes it specifically exempted certain goods from new and simpler methods, also reflects the importance of administrative practices.[2] For all their importance, however, the restrictive effects of this type of barrier are more difficult to quantify, except in the cases of deposits, fees, or terms of duty-payment. This chapter describes each country's customs practices in the order they occur in the importation process.

Before he is able to sell his goods, an exporter must enter his advertising and samples for customs scrutiny, but none of the major steel-trading nations restrict steel in this way. Next, he must obtain information on customs

procedures. Most industrial countries give this freely, and only steel importers in the United States have found incomplete information to be an important impediment. The uncertainty of changes in customs regulations and delays in the processing of imports also may surround customs administration. The uncertain changes have been listed as important barriers by United States steel importers, while delays due to customs complexities have been found in both the United States and Japan by steel traders.

II. Import Marking Requirements.

Prior to shipment the exporter must make sure that his goods satisfy customs marking requirements. Marks of origin may have the intent of preventing consumers from being misled by informing them of the origin of their purchases. However, the effect of marking requirements may extend beyond consumer protection and erect import barriers which protect domestic producers. Implicit in mark-of-origin rules is the assumption that, if domestic consumers were apprised of the good's foreign origin, they might show a preference for domestic substitutes. On the supply side, the cost of marking may discourage exports from foreign countries.

With the exception of specific marking rules for a few items, principally foodstuffs and drugs, the countries considered here usually confine their import requirements to prohibiting marks which indicate a false domestic origin. Indeed, the United States is the only major steel trader

which imposes a general marking requirement on imports.[3] Although the Treasury may grant exceptions to the marking rule where the cost is "economically prohibitive", steel is not excepted.[4] The Customs publishes details of decisions which define the type of marking necessary for each good to meet the Tariff Act's general specifications. The Act requires imports to be marked (1) in a conspicuous place, (2) legibly, indelibly, and permanently, and (3) with the English name of the country of origin.[5] Improperly marked goods may not always be remarked and imported. Instead, they may be re-exported, destroyed, or subject to fine.[6]

United States marking requirements restrict imports by creating uncertainty and raising the cost of imports. The chief problem of uncertainty appears to stem from inadequate information from customs on what will be accepted as a proper designation or method of marking. A secondary difficulty is the uncertainty over disposition of improperly marked goods. Although the Treasury can waive marking which entails prohibitive costs, it has not exempted such products as watch bearings and hypodermic needles.[7] The marking of iron and steel products is reported to involve the expensive process of countersinking.[8] United States importers of French structural steel have complained that the expense of marking each section with the word "France" has presented an insurmountable obstacle to this type of import.[9]

III. Documentary Requirements.

Among the major steel-trading countries, those belonging to the Common Market have similar documentary requirements. The same can be said for all the major steel traders, as well, but the degree of similarity is less. All ten countries ask for a number of documents so that differences in restrictiveness depends only upon differences in the number and specification of the papers. In general, bills of lading and/or commercial invoices, declaration forms, and certificates of origin are the only documents required. However, in Belgium and Luxembourg a second declaration must be made; invoices on Canadian imports must be prepared in triplicate and must contain must information specified by customs; French customs may ask for additional documents, such as contracts or correspondence; a complex declaration form and an import control report are unique German restrictions. In general, German customs officers are reported to be lenient with regard to any necessary correction of documetns.[10] Requests for advance rulings on Italian customs classification may be required to appear on special paper which costs about $0.34 a sheet.[11] Although British customs require a variety of declaration forms, they do not have stringent rules regarding the content of other import documents.

The United States was the only major steel-trading country claimed to have documentary requirements as a significant nontariff barrier by world steel traders, and

at that, this barrier was ranked eighth in a field of 12 in terms of restrictiveness.[12] Although there should be little uncertainty over the United States requirements since information and forms are freely available from United States consulates, the requirements are more complex than in most other major steel-trading countries. In contrast to most countries, which require no particular form, United States importers must present a special customs invoice, for each shipment to the United States. For the few items exempted from the special invoice requirement, a commercial invoice is still required for customs purposes.[14] If an invoice cannot be produced, then the importer must fill out a pro forma invoice and post a bond guaranteeing that an invoice will be presented within six months.[15]

The United States eases the burden of its documentary requirements by allowing invoices to be filled out in any language. On the other hand, the United States customs ask for original invoices and other papers to support invoices which cover single shipments of more than one type of merchandise. Moreover, their invoices require a greater amount of information than those of most foreign countries. The list of invoice items includes the port of entry, time and place of sale, name of buyer and seller; name, quality, description, marking, quantity, price, currency of purchase, delivery charges, rebates, subsidies, current home consumption price, value, place of origin, and any other information necessary for valuation or classification

purposes.[16]

Based on requirements concerning the submission time, amount, and content of documents, the following ranking of countries has been made according to the restrictiveness of their documentary regulations: France, Canada, United States, Germany, Japan, Italy, Benelux, United Kingdom. However, a precise appraisal of the restrictiveness of this barrier would require details of the cost of preparing documents for each shipment. Obviously the cost per unit would be small for large shipments, and for large firms there may be economies of scale in retaining a full-time customs lawyer and broker. With regard to small companies, however, it has been reported that many do not participate fully in world trade, at least partly because of the complex and burdensome requirements for documentation.[17] The present study's survey of United States steel producers reaffirmed this observation when replies from small companies state that they did not export simply because of the complexities involved.

IV. Customs Classification.

Customs rules relating to valuation and classification can be regarded as nontariff barriers when they become trade restrictions in themselves by requiring lengthy and costly litigation or creating uncertainty. Because these restrictions are directly related to tariffs, they are sometimes referred to as paratariff barriers.[18] This section reviews the major steel-trading countries' customs

classification procedures, under which an imported product is assigned a particular rate of duty according to a tariff schedule.

All Common Market members, as well as the United Kingdom and Japan, have adopted the Brussels Tariff Nomenclature, though this does not necessarily mean that they have the same tariff schedule classifications, for they often use different subdivisions under the same general headings. Nevertheless, these countries are members of the Customs Cooperation Council, which was established to maintain uniformity in the application of the Brussels Tariff Nomenclature. Thus, uncertainty and other problems concerning import classification have been greatly reduced among these countries.[19]

The Canadian classification system differs markedly from the Brussels Tariff Nomenclature.[20] The system is comprehensive in that every import must be classified somewhere in the schedule; if it is listed under more than one category, the one with the highest rate of duty shall apply.[21] As a result of imports entering at more than one rate of duty, the Canadian customs reserves the right to make additional charges or refunds without any time limit. The year 1951, for instance, saw 120,405 such adjustments, of which there were five additional duties for each refund.[22]

Another uncertain distinction made in Canadian customs classification is between imports of a class or kind made in Canada and imports with no domestically-produced

substitutes.[23] The ambiguity of the words "class or kind", which may refer to either a narrow or wide range of products, leaves a good deal of discretion in the hands of customs officials.[24] Moreover, a product is "made in Canada" only if 10 percent of domestic consumption consists of Canadian goods, a situation that could conceivably be subject to change from year to year.[25] Only three weeks notice of change in this classification is necessary.[26]

Further complexities in Canadian import classifications arise over the final use of the import, which may be cause for higher or lower duties. Although this distinction has contributed to much uncertainty and delay, primary iron and steel mill products at least are now benefitting from a 1958 overhaul of their tariff section which eliminated many end use items.[27]

The American Tariff Act of 1930 contained 730 main classifications of imports, which were broken down further into numerous subclassifications. In contrast to Canada, the United States has fewer classification disputes (50,000 pending in 1953) than protests over valuation. The entrance of imports is not forestalled during classification disputes as it is in disagreements about valuation.[28]

One of the main problems of customs classification in the United States is created by the rule of similitude, which attaches the tariff rate of similar items to those not specifically enumerated in the tariff schedule. As in Canada, if the article could be included in more than one

classification, it is placed in the one with the highest duty.[29] Thus, new products cannot be imported duty-free even when they more closely resemble goods on the free list than those on the duty list. In addition, customs officials are always constrained by the law to find the most restricted product which resembles the new import. Another problem stems from classifying imports according to their chief component by value; the result may be to charge different duties for the same items, ashtrays for instance, because one is made of metal and the other is ceramic.[30] However, the largest share of these classification restrictions appears to fall on finished manufacturers, and not on primary goods like steel.[31]

The "Tariff Schedules of the United States", a major revision of the classification system, became effective in September, 1963. The consolidation and rearrangement of the old schedule has eliminated many problems of complexity. In addition, the inclusion of many new products has lessened the importance of problems arising from application of the rule of similitude and the chief-component-by-value standard.[32] Despite this simplification, other countries still find reason to complain about the "very complicated headings" in the tariff schedule and "arbitrary changes of classification."[33] A more objective appraisal of the effect of the many customs simplification attempts of the United States can be made by noting that the number of tariff classification cases in court over the years has not declined,

but increased. Including the number of those decided in each year also indicates the increase in delays involved in such cases, since both the relative and absolute number of cases decided each year has declined. The number of cases by year is presented in Table A7.

Table A7
United States Customs Court
Classification Protest Cases

Fiscal Year	Pending During Year	Decided During Year
1958	161353	38478
1959	156704	25094
1960	164007	59336
1961	141883	47098
1962	117711	35479
1963	104330	17111
1964	113674	27784
1965	109645	19497
1966	NA	NA
1967	204347	27908
1968	261921	33528

Source: Director of the Administrative Office of the United States Courts, Annual Report, 1959, 1961, 1962, 1963, 1964, 1965, 1968, United States Government Printing Office: Washington, D.C.

The customs bureaus of all ten major steel-trading countries give advance rulings on import classifications upon receipt of a request and adequate information, but the United Kingdom and Germany will not give definite rulings until the time of actual importation. Italy requires detailed requests written in Italian, while both

France and Italy require special application forms for advisory rulings.

It should be noted that Canadian tariff quotations cannot be relied upon since they can change without notice. In contrast, notice of the United States Custom Bureau's intent to alter a classification is published in the Federal Register 120 days prior to the actual change.

In general, appeals of classification rulings can be made first to the customs bureau and eventually to the courts, but in France and Japan classification disputes cannot be appealed to the Judiciary. In Canada, where protests over customs classification are the most common form of import litigation, appeals may not be undertaken on an adverse indication of classification, but only on a classification as applied to an actual import. As a consequence, the higher duty of an erroneous advance ruling may prevent not only importation, but the possibility of correcting the mistake as well.[34] During litigation duties must be paid or the goods cannot be imported; some countries (Benelux members and Japan in particular) will refund excess duties on goods imported before a successful appeal.

V. Valuation.

Among the major steel-trading countries considered in this study, those who are members of the European Economic Community, and the United Kingdom are signatories to the "Convention on the Valuation of Goods for Customs Purposes,"

most commonly known as the Brussels Definition.[35] Although Japan is not a signatory of the valuation convention, it also has adopted the Brussels Definition in its valuation practices.[36] According to the Brussels definition of value, the "normal price" is used as the basis to which advalorem duties are applied. The "normal price" is that which imports "would fetch at the time when the duty becomes payable on a sale in the open market between buyer and seller independent of each other."[37] If a transaction meets these requirements, then the "normal price" corresponds to the c.i.f. invoice price. In practice, signatory countries use the invoice price unless it is lower than the "normal price."[38] Duties and taxes in the importing country are excluded form "normal price" but all charges for delivery to the place of clearance are included.[39]

The United States steel industry claims that United States producers are at a disadvantage because "the United States ad valorem tariffs are computed on the declared value of the product f.o.b. port of departure, while the practice elsewhere in the world is to compute them on landed value."[40] The United States steel industry estimates the difference in value to be 15 percent on steel products, and maintains that "it is not clear whether GATT negotiations in determining the value of tariff concessions took into consideration the United States method of valuation."[41] Kelly finds that import duties in c.i.f. countries are 10

percent higher on the average than the receipts from the same rates on identical products in countries using an f.o.b. system of valuation.[42] However he also finds that "such differences in valuation systems do not constitute nontariff barriers" since it is possible to compare duties by expressing them on a common base.[43] Moreover, according to William M. Roth, the President's Special Advisor on Trade Negotiations, the differences between c.i.f. and f.o.b. valuation have been taken into consideration in tariff negotiations.[44]

The Brussels Definition may impede trade when the condition of independence between buyer and seller does not hold. If the importer is the exclusive agent, sole distributor, branch, or subsidiary of a foreign firm, the invoice price may be lower than the "normal price" by the amount of discounts for advertising and other selling expenses. To offset this difference, European customs authorities impose a one to ten percent increase in the invoice price. The amount of increase is sometimes negotiated between customs officials and importers, and it is particularly arbitrary in cases where the related firm is the sole buyer, so that the customs appraiser has no other transactions to guide his determination of normal price.[45]

Canada uses a valuation method similar to the Brussels Definition for about three-quarters of its imports, but the rest appear to permit arbitrary valuation. The Canadian "similar goods" rule, for instance, states that the value

of some imports for duty purposes is the cost of production of the import plus some gross profit mark up. A discretionary valuation rule is also used in Canada, whereby the Minister of National Revenue can prescribe the manner in which value is determined for imports such as those from state monopolies or those intended for further processing.[46] In addition, a valuation rule similar to the United States escape clause permits the Minister to increase the dutiable value when Canadian industry is being injured materially. Finally, another rule permits the Minister to set dutiable value at the average of previous periods, if he finds that import prices are below normal.[47] With five methods of valuation, four of which permit wide ministerial discretion in valuing imports, it is not surprising that Canada has been the object of foreign complaints concerning arbitrary valuation practices.[48]

United States valuation practices also differ from the procedure specified by the Brussel Definition. Four customs valuation methods are expressly prescribed in the American Customs Simplification Act of 1956, but there can be no administrative discretion exercised in valuation, as in Canada. The first duty base is "export value," a term deined much like the Brussel Definition's normal price, except that the "export value" is f.o.b.[49] According to a 1961 study, 87 percent of all United States import invoices were appraised on the basis of "export value."[50] If the "export value" cannot be determined satisfactorily, the dutiable

amount is termed "United States value," the wholesale price of the imported product in the United States minus commissions, profits, customs duty, transportation cost, insurance and other delivery expenses. "United States value" is usually higher than "export value" probably would have been, because the law sets the maximum allowance for profits at eight percent and for commissions at only six percent, "in each case well below average."[51] A third method values imports according to the "constructed value" which is the estimated cost of production in the exporting country.[52] These three methods of valuation have been subject to European complaints about their complexity, and uncertainty, but foreign criticism has stopped short of calling United States procedures arbitrary.[53]

The fourth United States valuation rule, American-selling price valuation, has been roundly criticized by Europeans, because the rule is inconsistent with the GATT provisions that customs value should not be based on the value of similar goods produced in the importing country.[54] American-selling price valuation has not been applied to steel, however, and in fact the duty base for most United States steel imports is export value.

The United States Congress exempted 1,105 tariff items whose dutiable value would have been reduced by five percent under the new valuation provision of the Customs Simplification Act of 1956,[55] But no iron and steel mill products were among these "final-list" items.[56]

Apart from complex and arbitrary valuation methods, there may also be considerable delay in the customs appraisal process. Unfortunately, little information is available on delays or the reasons for them, except in the United States. As early as 1938 United States importers complained that "invoices have been withheld for as long a period as three years, and it is not uncommon for such returns to be delayed for six or eight months or a year."[57] In 1953, over 16 percent of all invoices on hand had been in the United States Customs appraiser's offices over two years, and almost one-fourth were there from one to two years.[58] Between 1952 and 1958, the number of invoices on hand over 90 days nearly doubled.[59] Valuation protests involve further delay as the small proportion of cases decided each year indicates. Table A8 shows that only five percent of the pending cases were decided in 1968. Moreover, 1968 appeal decisions took an average of 15 months to be reached, as shown in Table A9 below. These, and other valuation problems can affect any import, including iron and steel mill products, but their restrictive effect is impossible to quantify.

VI. Customs Fees and Deposits.

Among the many important restrictive practices associated with customs administration, only handling and statistical charges, and customs deposits are susceptible to quantitative analysis. However, the fact that this category of barriers is overt, and not disguised in the

Table A8
United States Customs Court
Appeals for Reappraisement of Customs Valuation

Fiscal Year	Pending During Year	Decided During Year
1958	102696	16028
1959	109044	20663
1960	108128	32276
1961	102716	12858
1962	107724	13855
1963	107268	8144
1964	122466	10166
1965	136651	8921
1966	NA	NA
1967	174212	10619
1968	185758	9867

Source: Same as Table A7.

Table A9
United States Court of Customs Appeals

	Average Number of Months between Filing and Decision
1958	8.0
1959	9.8
1960	10.8
1961	10.1
1962	9.7
1963	9.0
1964	11.4
1965	13.0
1966	16.6
1967	14.0
1968	15.2

Source: Same as Table A7.

respectable cloak worn by other administrative practices, may have contributed to its infrequent use.

France subjects imports to a customs stamp tax of two percent of all customs charges except the value-added tax,[60] which is the equivalent of 0.2 percent of the c.i.f. import price.

In addition, an administrative fee of 0.2 percent of all border charges is levied by French customs,[61] which equals .06 percent of the import price.

Italy presents a slightly smaller customs restriction in the form of an administrative fee and a statistical tax. The administrative charge is 0.5 percent of the c.i.f. import price.[62] The statistical tax has the specific rate of Lire 10 per quintal, equivalent to 0.1 percent of the current Italian steel import price.[63]

In Japan an import license applicant usually must deposit from one to 35 percent of the c.i.f. import value with a foreign exchange bank until the goods clear customs,[64] The customs deposit rate is one percent for pig iron, steel ingot, and semi-finished steel products and five percent on all other steel mill products.[65] Japan's apparent home comsumption of ingots, pig iron, and semi-finished steel steel products was about 50 percent of total 1966 consumption with shipments of finished iron and steel mill products making up the balance.[66] Weighting the import deposits by the share in domestic consumption, the average deposit requirement is three percent of the c.i.f. import price. Six

months appears to be the average length of time that the import deposit is held by customs. Taking the current Japanese annual interest rate of six percent as the cost of capital tied up in import deposits,[67] the cost of providing the deposit as a percentage of the c.i.f. import price is found to be .09 percent (3% deposit X 6% interest rate X ½ year). In comparison, the cost of the 35 percent maximum deposit in Japanese imports as a percentage of price is 1.05 percent.

The United Kingdom also has an import deposit plan that requires most British importers to keep much of their capital tied up.[68] The scheme is applicable to all manufactured goods, including steel, but excluding food stuffs, fuel, raw materials, and any goods from developing countries. The deposit must be paid before imported goods are cleared through customs, and is not refunded for six months. The amount of the import deposit is equal to 50 percent of the c.i.f. import value.[69] At the current British interest rate of 7.5 percent, the cost of the deposit as a percentage of price is estimated to be 1.9 percent.[70] United States steel exporters found this barrier to be the fourth most restrictive in Britain.[71]

VII. Other Customs Provisions.

The only administrative practices, besides penalties, that have not been covered so far mainly relate to the movement of imports through customs. Information concerning the clearance, handling, and storage of goods by customs in

all countries can be found in a variety of United States Government publications.[72] Since the procedures are generally very similar, separate consideration of each country's customs procedures will not be made. Instead, the physical processing of imports will be described in sequence, with exceptional practices being noted at each step.[73]

Upon arrival of imports in any of the countries considered here, they must be formally entered with the customs within the time limits listed in Table A10.

Table A10
Days Allowed for Customs Entry after Arrival of Imports

Belgium	10
France	1
West Germany	7
Japan	15
Luxembourg	10
United States	5

Sources: See footnote 122.

If imports are not entered with the customs, they are allowed to remain in the custom warehouse for one year, Italy being an exception with a three month limit. All applicable storage and handling fees, as well as risk of loss, are assigned to the importer. Imports which are not claimed are subject to the same treatment as abandoned goods.

Abandonment of imports may occur for a variety of reasons, among them spoilage, damage, or the importer changing his mind. They will be held for a time as discussed above, and then be sold, destroyed, or re-exported.

All expenses, taxes, and duties must be paid by the importer in the case of destruction or the exporter in case of re-exportation. Proceeds from the sale of abandoned goods are first used to cover import liabilities, and then at least in the United States, Canada, Belgium, Luxembourg, and Italy, the proceeds go to the owner of the goods. France will not take over abandoned goods, if the expense of doing so is high. Japan and the United Kingdom apparently make no attempt to refund proceeds net of expenses to the owner of the goods.

Entering goods with customs usually entails depositing them in a customs warehouse until duties are assessed, except in Japan, and the Netherlands. After entry, importers who do not wish to use the merchandise immediately may postpone their payment of duty, though in the United States and Canada the estimated duty may have to be deposited. Until the duty is paid, imports usually must be kept under bond or some other type of security in customs-approved public or private warehouses, where repacking, marking, manufacturing, or other manipulation of imports is usually permitted, except in France, Italy, and the United Kingdom.

Most of the major steel-trading countries permit imports to remain in storage warehouses about three years, though Canada only permits them to stay two years, while Germany allows five. The varying terms and conditions applying to storage have been recognized as important nontariff trade barriers.[74] Some countries, like the Netherlands, provide

customs services free of charge; others, such as the United States, levy fees for any extra customs supervision. Some countries charge higher rent on warehouses, permit internal taxation of stored goods which have not been officially imported,[75] or charge the highest duty when tariffs change during the storage period.[76]

When duties are levied, whether at the time of arrival or after some storage period, the method of payment may also vary from country to country. Prepayment of duty by the foreign exporter is either prohibited or raises the valuation of the imports. Most countries require all customs charges to be paid in domestic currency. Perhaps most important to importers are the deferred payment provision of Europe. In Italy, importers must pay duties when they take possession of goods, but the Benelux countries allow importers to postpone payment for a week. Some EEC members give imports three months' credit free of interest, while others charge interest, but allow installment payments on duty charges.[77]

Besides administrative fees and other customs charges involving the treatment of imports, customs may also impose certain penalties for violation of its regulations. The major steel traders sanction forced sales, fines, consfication of goods, the means of transport, and imprisonment. The penalties vary from country to country, but do not appear to have been imposed arbitrarily. Moreover, there is no evidence to suggest that steel has been restricted by these penalties.

VIII. Footnotes.

[1]See European Community, November, 1968, p. 18; and June, 1968, p. 4.

[2]Masson and Whitely, Barriers to Trade between Canada and the United States, op. cit., p. 29.

[3]Tariff Act of 1930, Section 304 as amended, 19 USCA, par. 1304 (1960).

[4]United States Treasury Department, Bureau of Customs, Exporting to the United States, United States Government Printing Office: Washington, D.C., 1965, pp. 29-33.

[5]Bureau of Customs, Digest of Decisions for the Marking of Imports, United States Government Printing Office: Washington, D.C., 1968.

[6]Exporting to the United States, op. cit., p. 33.

[7]United States Treasury Department, Bureau of Customs, Marking of Country of Origin on United States Imports, United States Government Printing Office: Washington, D.C., 1967.

[8]Masson and Whitely, op. cit., p. 33.

[9]Commission on Foreign Economic Policy, op. cit., p. 355.

[10]Overseas Business Reports, 68-30, op. cit., p. 6.

[11]Ibid., 68-40, p. 3.

[12]See Figure 4.

[13]United States Treasury Department, Bureau of Customs, Exporting to the United States, op. cit., p. 18.

[14]United States Treasury Department, Bureau of Customs, United States Customs Regulations, Section 8.15.

[15]Exporting to the United States, op. cit., p. 8

[16]Ibid., pp. 19-20.

[17]Foreign Trade and Tariff Proposals, op. cit., Pt. 7, p. 3110.

[18]Kelly, op. cit., p. 284.

[19]Ibid., p. 285.

[20]Ibid., p. 285.

[21]Masson and Whitely, op. cit., p. 48

[22]Ibid., p. 56.

[23]Kelly, op. cit., p. 285.

[24]Masson and English, Invisible Trade between Canada and the United States, Canadian-American Committee of the National Planning Association, (United States) and Private Planning Association of Canada, p. 19.

[25]Ibid., p. 20.

[26]Masson and Whitely, op. cit., p. 49.

[27]Ibid., p. 50.

[28]Commission on Foreign Economic Policy, Staff Papers, United States Government Printing Office: Washington, D.C., 1954, p. 331.

[29]Ibid., p. 333.

[30]Ibid., p. 335.

[31]Ibid., pp. 335, 343-358.

[32]United States Tariff Commission, Tariff Classification Study, United States Government Printing Office: Washington, D.C., 1960.

[33]European Community, op. cit., July, 1965, p. 8.

[34]Masson and English, op. cit., p. 18.

[35]Kelly, op. cit., p. 285.

[36]Ibid.

[37]Customs Cooperation Council, The Brussels Definition of Value for Customs Purposes, Brussels, April, 1964, p. 41.

[38]Overseas Business Reports, 67-91, op. cit., p. 2.

[39]International Chamber of Commerce, Customs Valuation of Imported Goods, February, 1959.

[40]American Iron and Steel Institute, The Steel Import Problem, p. 32.

[41]Ibid.

[42]Kelly, op. cit., p. 286.

[43]Ibid.

[44]The Future of the United States Foreign Trade Policy, op. cit.

[45]International Chamber of Commerce, The Brussels Definition of Value: The Case of the Sole Buyer, February, 1963, p. 5.

[46]Masson and Whitely, op. cit., p. 53.

[47]Kelly, op. cit., p. 294.

[48]Foreign Trade and Tariff Proposals, Pt. 1, op. cit., p. 229; Pt. 9, p. 3923.

[49]American Importers Association, United States Customs Valuation Procedure, New York, 1958, p. 5.

[50]United States Treasury Department, Bureau of Customs, An Evaluation of Mission: Organization, Management, December, 1964, Pt. VI, p. 24.

[51]Towle, op. cit., p. 537.

[52]Kelly, op. cit., p. 288.

[53]European Community, op. cit., July, 1965, p. 8.

[54]GATT, Article VII.

[55]Kelly, op. cit., p. 288.

[56]United States Treasury Department, Exporting to the United States, op. cit., March, 1965, pp. 65-77.

[57]Bidwell, op. cit., p. 34.

[58]Commission on Foreign Economic Policy, op. cit., p. 338.

[59]Masson and Whitely, op. cit., p. 28.

[60]Overseas Business Reports, 67-91, op. cit., p. 2.

[61]Steel Imports, op. cit., p. 316.

[62]Overseas Business Reports, 68-40, op. cit., p. 6.

[63]Organization for Economic Cooperation and Development, The Iron and Steel Industry, op. cit., Table 33 and 34.

[64]United States Department of Commerce, "Japans Licensing and Exchange Controls," Overseas Business Reports, 62-2, United States Government Printing Office: Washington, D.C., November, 1962, p. 1.

[65]Letter dated July 14, 1969, United States Embassy, Tokyo, Japan, p. 2.

[66]Crude steel consumption, Organization for Economic Cooperation and Development, Table 27 and Domestic Shipments of Finished Steel; Japan Iron and Steel Federation, JISF Statistical Yearbook for 1966, Table 44 A.

[67]International Monetary Fund, International Financial Statistics, May, 1969, p. 185.

[68]The Wall Street Journal, March 3, 1969, p. 1.

[69]International Monetary Fund, International Financial News Survey, December.6, 1968, p. 405.

[70]Based on Bank Rate, International Monetary Fund, International Financial Statistics, May 1969, p. 319.

[71]See Figure 4.

[72]For example, in the case of Japan see: United States Department of Commerce, "Japan's Licensing and Exchange Controls," Overseas Business Reports, 62-2 op. cit.; United States Department of Commerce, "Japan Lifts Import Restrictions on 39 Additional Commodities," International Commerce, United States Government Printing Office: Washington, D.C., October 26, 1964, p. 14; United States Department of Commerce, "Preparing Shipments to Japan," Operation Reports, United States Government Printing Office: Washington, D.C., 1960, Pt. 2, No. 60-9; United States Department of Commerce, "Foreign Trade Regulations of Japan," Overseas Business Reports, 65-11, op. cit.

[73]Sources used in this section are Ibid.; United States Department of Commerce, "Foreign Trade Regulations of Italy," Overseas Business Reports, 68-40, "Foreign Trade Regulations of France," Overseas Business Reports, 67-91, "Foreign Trade Regulations of Netherlands," Overseas Business Reports, 64-37; ""Foreign Trade Regulations of the Republic of Germany," Overseas Business Reports, 68-30, 1968; "Foreign Trade Regulations of the United Kingdom," Overseas Business Reports, 68-83; Foreign Trade Regulation of Belgium-Luxembourg," Overseas Business Reports, 64-26; "Foreign Trade Regulation of Canada," World Trade Information Service, Pt. 2, 62-50, 1962; Exporting to the United States, op. cit., 1965; and United States Treasury Department, Bureau of Customs, United States Import Requirements, United States Government Printing Office: Washington, D.C., 1965.

[74]See European Community, op. cit., July, 1965, p. 8.

[75]In the United States, imports are supposed to be exempt from property tax until sold domestically. See L. R. Baker, "When Is an Importer Not an Importer," West Coast Metal Importers Association, Newsletter, November, 1968, p. 3. Nevertheless, before being stopped by the Michigan Supreme Court, the City of Detroit was assessing one million dollars a year on imported steel in warehouses. See West Coast Metal Importers Association, Newsletter, January, 1969, p. 2.

[76]European Community, op. cit., June, 1968, p. 7.

[77]Ibid.

APPENDIX THREE
INTERNAL POLICIES AND REGULATIONS

I. Introduction.

The domestic policies of any government often affect its international trade, whether they are intended to or not. Nevertheless, it is useful to classify these policies by intent for purposes of exposition, despite the arbitrariness of such a division. This section also divides internal policies according to their purpose. Economic policies are considered first, including domestic subsidization, indirect tax policy, price controls, and patent laws. Other internal policies considered are technical specifications and national security restrictions. Steel has avoided such restrictions as special use taxes, credit controls, advertising restrictions, trademark and copyright laws, and health and safety standards. Internal direct tax policies, moreover, do not appear to restrict any imports, including steel.

II. Internal Economic Policies.

A. Domestic Subsidies.

1. Restrictive Effect on Imports.

A domestic subsidy which increases domestic supply, will also cause a downward shift in the corresponding import demand function. The reduction in import demand facing foreign suppliers restricts imports just as if it had been

caused by a tariff.[1] However, the domestic subsidy only decreases the demand for foreign goods to the extent that it is passed on to domestic buyers. Whenever domestic demand and supply elasticities are such that the subsidy is not completely shifted forward, the restrictive effect of the subsidy will be less than a tariff of equal amount.

Whenever quantifiable subsidies granted on the basis of output are found below, they are expressed at an advalorem rate. The conversion of these subsidization rates to non-tariff barrier rates will be discussed in Chapter Two. In the cases of lump-sum subsidies or reductions in fixed costs, however, it is assumed that they are not passed on in the form of lower prices. While this study makes note of such subsidies, no attempt is made to express them at an ad-valorem rate, since they do not affect short-run domestic supply and do not create nontariff barriers.

2. Direct Domestic Subsidies..

Only two countries among the major steel traders appear to grant substantial direct cash subsidies to their domestic steel industries. Belgium rebates up to 30 percent of the cost of any industrial buildings and 10 percent of the cost of any industrial equipment located in specified development regions.[2]

In the United Kingdom, the treasury has covered the 1968 British Steel Corporation deficit of $29 million.[3] This subsidy appears to be necessary because the nationalized British industry must give "loyalty rebates" to domestic

buyers who purchase no foreign steel over a six-month period.[4] These rebates may run as high as $11 per ton.[5] Taking this upper limit as a percentage of the 1968 domestic price on a high-priced product like cold-rolled sheets ($136)[6] the rebate is estimated to be about eight percent. Since this is the amount actually passed forward to steel buyers, the import must have a least an eight percent lower price in order to remain competitive after the rebate. Therefore, eight percent can be looked upon as the ad valorem rate of this nontariff barrier.

3. Depreciation.

Depreciation is an accounting procedure which distributes the cost of tangible capital assets over their estimated useful life.[7] As an expense, depreciation reduces profits and thus taxes in each year. Straight-line depreciation spreads the total cost of an asset equally over all periods of its life. Accelerated depreciation is a method by which larger charges are made during the early years of the life of a fixed asset than during the later years of its life.[8] Although there is doubt that accelerated depreciation reflects the actual rate at which an asset loses its productive value, many countries sanction this accounting method for income tax purposes. Moreover, the United States steel industry claims that government subsidization of foreign steel industries by this method has placed the Americans at a competitive disadvantage.[9]

Accelerated depreciation may involve a certain amount of subsidization. For new or expanding businesses in

particular, and for all firms to a certain extent, deferring income taxes is attractive, since it may permit an earlier retirement of debt created to finance the purchase of the assets being depreciated, or may permit the use of such cash for additional equipment.[10] The amount of subsidization involved in accelerated depreciation is equal to the interest saved through the use of funds destined to pay future taxes. While this calculation is conceptually neat, it is empirically unmanageable, because original value and age of capital assets are unknown. Nevertheless, a brief survey of the differences in depreciation procedures in the major steel trading countries indicates that the United States does have relatively low depreciation rates, not only for industrial buildings and equipment in general, but for steel plant and machinery in particular. This information, summarized in Table A11, was obtained from the Office of Financial Analysis and Director of International Tax affairs of the United States Treasury. However, even the maximum and minimum rates shown must be regarded as rough averages from which a considerable amount of dispersion might be expected, since many countries do not provide statutory asset lives or rates.[11]

Another subsidy arises from the practice of permitting more than the difference between the original value and the salvage value of an asset to be depreciated. This is standard practice among Common Market countries, with the exception of the Netherlands. Moreover, in Belgium and France

Table A11
First-Year Depreciation Allowances*

	Industrial Equipment			Industrial Buildings		
	Average Steel	Maximum[1]	Mimimum[2]	Maximum[1]	Minimum[2]	Average Steel
Belgium	NA	20.0	10.0	6.0	3.0	NA
Canada	45.0	100.0	6.0	15.0	5.0	15.0
France	NA	33.0	5.0	12.5	5.0	NA
West Germany	20.0	20.0	10.0	3.5	1.5	3.5
Italy	35.0	49.0	3.0	23.3	5.0	23.3
Japan	33.5	33.3	2.5	20.0	2.0	20.0
Luxembourg	NA	16.0	2.0	3.0	2.0	NA
Netherlands	NA	10.0	7.0	6.0	2.0	NA
United Kingdom	19.0	19.0	2.5	24.0	4.0	24.0
United States	20.0[3]	20.0	10.0	4.4	2.2	4.3

[1]Under accelerated
[2]Under straight-line depreciation
[3]Maximum

Sources: Steel Prices, op. cit., pp. 434-473; Steel Imports, op. cit., pp.43, 44; United States Internal Revenue Service, Internal Revenue Code, Section 179; Revenue Procedures, 62-21, 1962-2 CB 418.

*As a percentage of original asset value.

rates of depreciation are set by the tax authorities for each company individually, a practice which leaves the door open to subsidizing with more favorable rates.

According to economic theory, the effect of a change in fixed costs does not influence the marginal cost schedule which is the short-run supply curve of a competitive firm. Since the saving from accelerated depreciation is on the cost of a fixed asset, in the short-run at least, such a subsidy may not be even partially passed on to consumers. Therefore, depreciation subsidies may not erect any nontariff barriers to imports.

4. Investment Incentives.

Another domestic subsidy comes in the form of tax exemptions to firms which expand or modernize. These incentives are very often included in them. Table A12 summarizes the various rates of this type of subsidization in the major steel-trading countries. Once again, the United States appears to rely relatively less on this type of subsidization, though Canada and Germany do not use it at all.

5. Low-Cost Loans.

A common method of domestic subsidization takes the form of low-cost government loans or preferential interest rates on bank borrowing. While it has been reported that "many foreign steel industries have received government loans at significantly reduced interest rates,"[12] specific evidence has been obtained for only three of the major steel

Table A12
Investment Incentives

	Plant	Equipment
Belgium	5-year real estate tax exemption	10%/yr. deduction for 3 yrs.
Canada	None	None
France	Increases in depreciation	Increases in depreciation
West Germany	None	None
Italy	10%/yr. for four years	None
Japan	10% tax credit and write offs of	1/3 to 1/2 in excess of depr.
Luxembourg	10-30% write-offs	10-30% write-offs
Netherlands	5%/yr. for 2 years	5%/yr. for 2 years
United Kingdom	None	25-45%
United States	7% tax credit	7% tax credit

Sources: Steel Prices, Unit Costs, Profits and Foreign Competition, op. cit., pp. 45, 193, 435, 462, 463, 471, 472.
Steel Imports, op. cit., pp. 45, 46, 47.

trading countries of the world.

The French Government has made two recent loans to the domestic steel industry, totalling 3.3 billion francs; one requires no payment or interest charges for five years, and both loans have interest payments at half the current market rate. In Germany, government loans have prevented serious financial deterioration in the domestic steel industry.[13]

Little is known about government financial aid to the Japanese steel industry, but the Japanese Ministry of International Trade and Industry does direct the allocation of capital to specific industries.[14] The American steel industry claims that Japanese Government control over financial institutions affects the credit availability and terms granted the domestic steel industry.[15] This claim is substantiated by a Congressional study which found that "interest-free government loans have been extended in some countries such as Japan."[16] On the other hand, American steel importers state that Japan loans its steel industry less than one percent of its new capital requirements, and that interest rates are at the regular bank rate.[17]

Ironically, the United States, itself, has been a subsidizer of foreign steel industries to the extent of $2,165.62 million in low-cost loans and grants. Approximately one-fifth of this subsidization went to the major steel-trading countries.[18]

6. "Over-Priced" Government Purchases.

Apart from the preferential margins given domestic

products purchased by governments,[19] special contracts with domestic suppliers may also contain an element of subsidization. Agreements between European public utilities and domestic suppliers commit governments to long-term purchasing at prices which can be changed at the option of the seller.[20] Such discretion permits clandestine subsidization, but little is known about the extent of such dealings, or whether they include iron and steel manufacturers.

Another example of government contracts permitting subsidization comes from France, where 56 "program contracts" have been engotiated between the government and steel industry, as well as some other manufacturers. "Program contracts" in France allow an industry to raise its prices in return for specific undertakings on productivity, salaries, investment programs, and exports.[21] In addition, France has aided its steel industry in other unspecified ways.[22]

7. Internal Tax Rebates.

Although accelerated depreciation and investment incentives also effect a decrease in taxes, the only general domestic rebate of an internal tax is found in the United Kingdom.

In 1966, the British Government established a selective employment tax aimed at subsidizing the cost of labor in the manufacturing sector. By law, steel producers are refunded the full amount of the tax paid by them plus a rebate of 30 percent of their total tax paid.[23] The tax rate is

$3.50 per week for adult male workers.[24] Current employment in the British steel industry is 317,000.[25] The total tax for the British steel industry is $57,694,000,[26] but this is refunded in full. The rebate of 30 percent equals $17,308,200. Since wage payments represent variable costs, part of the rebate may be passed on to buyers of British steel. As a percentage of total revenue the rebate is 0.6 percent.[27] If this figure is taken as the ad valorem reduction in steel costs, then the rate of subsidization is equal to 0.6 percent of British steel prices.

8. Input subsidies.

In effect, low-cost loans subsidize the input of capital, and employment tax rebates subsidize the factor of production called labor. But, neither of those inputs receives the direct subsidization accorded to coal in the major steel-trading countries. To the extent that they are passed on, coal subsidies will lower the costs for domestic coal consumers. In turn, the lower cost could be shifted forward to the customers of coal users, resulting in a lower import demand for products similar to the ocal users' output. The downward shift in import demand, as a percent of the c.i.f. import price of the final output, would constitute the ad-valorem rate of the nontariff barrier created by such a subsidy. The subsidies granted by each of the major steel-trading countries are reviewed below.

In the EEC, subsidies ranging from $.80 per ton in the Netherlands to $6.20 per ton in Belgium were granted in

1965.[28] A new subsidization scheme for coal in the ECSC calls for a set rate of $1.70 per ton or a varied rate which is to average the same amount, but which can climb to a maximum of $2.20 per ton. The entire amount of the subsidy must be passed on to steel makers, since the new prices are required to equal January 1, 1967 list prices less the subsidy.[29] A bounty of 4.95 Canadian dollars per ton is paid to producers of coke for Canadian iron and steel manufacturers.[30]

The United Kingdom's National Coal Board sets British prices according to world prices, and has succeeded in raising British exports of coal to six million metric tons.[31] Such actions coupled with the Board's failure to close inefficient mines have required large, direct government subsidization which amounted to $24 million in fiscal 1969.[32]

The rate of subsidization for coal in each of the major steel trading countries are summarized in the first column of Table A13. The input subsidy per ton of steel output is also derived in Table A13 by multiplying the per unit coal subsidy by a steel-coal ratio of 1.41.[33] The rate of subsidization as a percent of c.i.f. import price is shown in the third column. It is converted to an advalorem nontariff barrier rate in Chapter Four.

B. Indirect Tax Policy.

1. Introduction.

As stated in Appendix 2 on foreign economic policies, the rationale of border tax adjustment is to equalize the internal taxes on imports and domestically produced goods.

Table A13
Nontariff Barrier Created by Coking Coal Subsidies

	Coal Subsidy Per Ton of Coal	Coal Subsidy Per Ton of Steel	Advalorem Rate of Subsidization
Belgium	$1.70	$2.57	3.0%
Canada	4.95	7.47	7.6
France	1.70	2.57	2.2
West Germany	1.70	2.57	2.8
Italy	1.70	2.57	1.8
Japan	0.00	0.00	0.0
Luxembourg	1.70	2.57	3.0
Netherlands	1.70	2.57	3.0
United Kingdom	NA	NA	NA
United States	0.00	0.00	0.0

Source by column:

(1) See text.
(2) Column 1 multiplied by the pounds of steel per pound of coal: 1.51.
(3) Column 2 as a percent of c.i.f. import prices obtained from Statistical Office of the United Nations, Monthly Bulletin of Statistics, December, 1968, United Nations: New York, pp. 192, 163.

The effect of rebates on exports has already been discussed. Following the same line of reasoning used to estimate the extent of subsidization in export rebates, this section considers only the amount by which border taxes exceed domestic taxes on the sale of the same product to be a quasi-tariff on imports.

Brief descriptions of internal, indirect taxation in each of the major steel-trading countries also appear in the discussion of tax rebates. Table A14 summarizes the range of internal taxes and border tax on iron and steel mill products. When the border tax exceeds the internal tax rate, the difference is considered to be the advalorem rate of

Table A14
Border Taxes on Imports*

	Internal Indirect Tax Range	Border Tax Range	Internal Indirect Steel Tax	Border Tax on Steel	Excess of Border over Internal Tax on Steel
Belgium	1-16	11.35-16.85[a]	8.35	14.93	6.58
Canada	0-12	1-12	0 or 12	12.00	0-12
France	6-20	6-20	20.00	20.00	0.00
Germany	5.5-11	7-9	11.00	7.00	0.00
Italy	.6-30	7.2-37.8	4.00	8.80	4.80
Japan	0-40	0-40	0.00	0.00	0.00
Luxembourg	0-17	0-7	3.09	3.09	0.00
Netherlands	1.72-31.25	1.72-40.65	5.25	11.00	5.75
United Kingdom	0-50	0-50	0.00	0.00	0.00
United States	0-15	0-15	4.80	4.80	0.00

*As a percent of c.i.f., duty-paid, import price excluding the tax.
Notes: a. for steel only.
Sources: Internal tax range to internal tax on steel; see text.
Border tax range and border tax on steel; see text.
Excess of border over internal tax is Column 4 minus Column 3.

this nontariff barrier.

Most of the major steel-trading countries do not tax imports at a higher rate than domestic goods. For instance, France and Germany tax imports at the same rate as their value-added tax on domestic products. Japan and the United Kingdom generally tax only consumer goods at the retail level and therefore do not usually apply border taxes. Luxembourg applies its domestic sales tax equally to imports, although it imposes a separate import tax discussed under import surcharges above.[34] The United States generally levies taxes only at the retail level, and even with its mixed single-stage and cascade tax systems at the state level, taxes are rarely levied at the border.[35] Four major steel traders, however, impose higher taxes on imports than on domestic steel.

2. Border Taxes on Steel.

Steel imports to Belgium are subject not only to the normal turnover tax but also to an additional charge called majoration, the range of which varies considerably.[36] For steel imports majoration varies from three percent to 8.5 percent with an unweighted average of 6.58 percent.[37] The fact that there appears to be no relation between the stage of processing and the rate of majoration, seems to indicate that the extra tax is imposed for reasons other than compensating for tax occulte.[38]

The Canadian Federal sales tax ranges from zero on most steel sales to 12 percent on sales of steel for

construction purposes.[39] However, all steel imports are taxed at the 12 percent rate, so that to the extent that these imports are not for construction purposes, a higher-than-domestic tax is levied upon them.[40] The proportion of United States steel consumption accounted for by the construction sector was approximately 20 percent in 1966.[41] Assuming that this ratio applies equally to Canadian steel consumption, one may conclude that the same proportion of Canadian imports would go to construction if distortions caused by trade restrictions were absent. Thus the excess border tax of 12 percent would apply to about 80 percent of Canadian steel imports.

Italy levies a so-called equalization tax of 3.6 to 7.8 percent on its steel imports, in addition to the four percent domestic turnover tax.[42] The average equalization levy is 4.8 percent.[43]

3. Restrictiveness.

United States steel producers regard border taxes on imports as the most retrictive nontariff barrier imposed by Common Market countries. However, they make no distinction between the domestic-equivalent border taxes of France and Germany and the extra taxes added by other EEC member states. Indeed, United States producers regard all these border taxes as discriminatory, because from their point of view the higher European taxes penalize their exports more than their United States sales.. They fail to appreciate the fact that their exports are taxed at the same rate as competing goods in the value-added countries.[44] United States

producers find no border tax barriers in the other major steel-trading countries, nor do United States importers find them in America.[45]

C. Price Controls.

Domestic price regulation may extend to imports and prevent them from competing price-wise with domestic goods, or in order to make imports less competitive they may lower domestic prices which are normally higher. These schemes for influencing aggregate or individual prices vary from the direct controls of the pure managed economy to indirect government pressure in what is otherwise a free enterprise system. While direct price support for some agricultural commodities is common practice among the industrial countries of the West, there is little direct control over prices of many manufactures.

However, both the European Coal and Steel Community (ECSC) and individual European governments influence domestic steel prices. The ECSC encourages cullusive pricing by making the publication of prices obligatory.[46] In addition, the ECSC High Authority has the power to establish both maximum and minimum prices.[47] There is little evidence as to the extent this power has been exercised, but Dutch steelmakers have recently asked the Common Market Commission for a "relaxation of price control."[48]

On the eve of the ECSC, many European governments exerted some form of pirce control over steel producers. The post-World War II German government had a ceiling on steel

prices until 1952, and afterwards permitted prices to be established by negotiation between producers and consumers. Maximum prices were also fixed by the French and Italian governments. In Belgium domestic steel prices were fixed by agreement between the steel producers and Fabrimetal, their main customer. Both here and in Luxembourg, however, the steel prices were subject to government approval. In contrast, the Netherlands provided for government price control only when it was necessary.[49]

Although the ECSC has not authorized price agreements among firms, internal prices still change simultaneously within each country. Apparently, such behavior is the result of the remaining government price control systems in each European country where "steel firms discuss prices among themselves and negotiate collectively with their respective governments through their national trade associations."[50] There are strikingly similar negotiations carried on between the Japanese Iron and Steel Federation and the Japanese Ministry for International Trade and Industry.[51] The United States steel industry's pricing policies have been subjected to political pressure, but no direct price controls have been applied.[52]

Great Britain, the only major steel-trading country with a nationalized steel industry, is distinguished from other steel countries by its direct price controls. According to United States steel producers these direct controls in the United Kingdom presented the only significant barrier of this type among the major steel traders, and it was ranked third

in restrictiveness.[53]

D. Patents.

All the industrial countries of the West have laws protecting commercial property rights. Few appear to restrict importers more than domestic producers, although the foreign exporter may have more difficulty in learning about and satisfying domestic requirements from a distance.

Difficulties and delays have been encountered in obtaining patent protection when it must be had in many countries. However, the EEC and EFTA are presently negotiating a centralization of procedures which result in a common European patent. Steel importers will regard the United States patent system as restrictive to imports,[54] although no specific indication of the type of obstacle it presents has been found.

III. Other Internal Policies.

A. Technical Specifications.

The Common Market Commission has ranked stringent design and performance regulations as the most restrictive inter-European nontariff barrier, after taxes and quantitative restrictions.[55] The EEC has set the end of 1969 as the deadline for alignment of these standards.[56] Presently, European government standards for textiles, motor vehicles, agricultural tractors and machinery, crystal glassware, electrical machinery and equipment measuring instruments, and oil pipelines all differ from one country to another. Oil pipeline provisions may be of greatest relevance to primary steel producers. According to the EEC, varying

methods used for calculating capacity and rules on the use and assembly of materials and equipment force pipe producers to custom-make pipe for each country "and thus lose the benefit of economies of scale."[57]

EFTA is also taking a first step toward aligning technical requirements by establishing a system of reciprocal use of test reports. According to an EFTA report, "the obligation to undergo separate tests for each individual market can greatly increase exporters' costs and thus constitute an indirect barrier to trade."[58]

Examples of outright discrimination against foreign goods through technical regulations come from many states and localities. For instance, some state and local governments require boilers and containers for liquid gas under pressure to comply with the code of the American Society of Mechanical Engineers (ASME). State employees responsible for inspection must be affiliated with the ASME, "which however follows a policy of declining to approve manufacturers outside the United States and Canada..."[59]

United States steel importers have ranked technical regulations as the fifth most restrictive nontariff barrier in the United States.[60] There have been no specific complaints made public, however, except those against changes in specifications which may discriminate against American imports. One such change has been proposed to the American Society of Testing and Materials. It recommends that structural steel imports be marked as to manufacturer as well as

country of origin in raised letters. Although the proposal has not been accepted by the Society, it is still under consideration.[61]

B. National Security Restrictions.

Although the practice of building up industrial complexes for military reasons is not uncommon among the industrial countries, the United States provides the prime example of the abuse of protection for domestic producers for the sake of national security. Ever since the 1954 Trade Agreements Extension Act, the United States President has had the authority to control imports for security reasons.[62] He can restrict imports by levying unlimited tariffs or quotas.[63] Many applications for import relief have been made to the Office of Civil and Defense Mobilization since passage of the national security amendment, partly because applications to the Tariff Commission under the escape clause provision have been so unsuccessful.[64] Nevertheless, few items have been accorded this type of protection, oil being the most important exception.

The United States steel industry is carrying out an extensive campaign to publicize the threat to national security caused by United States steel imports. Their justification for import relief is an estimate that in a limited war five years from now which cut off waterborne imports, total steel requirements would be 22 million tons larger than present United States steel capacity.[65] Apart from the unwarranted assumptions that exports would continue at

present levels, and that present capacity would not grow over the next five years, this estimate ignores two other important facts. First, United States steel imports have helped satisfy increased United States demand during the last two limited wars in Korea and Vietnam. Second, the domestic industry imports over one-third of its basic raw material, iron ore, and nearly all of such important alloy materials as chrome and manganese ore.[66] For all that, a Senate study has concluded that "if the United States would rely more and more on importing steel, it would gamble with the national welfare and the national security..."[67]

IV. Footnotes..

[1]Massel, op. cit., p. 65.

[2]Steel Imports, op. cit., p. 39.

[3]Time, op. cit., July 11, 1969, p. 74.

[4]Foreign Trade and Tariff Proposals, op. cit., Pt. 1, p. 304.

[5]"World Steelmen Meet But Don't Quite Weld," Business Week, November 18, 1967, p. 46.

[6]Organization for Economic Cooperation and Development, The Iron and Steel Industry in 1967 and Trends in 1968, Paris; 1968, Table 38.

[7]Finney and Miller, Principles of Accounting: Intermediate, Prentice-Hall, Inc.: Englewood Cliffs, New Jersey, Fifth Edition, p. 355.

[8]Ibid., p. 360.

[9]A. H. Fetherolf, "Erosion," Steelways, May, 1961.

[10]Fenney and Miller, op. cit., p. 371.

[11]Steel Prices, op. cit., p. 432.

[12]"Rationalization in France," Steel Review, British Iron and Steel Federation, January, 1967, p. 1.

[13]J. Bell, "Fall of the House of Krupp," Fortune, August, 1967, pp. 73, 74; "Rationalization in France," op. cit., p. 1.; Steel Imports, op..cit., p. 40.

[14]"Iron and Steel Industry," The Oriental Economist, April, 1967.

[15]The Steel Import Problem, American Iron and Steel Institute, New York: 1967, p. 30.

[16]Steel Imports, op. cit., p. 219.

[17]Newsletter, West Coast Metal Importers Association, Inc., Vol. 2, No. 8, August, 1968, p. 3.

[18]Steel Imports, op. cit., p. 32.

[19]Discussed in Appendix One.

[20]Foreign Trade and Tariff Proposals, op. cit., Pt. 8, p. 3663.

[21]TWA Marketair Newsletter, "Spotlight on France," Transworld Airlines, Vol. III, No. 5, September, 1967, p. 2.

[22]European Community, op. cit., August, 1968, p. 5.

[23]Steel Imports, op. cit., p. 40.

[24]Time, September 16, 1966, p. 112.

[25]Steel Imports, op. cit., p. 207.

[26]$3.50 time 52 weeks times 317,000 employees, all of which are assumed to be adult males.

[27]Based on total revenue of $2,985.9 million. Source: Steel Imports, op. cit., p. 455.

[28]Bulletin de la Communante, Europeen du Charbon et de l'Acier Haute Autorite, No. 61, Luxembourg, April, 1966, p. 21.

[29]Steel Imports, op. cit., p. 39.

[30]Ibid., p. 34, 35.

[31]1964 exports, see Kelly, op. cit., p. 272.

[32]Time, July 11, 1969, p. 74.

[33]This output/input ratio is based on the 1322 pounds of coking coal consumed per ton of steel in the United States in 1966, Its use is qualified by the fact that subsidies and trade restrictions may have altered factor-use ratios, as well as by the fact that the ratios may differ among countries for other reasons. See Steel Imports, op. cit., p. 169.

[34]See Appendix 1.

[35]Organization for Economic Cooperation and Development, 1968, op. cit., pp. 116-175.

[36]Foreign Trade and Tariff Proposals, op. cit., p. 3881.

[37]Belgian Office of Foreign Trade, Tariff des Droits Entree, op. cit., Ch. 73 and Annex, April, 1969.

[38]Ibid.

[39]Letter dated June 23, 1969, United States Embassy, Ottawa, Ontario, op. cit.

[40]Letter dated July 15, 1969, Department of National Revenue, Ottawa, op. cit.

[41]Steel Imports, op. cit., p. 351.

[42]United States Embassy, Rome, Italy, op. cit.

[43]Steel Imports, op. cit., p. 37.

[44]The Steel Import Problem, op. cit., p. 32.

[45]See Figure 4.

[46]L. Lister, Europe's Coal and Steel Community, Twentieth Century Fund: New York, 1960, p. 206.

[47]Ibid., p. 210.

[48]European Community, op. cit., May, 1969, p. 23.

[49]Lister, op. cit., pp. 196, 197.

[50]Ibid., p. 198.

[51]Steel Imports, op. cit., pp. 328-329.

[52]See G. McConnel, Steel and the Presidency, 1962, Norton, New York, 1963, pp. 119 and R. Hooper, The Steel Crisis, The John Day Co.: New York, 1963, p. 314.

[53]See Figure 4.

[54]Ibid.

[55]European Community, op. cit., May, 1969, p. 12.

[56]Ibid., October, 1968, p. 17.

[57]Ibid., May, 1969, p. 13.

[58]EFTA Reporter, February 21, 1969, p. 3.

[59]European Community, op. cit., July, 1965, pp. 9, 10.

[60]See Figure 4.

[61]West Coast Metal Importers Association, Newsletter, January, 1969, p. 2.

[62]Masson and Whitely, op. cit., p. 41.

[63]Subcommittee on Customs, Tariffs, and Reciprocal Trade Agreements, Committee on Ways and Means, United States Customs, Tariff and Trade Agreement Laws and Their Administration, United States Government Printing Office: Washington, D.C., 1957, p. 100.

[64]The New York Journal of Commerce, February 23, 1959, p. 1.

[65]The Steel Import Problem, op. cit., p. 50.

[66]Foreign Trade and Tariff Proposals, op. cit., p. 2095.

[67]Steel Imports, op. cit., p. 246.

APPENDIX FOUR
RESTRICTIVE BUSINESS PRACTICES

I. Introduction.

Private practices are included in this study of governmental nontariff barriers because the governments of the Western industrial nations have long exercised control over restrictive business behavior. Their failure to take action against those practices which restrict imports may imply that the governments sanction those restrictions. A general discussion of restrictive business practices engaged in by the steel cartels is followed by consideration of two specific practices which are claimed to deter United States steel exports: exclusive supply agreements coerced by steel cartels, and freight rate discrimination practiced by ocean shipping cartels.

II. Steel Cartels.

Since 1953, European steel producers have participated in an export cartel called the Entente de Bruxelles, whose avowed purpose was the fixing of minimum export prices for all the major steel products. Japan has export agreements among steel producers for particular steel products. The main purpose of these organizations has been to establish minimum export prices,[1] set the total level of exports to the United

States, and assign a certain share of the United States market to each of its members, who account for 85 percent of Japanese steel production.[2]

As for domestic cartels, there is no evidence of formal cartels in the Benelux countries or Italy, but Holland and Luxembourg have no need for them because of virtual monopolies in both countries. In Italy, a de-facto steel cartel exists because the industry is dominated by the Finsider group which in turn has the government for a major stockholder.[3] Besides marketing functions, four German cartels will attempt to guide members' investment and specialization policies, set production quotas, and maintain a uniform price system.[4] French steel producers make joint decisions on matters of supply, marketing, domestic and foreign sales, investment, and raw materials.[5] While the oligopolistic United States steel industry would otherwise be receptive to cartelization, American antitrust laws prevent overt agreements. Despite this, the United States industry has tried to avoid the characteristic price instability of oligopoly by accepting its dominant firm as a price leader. Nevertheless, according to Pricing in Big Business, United States Steel Corporation's lead has not always been followed.[6]

III. Restrictive Practices.

As evidenced by the goals of various cartels, they participate in a wide variety of restrictive business practices. They fix prices at high levels in order to make

excess profits, or may lower them below cost to drive out competition. If they can separate the markets in which they sell, cartels may practice price discrimination, charging each set of buyers different prices, according to what each market will bear. They allocate product or geographical markets or shares of markets among their members so as to prevent any need for rivalry. They may attempt to maintain their control of certain markets through exclusive supply agreements, and monopolization of patents or other factors of production.

Monopolies practice many of the same type of activities, but there is a constraint on cartel activity that does not apply to monopolies: cartel policies will be successful only in so far as its members are willing to follow them. In the United States, where agreements in restraint of trade are illegal, it is difficult to enforce cartel rules.[7] Despite government sanctions, European cartels have also had problems dealing with intransigent members. The original international steel cartel's control schemes were abandoned by its members at the start of the Depression.[8] Even in national steel cartels, price-cutting in violation of the agreement occurs during recession.[9] However, the French have a new penalty for divergence from quotas and prices. Each steel producer now deposits a blank check made out to the cartel. If the producer breaks the agreements, his fine is written in and the check is cashed, proceeds going to the other members.[10]

Another constraint applies to both monopolies and cartels: their policies will be successful only so long as the cartels are immune from outside competition. National agreements may not include all producers, and excess profits may attract new entrants to an industry. New entrants may come from domestic sources or from abroad. If they cannot be driven out through price wars or exclusive supply agreements, cartels may seek to exclude them by political means. In the case of competition from abroad, cartel pressure may cause governments to erect tariffs and other barriers to imports. Thus, apart from any nontariff barriers established by the cartel itself, restrictive agreements may also promote governmental barriers. Of course, for international cartels the problems of outside competition are magnified, and the resort to political protection not feasible in the markets of non-members.

To what extent do cartels alone raise obstacles to imports? Charging a higher price in the domestic market and a lower one abroad creates no import barriers between the exporting and importing countries, and most industrial countries have antidumping restrictions which restrict the effectiveness of such practices. In third markets, however, the lower prices charged by cartels may effectively exclude non-member exporters. Predatory price-cutting by a cartel or a monopolist can raise an important barrier to the entrance of imports. Exclusive supply agreements can also place imports

at a competitive disadvantage, and this is discussed in the next section. As for the remaining restrictive business practices, however, it must be said that in themselves they do more to attract imports by raising the domestic price above a competitive level.

Theoretically, the nontariff barriers created by foreign steel cartels and monopolies are few, but there is no way to quantify their effects on imports. World steel producers consider cartel activities in general to be significant barriers in all major steel countries except Canada. To them, the British Steel Corporation is little different from the government-controlled cartels of Europe and they consider its policies to be the second most important barrier in the United Kingdom. Import restriction by French and German cartels rank third in each country. Those imposed by Italian and Benelux ententes rank fourth among the import barriers of each country, and those of Japan are in fifth place.[11]

IV. Exclusive Supply Agreements.

Although quality differences fail to make steel a differentiable product because such differences are measurable,[12] it is possible for some steel producers to monopolize the output of certain types or qualities of steel. Moreover, large-volume buyers with variable production levels may be constrained to buy from nearby producers to assure continuous supply, quick delivery, and reduce the necessity to carry large inventories. Whenever domestic producers obtain a

degree of monopoly power because of these conditions, they may exercise it through exclusive supply agreements. These are similar to tie-in contracts by which the customer agrees to purchase all required steel from the domestic producer in order to be able to buy any.[13]

American steel producers claim that United States exports are restrained by steel cartels such as the "Tin Plate Club" in Europe. The main restrictive practice employed by such cartels is a threat to cut off a customer's main source of supply if it buys imported steel. In this study's survey of United States steel exporters, exclusive supply agreements were ranked as the fifth most restrictive barrier in Germany, Italy, the Benelux countries, and Canada, while they were ranked sixth in France, and found to be insignificant in Japan and the United Kingdom. United States steel importers claim that these agreements are the fourth most important barrier to American imports.[14]

V. Freight Rate Discrimination.

The ocean freight rates applicable to foreign trade among the major steel countries are for the most part established by steamship cartels known as conferences. The steamship conferences were formed to eliminate price competition among the member lines, to standardize shipping practices, and to provide regularly scheduled service between designated ports.[14]

Each conference publishes ocean freight rate schedules or tariffs on a commodity basis, with different commodities

being charged different rates for movement between the same points. Hundreds and sometimes thousands of rates are published by each conference, and items for which no specific rates are established are assigned a general cargo rate. Shipping prices may be quoted on the basis of weight, space occupied, or a combination of both, but steel rates are usually quoted on a per ton basis.[16]

Steamship lines serving the United States foreign trade as common carriers are required by the United States Shipping Act to file their tariffs with the Federal Maritime Commission, maintain them in an up-to-date manner, and keep them open to public inspection. The law also requires that only those rates on file with the Commission can be charged, and it may disapprove any rate which, after hearing, it finds to be "so unreasonably high or low as to be detrimental to the commerce of the United States."[17] Moreover, the Shipping Act prohibits rates which are unjustly discriminatory between shippers or ports, or unjustly prejudicial to exporters of the United States as compared with their foreign competitors.[18] When a given ocean freight rate is restricting his exports, a United States exporter must first enter into negotiation with the particular conference involved,[19] and then make an informal or formal complaint to the Federal Maritime Commission.[20]

The lack of price competition among shipping lines is the most frequently mentioned disadvantage of the conference system for exporters. Critics of the system claim that the

level of ocean freight rates is probably higher than it would be if the forces of competition were freely at play. Exclusive patronage arrangements, such as the dual rate contract, serve to reduce the choice available to exporters when services are available from independent carriers. The dual rate contract is a contractual arrangement whereby an exporter, in exchange for committing all or a fixed portion of his shipments to the vessels of a given conference, is granted a "contract rate" that may be as much as 15 percent below the published tariff rate that applies to exporters who do not sign exclusive patronage contracts.[21]

"Contract rates" are the most significant for purposes of comparison, since the availability of independent carriers appears to be limited. In 1961, independent liners carried only five percent of United States exports and ten percent of United States imports.[22] Reportedly, an equally small percentage of steel imports entered the United States on tramp steamers.[23] Nevertheless, analysis of these rates must be qualified by the fact that independents are handling an increasing share of steel trade volume. Moreover, major steel shippers often seek to negotiate lower rates than those listed.[24] Although freight rate differentials on exports to third countries also exist, these will not be considered here.

Alleged freight rate discrimination against American exports was first publicized by former Senator Paul Douglas in Senate hearings.[25] He claimed that export rates were

generally 30 to 40 percent higher than import rates, due to European and Japanese control of international shipping cartels.[26] Paradoxically, the United States steel industry has never listed freight rate discrimination among the many nontariff barriers it claims to face. Five of seven major steel companies surveyed by the Council of Economic Advisors replied that "ocean shipping rate differentials do not put them at a major disadvantage" in export markets.[27]

Reacting to Senator Douglas' findings, one specialist in steel freight rates commented that "published conference rates . . . mean very little unless there is an active trade in the product involved."[28] According to industry spokesmen, the rates compare favorably on those steel products which account for the largest share of United States exports.[29] However, it is possible that the causal relationship runs in an opposite direction from that implied by the industry spokesmen. The present composition of United States exports may be due to low export freight rates on some items, and other products may not be exported because of the high rates on them.

The actual rates in question between the United States and other overseas steel traders are presented in Tables A15 and A16. The lower "contract rates" are presented since these are the most applicable to large shippers. Similar comparisons have been made for 1962 and 1967, but they do not cover the entire range of steel products, nor do they show the rates for all relevant trade routes.[30] For these reasons 1963

Table A15
Conference Ocean Freight Rates on
United States Exports to Major Steel-Trading Countries

(Dollars per long ton.)

Steel Products	Country of Destination					
	Benelux	France	Germany	Italy	Japan	United Kingdom
Structural sections	25.75	28.50	28.50	27.50	28.10	25.75
Castings & forgings	36.25	40.25	40.00	46.50	55.50	36.25
Billets & blooms	13.25*	13.25	13.25	13.25	30.35	13.25
Rails	30.25	33.50	33.25	30.25	36.35	30.25
Wire rods	21.00	26.75	23.00	21.00	30.35	21.00
Pipes	46.25	51.25	51.00	41.25	30.35	46.25
Bars	13.25*	27.50	13.25	13.25	28.10	13.25
Sheets	13.25	13.25	13.25	20.00	30.35	13.25
Plates	15.25	13.25	15.25	20.00	24.10	15.25
Wire excl. rods	24.75	25.00	27.25	24.75	30.35	24.75

Notes:

First column gives rates between Antwerp, Rotterdam, Amsterdam and United States North Atlantic ports.
Second column gives rates between French North Atlantic ports and United States Gulf ports.
Third column gives rates between West Germany and United States North Atlantic ports.
Fourth column gives rates between Italy and United States North Atlantic ports.
Fifth column gives rates between Japan and United States Pacific Coast ports.
Sixth column gives rates between Benelux and United States North Atlantic ports in the absence of data on the United Kingdom.
Canada is not reported to have discriminatory freight rates; shipping charges are also less significant between Canada and the United States.
*Minimum rates.

Sources: Steel Prices, op. cit., pp. 555-557, 563-566; Discriminatory Ocean Freight Rates, op. cit., pp. 785, 805, 960-964.

Table A16
Conference Ocean Freight Rates on
United States Imports from Major Steel-Trading Countries

(Dollars per long ton.)

Steel Products	Origin					
	Benelux	France	Germany	Italy	Japan	United Kingdom
Structural sections	17.75	13.50	17.75	23.25	15.50	17.75
Castings & forgings	26.25	34.00	26.25	30.00	24.00	26.25
Billets and blooms	17.25	13.50	17.25	17.25	15.50	17.25
Rails	17.75	13.50	17.75	17.75	15.50	17.75
Wire rod	16.50	13.50	16.50	16.50	15.50	16.50
Pipe	18.75	14.50	18.75	24.75	18.00	18.75
Bars	17.75	31.00	17.75	17.75	15.50	17.75
Sheets	20.00	13.50	20.00	23.25	15.50	20.00
Plates	20.00	13.50	20.00	23.25	15.50	20.00
Wire excl. rods	15.75	15.00	15.75	15.75	22.75	15.75

Sources: Same as Table A15.

rates were used. Inspection of available 1967 data indicates that although freight rates have risen, differentials have remained approximately the same. Rates were obtained for all SITC steel products except pig iron[31] and hoop and strip.[32] Although there are differences between the statistical classification of commodity trade on the one hand, and freight rate tariffs on the other, disaggregation of the statistical data to the three and four digit level permitted a close matching.

Senator Douglas made his estimate of the freight rate differential on the basis of an unweighted average of the shipping cost per ton. Shipping conference representatives expressed their estimates on the average differential per pound of steel weighted by the United States trade volume of each particular item.[33] Another contribution considered the freight rate differential as a percentage of c.i.f. value, but still weighted the differentials according to the volume of each item in United States foreign trade.[34] With regard to a small sample of United States imports in SITC categories 5-8 the latter study found a positive differential (i.e., export minus import rate as a percent of c.i.f. value) of 2.5 percent, while United States manufactured exports have a positive differential of 0.7 percent.[35]

The same study found that transportation charges varied from three to five percent of the landed value of manufactures. In contrast, steel freight rates range from 4.6 to 27.2 percent of the c.i.f. steel price. The export rates shown in

Table A 17 have an unweighted average of 10.7 percent, while

Table A17
Conference Ocean Freight Rates** on
United States Exports to Major Steel-Trading Countries

(As a percent of United States export price*)

Steel Products	Destination					
	Benelux	France	Germany	Italy	Japan	United Kingdom
Structural sections	14.0	14.0	14.0	14.0	27.2	14.0
Castings & forgings	8.5	10.6	9.2	8.5	11.8	8.5
Billets & blooms	4.6	9.2	4.6	4.6	9.4	4.6
Rails	15.1	16.4	16.4	15.0	16.2	15.1
Wire rods	6.5	5.7	6.5	8.4	9.9	6.5
Pipes	5.2	5.2	5.2	7.7	11.2	5.2
Bars	16.6	18.0	17.0	16.6	19.3	16.6
Sheets	8.0	8.1	8.8	8.0	9.7	8.0
Plates	9.3	10.3	10.2	8.4	6.3	9.3
Wire excl. rods	9.0	9.9	9.9	11.3	13.2	9.0

*c.i.f. prices calculated from data on f.o.b. prices and freight charges in Discriminatory Ocean Freight Rates, op. cit., p. 12; and United Nations, Statistical Papers, "Commodity Trade Statistics," 1963, Series D, Volume XIII, Numbers 1-20, pp. 4042, 4809.

**Based on freight rates on Table A15.

import rates in Table A18 average 12.8 percent. This negative differential in terms of United States steel trade reflects the fact that some export rates per ton are lower than import rates, as well as the disparity between high United States steel export prices and low import prices. The differentials

Table A18
Conference Ocean Freight Rates** on
United States Imports from Major Steel-Trading Countries

(As a percent of United States import price*)

Steel Products	Origin					
	Benelux	France	Germany	Italy	Japan	United Kingdom
Structural sections	15.3	12.1	15.3	19.2	13.6	15.3
Castings & forgings	6.9	8.8	6.9	7.8	6.3	6.9
Billets and blooms	18.1	14.7	18.1	18.1	16.6	18.1
Rails	15.7	12.4	15.7	15.7	14.0	15.7
Wire rods	14.7	12.3	14.7	14.7	13.9	14.7
Pipes	11.2	8.9	11.2	14.3	10.8	11.2
Bars	11.9	19.0	11.9	11.9	10.5	11.9
Sheets	10.0	7.0	10.0	11.4	7.0	10.0
Plates	17.7	12.7	17.7	20.0	14.3	17.7
Wire excl. rods	8.8	8.4	8.8	8.8	12.2	8.8

*c.i.f. prices calculated from data on f.o.b. prices and freight charges in same sources as in Table A17.

**Based on freight rates in Table A16.

by steel product and by country are presented in Table A19.

As noted above, weighting the freight rate differentials by the share of each steel product in United States steel trade can result in the protective effect of the differentials being understated. This understatement results from high differentials which may severely restrict certain products being given very little weight. Ideally, each differential should be weighted by what trade would have been in their absence. Since this is not known, a second-best weight might be the share of each steel product in the domestic steel

Table A19
Conference Ocean Freight Rate** Differentials*

(As a percent of United States c.i.f. price)

Steel Produces	Between the United States and:					
	Benelux	France	Germany	Italy	Japan	United Kingdom
Structural sections	-4.1	-0.7	-4.1	-4.1	10.6	-4.1
Castings & forgings	-6.2	-1.7	-5.5	-6.2	-2.9	-6.2
Billets & blooms	-7.3	-9.8	-8.3	-7.3	-1.1	-7.3
Rails	-0.2	4.3	1.1	-3.3	2.6	-0.2
Wire rods	-11.2	-7.0	-11.2	-11.6	-4.4	-11.2
Pipes	-4.8	-1.8	-4.8	-3.7	3.3	-4.8
Bars	0.9	5.6	2.2	0.9	5.3	0.9
Sheets	-0.8	-0.3	0.0	-0.8	-2.5	-0.8
Plates	-1.9	1.4	-1.0	-5.9	-4.5	-1.9
Wire excl. rods	2.1	1.1	3.0	3.5	6.9	2.1

*United States export rates minus import rates.

**Rates obtained from Tables A17 and A18.

consumption of each country. Although this information is readily available for the United States, it is not complete for Europe.[36] Therefore, this study has used the share of each steel product in the total export trade of the United States and the main overseas steel traders as weights for the freight rate differentials. Their percentage shares are listed in Table A20. The weighted differentials, with their sum equalling the average for each country vis a vis the United States, appear in Table A21. Negative differentials which restrict United States steel imports range from a high of 5.4 percent on trade with Italy to a low of 2.1 percent on trade with France.

Table A20
The Share of Steel Products in the
Total Steel Trade of the Major Steel-Trading Countries*

Steel Products

SITC Code	Description	Share of Total**	Percent of Total
673.4,5	Structural sections	458,668	9.9
679.0	Castings & forgings	18,360	0.4
672.0	Billets & blooms	314,083	6.8
676.0	Rails	93,030	2.0
673.1	Wire rods	216,804	4.7
678.0	Pipes	900,697	19.5
673.2	Bars	600,152	13.0
674.3,7,8	Sheets	1,420,418	30.8
674.1,2	Plates	381,151	8.3
677.0	Wire excl. rods	211,539	4.6
	Total	4,614,902	100.0

*Total exports of Benelux, France, Germany, Italy, Japan, United Kingdom, and the United States. Canada is excluded.

**F.o.b. value in thousands of United States dollars (1963).

Source: United Nations, Statistical Papers, "Commodity Trade Statistics," 1963, Series D, Vol. XIII, No. 1-20, pp. 4039-4042; No. 1-23, pp. 4574-4578; No. 1-19, pp. 3815-3818; No. 1-18, pp. 3566-3570; No. 1-22, pp. 4392-4395; No. 1-20, pp. 3871-3873; No. 1-12, pp. 2247-2251; No. 1-15, pp. 2864-2869.

Table A21
Conference Ocean Freight Rate Differentials* Weighted by the Share of Each Steel Product in Total Steel Exports**

Steel Products	Between the United States and:					
	Benelux	France	Germany	Italy	Japan	United Kingdom
Structural sections	-.279	-.476	-.279	-.279	.721	-.279
Castings & forgings	-.291	-.130	-.258	-.291	-.136	-.291
Billets & blooms	-.949	-1.274	-.949	-.949	-.143	-.949
Rails	-.020	.693	.109	-.327	.251	-.020
Wire rods	-.930	-.581	-.930	-.963	-.365	-.930
Pipes	-1.478	-.554	-1.478	-1.140	1.016	-1.478
Bars	.018	.112	.044	.018	.106	.018
Sheets	-.368	-.138	.000	-.368	-.115	-.368
Plates	-.370	.273	-.195	-1.150	-.877	-.370
Wire excl. rods	.008	.004	.012	.014	.028	.084
Total***	-4.651%	-2.071%	-3.924%	-5.435%	.492%	-4.651%

*As a percent of c.i.f. price from Table A19.

**From Table A20.

***Column totals are equal to the average differential for all steel products in trade between the United States and each of the above countries.

The only positive differential appears in trade with Japan. This result is also supported by the present study's survey of American steel producers, who cited Japan as the only importer with higher freight rates. The barrier created by this discrimination was ranked last in importance, however. For some reason, United States importers did not list inbound freight rates as restrictive to United States steel imports.

To determine the average differential facing United States steel imports from all eight countries, each country's average differential was weighted by that country's share in the combined steel export trade of the group. These shares for 1963 are found in Table A22. The weighted average United

Table A22
United States Freight Rate Differential* Calculation

Other Major Steel Traders	Average Freight Rate Differential**	Share of Each Country in Total Steel Trade***	Weighted Freight Differentials****
Benelux	4.65	26.0	1.21
France	2.07	16.0	0.33
Germany	3.92	25.0	0.98
Italy	5.43	4.0	0.22
Japan	-0.49	16.0	-0.08
United Kingdom	4.65	13.0	0.60

Average United States freight rate differential...3.26

*United States import minus export rate as a percent of c.i.f. price. This is equal to the sum of the third column.

**Based on differentials from Table A21, but with opposite sign.

***Calculated from 1963 f.o.b. value of exports. Source: United Nations, op. cit. Share is shown as a percent of total steel exports from overseas steel traders.

****Percent of c.i.f. price. Derived by multiplying the first column times the second. Sum of these weighted differentials gives the average United States freight rate differential.

States freight rate differential is a positive 3.26 percent of c.i.f. value. If the burden of adjustment is placed on inbound United States and Japanese rates, they would have to be lowered by the amount of the differential in order to eliminate

this nontariff import barrier. Therefore, the differentials represent the advalorem rate of this import barrier, and their restrictive effect on imports can be estimated like that of the other quantified restrictions described in this study.

VI. Footnotes.

[1]Steel Imports, op. cit., p. 329.

[2]Ibid., p. 328.

[3]Business Week, op. cit.

[4]Ibid.

[5]Ibid.

[6]A. Kaplan, J. Dirlam, R. Lanzilotti, Pricing in Big Business, The Brookings Institute, 1958, pp. 13-23.

[7]For part of the extensive literature on the extent of cartel activity under the antitrust laws see D. Orr and P. W. MacAvoy, "Price Strategies to Promote Cartel Stability," Economica, May, 1965, pp. 186-197; G. J. Stigler, "A Theory of Oligopoly," Journal of Political Economy, February, 1964, pp. 44-61.

[8]Hexner, op. cit., p. 79.

[9]Lister, op. cit., pp. 205-206.

[10]Business Week, op. cit., p. 98.

[11]See Figure 4.

[12]R. Caves, American Industry: Structure, Conduct, and Performance, Prentice-Hall, Englewood Cliffs, New Jersey, 1967, p. 21.

[13]General Agreement on Tariffs and Trade, Restrictive Business Practices, 1959, p. 25.

[14]See Figure 4.

[15]United States Department of Commerce, Federal Maritime Commission, Ocean Freight Rate Guidelines for Shippers, United States Government Printing Office: Washington, D.C., May, 1966, p. 1.

[16]Steel Imports, op. cit., p. 415.

[17]Ocean Freight Rate Guidelines, op. cit., p. 3.

[18]Ibid.

[19]Ibid., p. 7.

[20]Ibid., p. 10.

[21]Ibid., p. 2.

[22]Steel Prices, op. cit., p. 551.

[23]Foreign Trade and Tariff Proposals, op. cit., Pt. 4, p. 1702.

[24]Steel Imports, op. cit., p. 414.

[25]Steel Prices, op. cit., pp. 530-570.

[26]Hearings on Senate Resolution 149, op. cit., p. 87.

[27]Council of Economic Advisers, Report to the President on Steel Prices, 1965, p. 17.

[28]"Congressional Confusion: Steel 'Inequities' Hit by Douglas," American Metal Market, May 3, 1963, p. 1.

[29]Ibid.

[30]Joint Economic Committee, Discriminatory Ocean Freight Rates and the Balance of Payments, 88th Congress, 1st Session, United States Government Printing Office: Washington, D.C., 1963, Pt. 1, p. 10; and Steel Imports, op. cit., p. 415-417.

[31]Standard Industrial Trade Classification Number 671.

[32]Standard Industrial Trade Classification Number 675.

[33]Discriminatory Ocean Freight Rates, op. cit., Pt. 5, pp. 777-987.

[34]Joint Economic Committee, 89th Congress, 1st Session, Discriminatory Ocean Freight Rates and the Balance of Payments, United States Government Printing Office: Washington, D.C., Pt. 3, p. 450.

[35]Ibid., p. 471.

[36]Organization for Economic Cooperation and Development, The Iron and Steel Industry in 1967 and Trends in 1968, OECD, Paris, 1968, Table 26.

APPENDIX FIVE
STATISTICAL TABLES

Table A23
United States Imports of Iron and Steel Mill Products

Year	Quarter	Quantity		Value		
		1,000s of short tons	Index 1957-59 = 100	Total in $1,000s	Unit per ton in dollars	Index of unit value 1957-59 = 100
1954	I	207.0	31.96	22,700	109.66	78.86
1954	II	324.0	50.02	30,900	95.37	68.58
1954	III	308.0	47.55	31,800	103.25	74.25
1954	IV	254.0	39.21	29,500	116.14	83.52
1955	I	253.0	39.20	29,500	116.19	83.55
1955	II	319.6	49.34	32,500	101.69	73.13
1955	III	364.2	56.23	36,500	100.22	72.07
1955	IV	427.0	66.06	46,500	108.67	78.15
1956	I	342.7	52.91	44,600	130.14	93.58
1956	II	427.0	65.92	50,700	118.73	85.38
1956	III	455.7	70.35	56,900	124.86	89.79
1956	IV	591.7	91.35	77,700	130.47	93.82
1957	I	433.4	66.91	65,800	151.82	109.17
1957	II	367.8	56.78	60,100,	163.40	117.50
1957	III	259.7	40.09	44,900	172.89	124.33
1957	IV	249.6	38.53	41,800	167.47	120.43
1958	I	269.6	41.62	41,000	152.08	109.36
1958	II	386.8	59.72	51,300	132.63	95.38
1958	III	536.5	82.83	63,000	117.43	84.44
1958	IV	644.3	99.47	75,200	116.71	83.93
1959	I	791.8	122.24	92,500	116.82	84.01
1959	II	1205.3	186.08	136,800	113.50	81.62
1959	III	1191.5	183.95	148,500	124.63	89.62
1959	IV	1436.5	221.77	200,100	139.30	100.17
1960	I	1470.0	226.95	206,400	140.41	100.97
1960	II	874.5	135.01	126,600	144.77	104.11
1960	III	618.2	95.44	87,700	141.86	102.01
1960	IV	607.4	93.77	84,800	139.61	100.39

Table A23 (cont'd.)

Year	Quarter	Quantity		Value		
		1,000s of short tons	Index 1957-59 = 100	Total in $1,000s	Unit per ton in dollars	Index of unit value 1957-59 = 100
1961	I	461.2	71.20	61,300	132.91	95.58
1961	II	714.0	110.23	84,600	118.49	85.21
1961	III	805.1	124.29	95,500	118.62	85.30
1961	IV	917.0	141.57	105,300	114.83	82.57
1962	I	895.6	138.27	106,700	119.14	85.67
1962	II	1046.2	161.52	122,300	116.90	84.06
1962	III	994.4	153.52	115,200	115.85	83.31
1962	IV	992.6	153.24	112,700	113.54	81.65
1963	I	888.3	137.14	110,200	124.06	89.21
1963	II	1312.5	202.63	142,700	116.34	83.66
1963	III	1531.8	236.49	175,000	114.24	82.15
1963	IV	1403.0	216.60	163,000	116.18	83.55
1964	I	1304.0	201.32	154,000	118.10	84.93
1964	II	1565.0	241.61	181,000	115.65	83.16
1964	III	1522.0	234.97	178,000	116.95	84.10
1964	IV	1735.0	267.86	202,000	116.43	83.73
1965	I	1747.0	269.71	209,000	119.63	86.03
1965	II	3015.0	465.47	341,000	113.10	81.33
1965	III	2868.0	442.78	315,000	109.83	78.98
1965	IV	2463.0	380.25	275,000	111.65	81.23
1966	I	1851.0	285.77	219,000	118.31	85.08
1966	II	2559.0	395.07	289,000	112.93	81.21
1966	III	3207.0	495.11	356,000	111.01	79.83
1966	IV	2824.0	435.98	319,000	112.96	81.23
1967	I	2367.0	365.43	283,000	119.56	85.98
1967	II	2783.0	429.65	324,000	116.42	83.72
1967	III	2869.0	442.93	320,000	111.54	80.21
1967	IV	3285.0	507.15	363,000	110.50	79.46
1968	I	3340.0	515.65	383,000	114.67	82.46
1968	II	4709.0	727.00	515,000	109.36	78.64
1968	III	5284.0	815.77	572,000	108.25	77.84
1968	IV	4408.0	680.53	492,000	111.61	80.26

Sources: United States Department of Commerce, World Trade Information Service and Overseas Business Reports, United States Government Printing Office: Washington, D.C., various issues.

Table A24
Steel Price Indexes

(1957-59 average = 100)

Year	Quarter	Import	Domestic	Relative
1954	I	78.9	77.5	101.8
1954	II	68.6	77.4	88.6
1954	III	74.2	78.9	94.1
1954	IV	83.5	79.0	105.7
1955	I	83.6	79.0	105.7
1955	II	73.1	79.1	92.4
1955	III	72.1	83.6	86.2
1955	IV	78.2	84.3	92.7
1956	I	93.6	85.5	109.4
1956	II	85.4	96.3	98.9
1956	III	89.8	90.1	99.6
1956	IV	93.8	92.4	101.6
1957	I	109.2	94.2	115.8
1957	II	117.5	95.0	123.7
1957	III	124.3	98.8	125.9
1957	IV	120.4	99.1	121.4
1958	I	109.4	99.4	110.0
1958	II	95.4	99.3	96.0
1958	III	84.4	100.7	83.8
1958	IV	84.0	101.8	82.5
1959	I	84.0	101.9	82.4
1959	II	81.6	102.0	80.0
1959	III	89.6	102.2	87.7
1959	IV	100.2	102.1	97.7
1960	I	100.9	102.0	98.9
1960	II	104.1	102.2	101.8
1960	III	102.0	102.0	100.0
1960	IV	100.4	102.0	99.4
1961	I	95.6	102.2	93.5
1961	II	85.2	102.0	83.5
1961	III	85.3	101.9	83.7
1961	IV	82.6	101.9	81.0
1962	I	85.7	101.8	84.1
1962	II	84.0	101.9	82.5
1962	III	83.3	101.8	81.8
1962	IV	81.7	101.8	80.2

Table A24 (cont'd.)

(1957-59 average = 100)

Year	Quarter	Import	Domestic	Relative
1963	I	89.2	101.7	87.7
1963	II	83.7	102.1	81.9
1963	III	82.1	102.3	80.3
1963	IV	83.6	103.3	80.9
1964	I	84.9	103.4	82.2
1964	II	83.1	103.3	80.5
1964	III	84.1	103.1	81.6
1964	IV	83.7	103.0	81.3
1965	I	86.0	103.4	83.2
1965	II	81.3	103.6	78.5
1965	III	78.9	104.0	85.9
1965	IV	80.3	104.0	77.2
1966	I	85.0	104.7	81.2
1966	II	81.2	104.9	77.4
1966	III	79.8	105.4	75.7
1966	IV	81.2	106.0	76.6
1967	I	85.9	106.6	80.6
1967	II	83.7	106.6	78.5
1967	III	80.2	107.2	74.8
1967	IV	79.4	107.9	73.6
1968	I	82.5	108.9	76.1
1968	II	78.6	109.2	72.0
1968	III	77.8	110.2	70.6
1968	IV	80.2	111.0	73.3

Sources: Import price index is from Table A23.
Domestic price index is derived from the Wholesale Price Index; see text.
Relative price index is the ratio of import to domestic price indexes.

Table A25
Index of United States Gross National Product
in Constant Dollars

(1957-59 average = 100)

Year	Quarter	Index	Year	Quarter	Index
1954	I	87.8	1962	I	113.3
1954	II	87.7	1962	II	115.1
1954	III	88.8	1962	III	116.3
1954	IV	90.6	1962	IV	117.4
1955	I	93.3	1963	I	118.0
1955	II	94.9	1963	II	119.0
1955	III	96.4	1963	III	120.9
1955	IV	97.3	1963	IV	122.6
1956	I	96.7	1964	I	124.5
1956	II	97.2	1964	II	126.2
1956	III	96.9	1964	III	127.7
1956	IV	98.2	1964	IV	128.3
1957	I	98.9	1965	I	131.2
1957	II	98.8	1965	II	133.1
1957	III	99.2	1965	III	136.7
1957	IV	97.7	1965	IV	138.8
1958	I	95.4	1966	I	141.4
1958	II	95.8	1966	II	142.4
1958	III	98.3	1966	III	143.8
1958	IV	100.6	1966	IV	145.5
1959	I	102.2	1967	I	145.1
1959	II	104.7	1967	II	145.9
1959	III	103.6	1967	III	147.3
1959	IV	104.7	1967	IV	148.7
1960	I	106.9	1968	I	151.0
1960	II	106.8	1968	II	153.4
1960	III	106.2	1968	III	155.3
1960	IV	105.5	1968	IV	156.6
1961	I	105.2			
1961	II	107.4			
1961	III	109.3			
1961	IV	111.6			

Sources: United States Department of Commerce, Business Statistics and Survey of Current Business, United States Government Printing Office: Washington, D.C.

Table A26
United States Crude Steel Capacity

(millions of tons)

Year	Quantity	Year	Quantity
1954	124.3	1958	140.7
1955	125.8	1959	147.6
1956	128.4	1960	148.6
1957	133.5		

Source: American Iron and Steel Institute, as reported in Steel Prices, op. cit., p. 186.

Table A27
United States Crude Steel Capacity Estimates

(millions of tons)

Year	ECE	Wall St. Jnl.	OBE	CEA	ECSC	Other
1961	148.8	150	151	151.6		
1962	149.4	157	153	154.6		
1963	151.0	162	155	157.7		
1964	153.8	165	157	160.8		
1965	156.5	168	159	164.0	162.8	
1966		174	161	167.3		
1967		184	163	170.6		155
1968			165	174.0		
1969			168	177.5		
1970			171	181.0	178.2	180

Sources:

ECE: United Nations Economic Commission for Europe, Steel Market Review, United Nations, New york, various years.

Wall Street Journal: As reported in Steel Imports, op. cit., p. 18.

OBE: Based on Office of Business Economics estimate of 1½% growth per year in Steel Prices, op. cit., p. 186.

CEA: Council of Economic Advisers estimate based on 2% growth per year in Report to the President on Steel Prices, op. cit.

ECSC: European Coal and Steel Community estimates in Steel Imports, op. cit.

Other: 1967 Iron Age estimate in Steel Imports, ibid.; 1970 Bethlehem estimate from Administered Prices: Steel, op. cit., p. 604.

Table A28
Capacity Utilization in the United States Steel Industry

(millions of tons)

Year	Quarter	Production	Capacity	Production / Capacity
1954	I	22.32	31.43	.710
1954	II	21.80		.694
1954	III	20.10		.639
1954	IV	24.05		.765
1955	I	27.31	31.45	.858
1955	II	29.89		.950
1955	III	28.57		.909
1955	IV	31.25		.994
1956	I	31.24	32.10	.973
1956	II	30.74		.958
1956	III	20.16		.628
1956	IV	32.44		1.011
1957	I	31.57	33.37	.947
1957	II	28.98		.869
1957	III	27.12		.813
1957	IV	25.01		.749
1958	I	18.79	35.17	.534
1958	II	18.96		.539
1958	III	21.31		.606
1958	IV	26.12		.743
1959	I	30.48	36.90	.826
1959	II	33.79		.916
1959	III	8.20		.222
1959	IV	20.96		.568
1960	I	34.74	37.15	.835
1960	II	26.01		.700
1960	III	19.64		.529
1960	IV	18.88		.508
1961	I	19.74	37.90	.521
1961	II	25.11		.663
1961	III	25.66		.677
1961	IV	27.48		.725
1962	I	30.63	38.65	.793
1962	II	23.46		.607
1962	III	20.52		.531
1962	IV	23.46		.613

Table A28 (cont'd.)

(millions of tons)

Year	Quarter	Production	Capacity	Production / Capacity
1963	I	26.69	39.42	.677
1963	II	32.55		.826
1963	III	24.29		.616
1963	IV	25.72		.652
1964	I	29.50	40.20	.735
1964	II	31.80		.791
1964	III	31.29		.778
1964	IV	34.47		.857
1965	I	35.04	41.00	.855
1965	II	35.57		.868
1965	III	32.82		.800
1965	IV	27.74		.677
1966	I	32.90	41.82	.787
1966	II	35.16		.841
1966	III	33.16		.793
1966	IV	32.83		.785
1967	I	31.63	42.65	.742
1967	II	30.50		.715
1967	III	30.35		.712
1967	IV	34.42		.807
1968	I	36.53	43.50	.840
1968	II	37.05		.852
1968	III	28.49		.655
1968	IV	27.98		.643

Sources:

Production: "Annual Statistical Review," The Iron Age, January 2, 1969, p. 128.

Capacity: Quarterly rates of capacity estimates made annually by the American Iron and Steel Institute and Council of Economic Advisers in Tables A26 and A27.

Table A29
Collective Bargaining in the United States
Steel Industry

(1954 - 1968)

Year	Negotiations Begin	Strike Deadline	Settlement Date
1954	May 18	June 30	June 29
1955	June 7	June 30	July 1
1956	May 28	June 30	August 3
1959	May 5	June 30	January 4[1]
1962	February[2]	June 30	March 31
1963	March 15	July 31	June 20
1965	March 28	May 1[3]	September 6
1968	May 5	August 1	July 20

Notes:

(1) January 4, 1960.

(2) Negotiations began secretly.

(3) Strike deadline extended to September 6.

Sources:

United States Department of Labor, Bureau of Labor Statistics, "Wage Chronology: United States Steel Corporation: 1937-1967," BLS Bulletin, No. 1603, July, 1968; United States Government Printing Office: Washington, D.C., pp. 3, 17, 23, 24, 30, 31; 42, 43.

The Iron Age, July 4, 1968, p. 81.

Table A30
Quarterly Periods of Steel Buying
Affected by Steel Labor Negotiations

Year	Quarter	Periods Affected	Imports (millions of tons)	Production
1954	I	0	.207	22.324
1954	II	1	.324	21.807
1954	III	0	.308	20.102
1954	IV	0	.254	24.058
1955	I	0	.253	27.316
1955	II	1	.319	29.890
1955	III	1	.364	28.578
1955	IV	0	.427	31.252
1956	I	0	.342	31.242
1956	II	1	.427	30.748
1956	III	1	.455	20.167
1956	IV	1	.591	32.441
1957	I	0	.433	31.595
1957	II	0	.367	28.988
1957	III	0	.259	27.120
1957	IV	0	.249	25.011
1958	I	0	.269	18.791
1958	II	0	.386	18.962
1958	III	0	.536	21.317
1958	IV	0	.644	26.120
1959	I	1	.791	30.488
1959	II	1	1.205	33.790
1959	III	1	1.191	8.201
1959	IV	1	1.436	20.961
1960	I	1	1.470	34.741
1960	II	0	.874	26.013
1960	III	0	.618	19.647
1960	IV	0	.607	18.880
1961	I	0	.461	19.741
1961	II	0	.714	25.117
1961	III	0	.805	25.668
1961	IV	0	.917	27.488
1962	I	0	.895	30.635
1962	II	1	1.046	23.463
1962	III	0	.994	20.523
1962	IV	0	.992	23.707

Table A30 (cont'd.)

Year	Quarter	Periods Affected	Imports (millions of tons)	Production (millions of tons)
1963	I	0	.888	26.593
1963	II	1	1.312	32.550
1963	III	0	1.531	24.293
1963	IV	0	1.403	25.725
1964	I	0	1.304	29.508
1964	II	0	1.565	31.806
1964	III	0	1.522	31.290
1964	IV	0	1.735	34.472
1965	I	1	1.747	35.043
1965	II	1	3.015	35.572
1965	III	1	2.868	32.824
1965	IV	0	2.563	27.745
1966	I	0	1.851	32.909
1966	II	0	2.559	35.164
1966	III	0	3.207	33.168
1966	IV	0	2.824	32.831
1967	I	0	2.367	31.637
1967	II	0	2.783	30.502
1967	III	0	2.869	30.358
1967	IV	0	3.285	34.423
1968	I	1	3.340	36.530
1968	II	1	4.709	37.056
1968	III	1	5.284	28.494
1968	IV	0	4.408	27.982

Sources:

Periods Affected: See text.
Imports: See Table A23..
Production: See Table A28.

Table A31
Man-Days Lost Due to Work Stoppages
in the Water Transportation Industry

(As a percent of total man-days per quarter.)

Year	Quarter	Man-Days
1954	I	.084
	IV	.038
1955	I	.012
	II	.025
	III	.046
1957	I	.034
1959	II	.040
1961	I	.002
1962	III	.021
1963	I	.109
1964	III	.005
1965	I	.291

Source: See text.

Table A32
The Share of Imports in the Domestic and International Market*

	Consumption / Imports	Production / Imports	Imports / World Imports
Belgium	2.6	9.1	.051
Canada	8.7	8.3	.038
France	4.0	4.2	.166
West Germany	6.0	7.2	.182
Italy	5.9	5.5	.103
Japan	138.7	161.9	.013
Luxembourg	2.6	9.1	.004
Netherlands	1.5	1.5	.080
United Kingdom	15.4	16.9	.051
United States	14.8	13.3	.309

Sources:

OECD, The Iron and Steel Industry, op. cit., 1964, 1966, 1968.

United Nations Statistical Office, Monthly Bulletin of Statistics, United Nations, New York, June, 1968, p. 54.

*Ratios of quantities expressed in metric tons.

Table A33
The Share of Exports in Domestic and International Markets*
(1967)

	Production / Exports	Consumption / Exports	Exports / World Exports	World Exports / Imports	Rest of World Exports / Exports
Belgium	1.2	0.2	.164	45.48	5.10
Canada	13.9	12.9	.013	44.58	na
France	3.3	2.3	.125	10.19	7.69
Germany	3.3	2.3	.237	9.32	na
Italy	8.7	7.7	.038	16.45	25.03
Japan	6.7	5.7	1.95	123.53	4.40
Luxembourg	1.2	0.2	.082	85.00	11.19
Netherlands	1.6	0.5	.046	21.20	20.67
United Kingdom	6.7	5.7	.075	33.10	12.20
United States	116.8	108.6	.022	5.54	na

na: not applicable

Source: Same as Appendix A32.

*Ratios of quantities in terms of metric tons.

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