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BY THE COMPTROLLER GENERAL

Report To The Congress

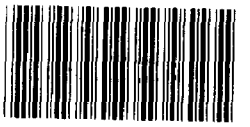
OF THE UNITED STATES

New Strategy Required For Aiding Distressed Steel Industry

Much of the U.S. steel industry today cannot compete with foreign producers and its production capacity has been shrinking relative to U.S. demand. As a result, the United States now imports a large share of its domestic needs. Because worldwide steel shortages are a distinct possibility by the mid- to late 1980s, this dependence could cause critical problems.

Past attempts by the Federal Government to aid the steel industry have not succeeded. However, GAO believes that the industry is potentially competitive with foreign producers and that a Government-led industry revitalization program is warranted.

Government leadership, though, must be met by a counter commitment from both industry and labor, all based on a generally agreed upon industry performance objective.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This report presents our analysis of problems facing the domestic steel industry and outlines the factors that should be considered in developing a program to revitalize the industry. The report recommends actions for Congress to take to establish a performance goal for the domestic steel industry.

We undertook this review as part of our ongoing efforts to improve the Nation's capabilities to meet the materials requirements of the national economy.

Copies of this report are being sent to the Assistant to the President for Domestic Affairs and Policy; the Director, Office of Management and Budget; and the heads of the Departments and agencies responsible for the matters discussed in the report

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

NEW STRATEGY REQUIRED FOR AIDING DISTRESSED STEEL INDUSTRY

D I G E S T

BACKGROUND

The U.S. steel industry faces serious problems. Approximately 25 percent of its physical plant is too old to compete efficiently with foreign producers, and its production capacity has been shrinking relative to domestic needs. Imports from a variety of foreign manufacturers have captured a significant share of the domestic steel market.

Since 1954, steel production has boomed outside the United States, up over 330 percent, while domestic production has increased by only about 50 percent.

Furthermore, in the last 20 years, effective domestic steelmaking capacity has barely increased while domestic steel consumption has risen 60 percent. As a result, domestic production has not met demand since 1960, and the United States has become dependent on foreign-made steel. Steel mill product imports now constitute 15-20 percent of total domestic consumption.

The problems confronting the steel industry have received wide attention and publicity, and prompted proposals from both private and public quarters, including the Federal Government. Indeed, the current Administration has recently announced its second set of policy and program initiatives to revitalize the domestic steel industry. GAO believes there is reason to doubt that these initiatives will bring about the needed recovery.

GAO makes recommendations to the Congress to help formulate an effective strategy to revitalize the steel industry.

BASIC FINDINGS

Risks Associated with Trends in Steelmaking Capacity

Currently, there is an international surplus of steelmaking capacity. However, if there is an

upturn in the global economy, competition for foreign production is certain to increase significantly. In the absence of increased domestic or foreign capacity, there may not be enough steel to supply all consumers. A number of steel experts have forecast that a global capacity problem may develop by the mid- to late 1980s. Under existing conditions, the U.S. steel industry lacks sufficient resources to modernize and expand its capacity to offset the risks of potential future global shortages. (See pp. 2-2 to 2-8.)

The U.S. Steel Industry Can Be Competitive

Competitive strength varies among components of the domestic steel industry and individual firms. The situation is not uniformly poor but a large segment of the industry, particularly associated with carbon steel production, has become unable to compete with efficient foreign producers.

Factors that most hurt the U.S. steel industry's competitive position, but which can be changed, are high labor costs, inefficiently sized plants, low utilization of capacity, and restrictive Government policies. (See chapter 4.) U.S. raw material costs, which are harder to change, are overall about the same as those of foreign steelmakers. Transportation costs give U.S. steel an edge in some domestic markets.

The important tangible factors affecting the industry's competitive position can be modified, but may not be sufficient to stop import penetration. Price differentials alone do not account for sustained domestic purchasing of foreign-made steel.

It has often been alleged that unfair pricing of steel products ("dumping") in the United States by foreign producers is the essential reason why domestic firms cannot compete with imports. GAO interviewed numerous U.S. firms that buy from foreign and domestic steel producers and was given many compelling reasons, in addition to price considerations, for purchasing foreign steel, including supply protection, reliability, quality, and marketing services and attitudes.

If American steel producers are to regain lost domestic customers, they will need newer and more productive facilities, and a more customer-oriented approach to marketing their products. The buyers believe industry revitalization must include a genuine desire to beat the competition not only in price but in quality, dependability, and services as well. Unless it demonstrates a more positive attitude toward customer needs, the U.S. industry is in danger of losing even more business. (See chapter 3.)

International Competitiveness Strengthened by Government Policies

Growing foreign steel capacity and the close relationships between foreign governments and their steel industries have generated much concern about the long-term consequences for the U.S. steel industry and its ability to compete in its home market. Various nations have provided their steel industries with preferential financing arrangements, loan guarantees, and various trade inducements. These nations have recognized the fundamental importance of a strong steel industry, and of attaining or maintaining export markets.

Any policy changes to help the U.S. steel industry become competitive must be designed against the backdrop of strong foreign government-supported steel industries. But such policy changes must also be sensitive to the possibility (discussed above) that overall foreign capacity may not be sufficient to provide a reliable supply source. (See chapter 5.)

U.S. EFFORTS TO DEVELOP A COMPREHENSIVE STEEL POLICY

In December 1977, the Administration responded to growing concerns over the industry's status. The Administration's basis for action, usually referred to as the Solomon report, recommended a variety of program and policy changes to provide relief to the industry and represented the first Federal effort to develop an explicit, comprehensive policy to promote steel sector competitiveness.

Although the report suggested an overall strategy, it did not produce adequate results. Concerning its specifics (examined in chapter 6):

--The trigger price mechanism to control imports, enforced laxly, was suspended when its prevailing administration proved incapable of forestalling antidumping suits.

--Faster depreciation came 2 years late and provided far too little in terms of adding to modernization capital.

--Loan guarantees have been hindered by legal challenges and geared mostly to pollution control.

--Administration of environmental policy was revised only to a limited degree.

--Clear joint-venture and merger guidelines were not developed.

--The Federal role in steel research and development was enlarged but in an ambiguous fashion.

--Finally, assistance to communities was not appreciably changed.

Antidumping suits filed in March 1980 against a number of European producers caused major concern over their implications for disrupting many types of international trade. They also provided impetus to serious deliberations by the President's Steel Tripartite Advisory Committee, a joint labor-management-Government group. These deliberations led to a series of recommendations to the President on action priorities to aid the steel industry. The Tripartite Committee report served as the basis for "A Program For The American Steel Industry, Its Workers And Communities," announced by the President on September 30, 1980. (See chapters 6 and 7.)

Unlike the Solomon Plan, implementation will require congressional review and sanction of most or all of the latest set of initiatives.

NEED FOR AND ROLE OF AN INDUSTRY PERFORMANCE OBJECTIVE

An effective policy toward steel can be characterized as having a core and peripherals. The core ought to represent the Nation's overall objective for the domestic industry's performance. The peripherals relate to the range of key factors which influence realization of core objectives--such as means for stimulating competition, assisting capital formation, or administering environmental regulations. The peripherals must be carefully formulated and drawn together so as to support the core. Without a core, Government efforts toward steel are guaranteed to be incoherent. But just as importantly, a core which is not well related to the peripherals is a hollow core.

Deriving a quantified performance goal for the domestic steel industry, in terms of efficient capacity, would require difficult choices among competing concerns. National security, balance-of-payments, and downstream industry needs individually would call for different capacity levels and would also have varying advantages and disadvantages as the industry grows or shrinks.

Thus, basic factors that should be considered when establishing such a performance goal include: the point beyond which national security will be compromised if capacity drops; a target market-share for domestic firms averaged over the course of the business cycle; a target ratio of capacity to peak domestic needs; and the extent to which steel's modernization and expansion needs can be met by attracting internal resources and outside capital without depending on Government assistance.

Suggested consideration of such factors in no way implies that Government should go about assuring the domestic industry any particular share of the market (except as national security may dictate measures to support some minimum level of capacity). Rather they are intended to help guide formulation of effective Government policy. Only an industry which can produce steel competitively will survive in the world environment in the long run. An explicit performance goal would help determine appropriate Federal means toward achieving the overall objective of a competitive industry.

The critical matter is the definition of a useful performance objective, not necessarily its form. Another potential definition comes from the industry itself and is reflected in the Steel Tripartite Advisory Committee report. The industry contemplates a long-term (25-year) investment program to achieve an efficient raw steelmaking capacity of 155 million tons through a 4-percent annual replacement rate for steelmaking equipment. The industry estimates a need for an additional $2 billion (approximately) annually for the first 5 ("catch-up") years of a revitalization program, following which it ought to be able to fund the replacement cycle from retained earnings. (See pp. 7-8 to 7-10.)

GAO believes the Solomon report strategy failed for at least three reasons:

--The plan contained only a very general statement of objectives, "to assist the steel industry in a manner which will stimulate efficiency and enable the industry to compete fairly." Thus, the plan lacked specific objectives for the industry, and there was no way of determining whether the solutions proposed could accomplish the task at hand.

--The Administration did not make a meaningful attempt to coordinate the various components recommended in the Solomon report and the agencies whose policies affect steel.

--The plan did not recognize the need for a counter commitment from the industry or its work force. (See pp. 6-14 and 6-15.)

These basic deficiencies must be avoided in future attempts to consider Government initiatives and policies toward the steel industry, and it is not apparent that the recently announced "Program for the American Steel Industry, Its Workers and Communities" succeeds in avoiding them. The announcement for the program reiterates a broad objective ("to assist the American steel industry in its efforts to modernize and regain competitive strength"), but defines no time period for goal accomplishment and does not reconcile component policy proposals. For example, GAO estimates that the program's elements directed toward the first

5-year capital shortage problem (depreciation schedule changes plus import limitations and deferred spending on environmental controls) will fall far short of capital needs associated with the industry's own target performance objective. Yet, imports are to be constrained through the trigger price mechanism for only a 3-5 year period, after which the industry is to have achieved competitive status through modernization investment.

These points are noted not simply to fault the Administration's steel program nor to endorse in any way the specific industry objectives defined for revitalization. They are rather intended to show that in the absence of a generally agreed upon performance objective for the industry it is just not possible to judge the adequacy of the set of proposals for industry revitalization, nor be able to suggest how they might be usefully amended.

GAO realizes that efforts to establish a performance objective must be accomplished carefully so as to avoid any commitment to preserving obsolete plant, operations or attitudes. But if the task is not carried out, and revitalization policies structured accordingly, then the inconsistent and inefficient policy "drift" and conflict of recent years is almost certain to continue. GAO believes the steel sector is too important to allow that to happen. In GAO's view a flexible performance goal system

--would provide a framework for judging the size and type of Government initiatives needed to improve the steel industry's competitiveness,

--can be used over time as a benchmark to measure the success or failure of initiatives, and

--over time would itself be subject to reevaluation. (See pp. 7-10 to 7-13.)

COMPONENTS OF A COMPREHENSIVE STEEL POLICY

GAO considers several basic justifications for reachieving and maintaining a major-sized domestic

steel industry (see pp. 7-13 to 7-25). The core of a national steel policy ought to be a quantitative, timeframed performance objective for the domestic steel industry. The supportive policies ought to be formulated for a range of important peripheral activities. GAO does not attempt to examine all important peripheral areas. For example, steel-related research and development, recently examined by the Office of Technology Assessment, is cross referenced where appropriate.

The comprehensive steel policy components addressed by GAO include

--wage and compensation restraint and labor-management commitment to a sound revitalization strategy,

--measures to induce the entry and growth of new competitors,

--accelerating depreciation rates,

--improving administration of environmental regulation,

--eliminating discriminatory price restraints, and

--creating a trade policy yielding predictable and acceptable effects on imports with a minimum of inflation.

GAO's analysis concludes by examining the likely need for new means of policy administration to insure that a necessarily interdepartmental, multi-faceted steel policy succeeds in promoting industry revitalization. (See p. 7-25.)

RECOMMENDATIONS

The Congress has an important role to play in formulating an effective strategy for revitalizing the domestic steel industry. Therefore, GAO recommends that the Congress:

1. Enact legislation requiring the Executive Office of the President or other appropriate Executive Branch agencies to undertake a bi-annual assessment of steel capacity conditions.

a performance objective would be rigid and cause a profound shift in the locus of economic (investment) decisionmaking.

GAO believes the "linkage" between its analyses and basic conclusions is clear. GAO pointed out explicitly that the major reason that the Solomon plan failed was the lack of any specific goals for the steel industry. GAO also explained that the same deficiency is present in the President's September 1980 program. CEA and the other agencies that disagreed with GAO's recommendation misinterpreted its intention. GAO revised Chapter 7 to further clarify its rationale for wanting a performance objective for the steel industry.

In recommending a legislatively established performance objective, GAO is not calling on Congress to mandate a rigid goal that would be imposed on the industry, nor suggesting a shift in steel sector investment decisionmaking. Rather, GAO is saying that the prospects for success of a program to aid the steel industry can be greatly enhanced if some benchmark or measurable objective is established. This is necessary to clearly define the kind of steel industry the program seeks to aid or create, to develop program provisions adequate to do the job, and to provide a benchmark against which the program's effectiveness can be measured. While GAO believes that the objective should be re-evaluated periodically, it needs to be stable enough to maintain the confidence of investors and policy administrators. (See pp. 8-6 and 8-7.)

2. Enact legislation to define a performance objective for the domestic steel industry.

3. Review the Administration's latest steel program in considering a performance objective for the domestic steel industry.

4. Consider the kind of labor and management commitments to industry revitalization which presently exist and/or which may be needed. (See pp. 8-4 and 8-5.)

AGENCY COMMENTS

GAO provided draft copies of this report to a number of Federal agencies for review and comment, and gave those comments careful consideration in preparing the final report.

Agency suggestions for specific revisions to either clarify or improve the accuracy of various sections were incorporated, where appropriate, in the final report. Review comments dealing with major policy aspects are summarized in chapter 8.

Industry Performance Objective

The most significant comments on the report involved GAO's recommendation that Congress define a policy guidance performance objective for the domestic steel industry.

The Council of Economic Advisers and other agencies disagreed with GAO's recommendation. It is worthy to note, however, that the Environmental Protection Agency, the Department of Defense, and the Federal Emergency Management Agency endorsed the concept and expressed their belief that establishing an industry performance objective would be a beneficial step towards revitalizing the domestic steel industry.

CEA stated it could not discern an adequate linkage between GAO's analysis and its basic conclusions. CEA also stated that goal setting, particularly congressional goal setting, would be an ineffective and unproven means for trying to revitalize a distressed industry. In addition, CEA assumed that

Contents

ABBREVIATIONS

AISI	American Iron and Steel Institute
BOF	basic oxygen furnace
BTU	British thermal unit
CEA	Council of Economic Advisers
ComECON	Council for Mutual Economic Assistance
CONSIDER	National Council of Iron, Steel, and Non-Ferrous Industries (Brazil)
ECSC	European Coal and Steel Community
EDA	Economic Development Administration, U.S. Department of Commerce
EEC	European Economic Community
EIB	European Investment Bank
ENA	Experimental Negotiating Agreement
EPA	Environmental Protection Agency
FTC	Federal Trade Commission
GAO	General Accounting Office
GATT	General Agreement on Tariffs and Trade
GNP	Gross National Product
IRI	Institute per la Reconstruzione Industriale (Italy)
LDCs	less developed countries
MITI	Ministry of International Trade and Industry (Japan)
OECD	Organization for Economic Cooperation and Development
OMB	Office of Management and Budget
OPIC	Overseas Private Investment Corporation

OTA	Office of Technology Assessment
R&D	research and development
Stelco	Steel Company of Canada, Ltd.
Sysco	Sydney Steel Corporation
TPM	trigger price mechanism

LIST OF TABLES

GLOSSARY

Alloy steel

So classified when the content of alloying elements exceeds certain limits or in which a definite range of alloying elements is specified.

Annealing

A metallurgical process using controlled heating and cooling to obtain desired physical properties (e.g., softening or improved ductility) in metals.

Band

A flexible ribbon of steel.

Bars

A finished steel product commonly in flat, square, round or hexagonal shape. Rolled from billets, bars are produced in two major qualities-merchant (or standard) and special.

Basic Oxygen Process

A pneumatic steelmaking process in which commercially pure oxygen is introduced by means of a lance or pipe into a vessel holding molten iron. A jet of pure oxygen is blown against the surface of the molten iron. In the resulting chemical reaction, the oxygen combines with unwanted elements in the molten metal which leave the bath as gases or enter the slag or scum of impurities on the surface of the molten metal.

Beam

A bar or straight girder used to support a span between two support props or walls.

Beneficiation

Process which improves the characteristics of iron-bearing materials prior to use. Its major forms are sintering and pelletizing.

Billet

A piece of semifinished iron or steel that is nearly square in section and longer than a bloom. Bars and pipes are made from billets.

Blast Furnace

A towering cylindrical structure used to convert iron ore into molten iron, also referred to as hot metal and pig iron. The blast furnace process consists of blowing great quantities of heated air up through a full furnace of descending ore, coke, and flux stone. The term "iron ore" may refer to sinter, pellets, or other commonly-used blast furnace ferrous burden material. The heat and carbon monoxide gas generated by the combustion of coke in the lower section of the furnace are utilized throughout its height in order to drive off moisture in the materials charged and reduce all the oxides of iron, manganese, silicon, and phosphorus.

Bloom

A semifinished product large and mostly square in cross section produced from an ingot. They are shaped into girders, beams (I, H, T and others) and other structural shapes.

Carbon Steel

Steel in which the mechanical properties of the metal are primarily dictated by the carbon content, is the highest tonnage product.

Coil

A finished steel product such as a sheet or strip which has been wound or coiled after emerging from a rolling mill.

Coke

The fundamental fuel consumed in the blast furnaces which make iron. Approximately 1,000 pounds of coke are consumed for every net ton of pig iron produced.

Cold Rolling

The passing of sheet or strip that has been hot rolled and pickled through cold rollers. Makes a product that is thinner, smoother and with a higher strength-to-weight ratio than can be made by hot rolling.

Continuous Casting

A process for the continous forming of molten steel directly into the form of slabs, blooms, or billets, thus eliminating the ingot stage and the necessity of primary hot-rolling operations.

Direct Reduction

Any process for reducing iron ore or oxides that bypasses the intermediate step of making hot metal or cold pig on the way to producing iron and steel. Traditionally, the reduction of iron ore has been accomplished by the blast-furnace and electric-smelting processes which yield a molten product (some of which is cast as pig iron) that contains about 4 percent carbon. Direct reduction reduces iron ore at a temperature below its melting point and yields sponge iron, a porous, low carbon (2 percent carbon maximum) metallic product, generally containing significant amounts of unreduced iron oxide (6 percent or more).

Dumping

Consists of several methods through which a higher cost producer can displace lower cost competitors. Two forms of dumping are: 1) price discrimination - the sale of products to an export market at prices significantly less than the home market prices for comparable products, and 2) the exportation of products for a sustained period of time at prices which are demonstrably below their full cost of production, including a reasonable provision for profit. Existing statutes and trade agreements provide guidance on how "dumping" is to be judged.

Electric Arc Furnace

An enclosed vessel heated by an electric arc and the resistance of the steel bath itself. Since heat is supplied by electricity, oxygen is not needed to support combustion. Since oxygen can be limited, expensive alloying elements can be added to the molten steel without appreciable loss by oxidation.

Fabrication

The cutting, punching, stamping, or otherwise forming trimmed sheet metal into shapes for use in end-products.

Ferroalloy

An iron alloy made to be used in the production of steel. Some of the necessary alloying elements can be made cheaper as an alloy of iron than the pure metals themselves. In essence, they are vehicles for carrying the necessary elements.

Flux

A substance used to prevent excessive oxidation and to promote the fusion of iron which involves the removal of impurities during iron and steelmaking, (i.e. limestone, dolomite, and fluorspar).

Galvanizing

Immersion of clean steel or iron in a bath of molten zinc to form a protective coating.

Greenfield Site

A wholly new plant from the ground up, including all auxiliary equipment.

High strength low alloy steel

Steel with chemical composition specially developed to impart better mechanical properties and greater resistance to atmospheric corrosion than is obtainable from conventional carbon structural steel.

Hot rolling

The passing of hot steel through pairs of steel rollers to form rolled steel sections such as strip, plate, structural shapes, etc.

Ingot Molds

A matrix for casting steel. A typical ingot mold varies according to the nature of the steel product to be rolled and may weigh from a half ton up to more than 250 tons in capacity. The mold may be square, rectangular, round, or polygonal in section, depending on the requirements of the final product.

Integrated Steel Mill

A mill which converts iron ore into a semifinished or finished steel product. Traditionally, this required coke ovens, blast and steelmaking furnaces, and rolling mills. A growing number of integrated mills use the direct reduction process to produce sponge iron without coke ovens or blast furnaces, and generally melt this together with scrap iron in an electric-arc furnace.

Jawboning

Informal attempts at restraining price increases (colloquial).

Metallurgical Coal

A type of coal suitable to the production of metallurgical coke, which generally contains less than 2 percent volatile matter and 85 to 90 percent fixed carbon.

Mill Scale

The oxide surface layer produced on steel during hot rolling.

Mini-Mill

A small non-integrated or semi-integrated steel plant, generally based on electric furnace steelmaking and continuous casting that produces a limited range of products (primarily concrete reinforcing bars, small channels, and angles) for sale in a limited geographic market (i.e., within a radius of a few hundred miles).

Open-Hearth Process

A process for making steel from molten iron and scrap. It is named for the hearth or floor of the furnace which is shaped like an elongated saucer. Heat is passed over the surface of the molten metal to maintain its temperature.

Pellets

A beneficiated form of iron ore shaped like small balls.

Pickling

Chemical removal of oxides and scale on steel to achieve a clean surface for further processing (i.e., painting, coating, and enameling).

Pig Iron

High carbon iron made by reduction of iron ore in the blast furnace.

Raw Steel

Steel in the first solid state after melting, suitable for further processing or sale, which includes ingots, steel castings, and strand or pressure-cast blooms, billets, slabs, or other product forms. Synonymous to crude steel.

Rolling Mill

Any one of the mills in which steel is squeezed or pressed into shapes under great pressure (i.e., slabbing mill, blooming mill, roughing mill).

Round Out

Increasing the capacity of an existing facility by correcting imbalances or differences in the capacities of its equipment or process.

Scrap Iron or Steel

Ferrous metallic material that is the waste of industrial production or objects that have been discarded. There are basically three kinds of scrap:

Home scrap-iron and steel left over and trimmed off within a steel plant.

Prompt industrial scrap - steel returned to the steelmaker by a customer after he has shaped his product.

Obsolete scrap (dormant) - steel that has been made into products, used, and then discarded.

Sintering

A process which combines ores too fine for efficient blast-furnace use with flux stone. The mixture is heated to form clumps, which allow better draft in the blast furnace. In addition, the flux incorporated as a binder is used in the iron-making process.

Slab

A wide semifinished product made from an ingot. Sheets, strip, plates and other flat rolled steel products are made from slabs.

Slag

Impurities which rise to the surface of molten steel and combine with the fluxes. It has by-product uses in metallurgy, construction, and agriculture.

Specialty Steel

A steel containing alloys which provide special properties as resistance to corrosion or to heavy load.

Stainless Steel

Iron-base alloys containing enough chromium to confer a superior corrosion resistance. The American Iron and Steel Institute has chosen 4 percent chromium as the dividing line between alloy and stainless steel.

Steel

An iron-base alloy malleable in some temperature range as initially cast, containing manganese, carbon and, in many cases, other alloying elements.

Steel Plates

Flat rolled products mostly rolled from slabs. In many instances, the thickness of the steel is reduced without controlling the straightness of the edges which must be trimmed by shears or cutting torches.

Steel Service Center

Warehouser and distributor of steel products. A steel service center, along with maintaining inventory, may also perform further processing such as slitting or shearing.

Strip

A steel product customarily much narrower in width than sheet and often produced to more closely controlled thicknesses. Formed in the same manner as sheet.

Tool Steels

Either carbon or alloy steel capable of being hardened and tempered to meet special requirements.

Trigger Price Mechanism

Established in 1978 to facilitate enforcement of U.S. antidumping law. Its principal features are a system of combining (1) calculating costs of foreign steel products, (2) monitoring and analyzing steel imports to facilitate detection of possible dumping, and (3) use of "self-initiated" investigations by Government when the monitoring system signals the possibility of dumping in a particular case. In effect, it established a minimum price for imported steel.

Tube

A hollow product whose cross section is completely symmetrical, round, square, rectangular, octagonal, or elliptical with sharp or rounded corners and with walls of uniform thickness except as affected by corner radii.

Wire

A finished, drawn, non-tubular product, of any cross-sectional configuration, in coils or cut to length. The term also includes a product of solid rectangular cross section, in coils or cut to length, with a cold-rolled finish.

CHAPTER 1

INTRODUCTION

Steel has long been considered the world's most important industrial material. For many decades it has accounted for more than 90 percent of the total production of all metals, including industrial metals, such as aluminum, copper, lead, and zinc, and precious metals, such as gold, platinum, and silver. Steel is one of the largest industries in the Nation, exceeded only by the automotive, petroleum, and food industries. 1/

Almost every item of military equipment contains steel components for which no acceptable substitutes are known. Its importance to national security was demonstrated during World War II, when U.S. industry supplied a large portion of the Allies' weaponry, earning the title, "the arsenal of democracy." In 1952 the President's Materials Policy Commission recommended special attention be given "prime essentials such as steel * * *." 2/

Steel's importance was reaffirmed in a December 1977 task force report to the President which stated that "The industry is one of the Nation's largest and is critical to its economy and security* * *." 3/

INDUSTRY CONDITION

In 1950, the United States was the world's largest producer of steel, supplying about one-half the world's needs. Since 1954 steel production outside the United States has grown rapidly. In that year, the world, less the U.S., produced 159 million net tons of raw steel. By 1979, the rest of the world had increased its steel production to 687 million tons, a 332 percent increase in 26 years.

However, U.S. steel production has only grown by about 50 percent since 1954, and since 1960 effective U.S. steelmaking capacity has barely increased. Consequently the United States cannot presently produce enough steel to meet the needs of all domestic users. Steel imports in the 1970's accounted for about 15 percent of annual consumption. Further, much of the domestic industry's physical plant is obsolete and needs replacement. Consequently, productivity is impaired and production costs are higher than for many foreign producers.

The boom in steel production throughout the world results, presently, in a global excess of steelmaking capacity. Steel is important to an industrialized economy such as the U.S.,

but is it important where U.S. supplies are produced? The answer to that question is central to the future of the domestic steel industry. In addition, if the American steel industry is to be revitalized, then several fundamental dilemmas must be addressed. For example:

--While Government limits on steel prices diminish potential profits, domestic steel prices have generally been higher here than abroad.

--While unrestrained imports reduce domestic profits, they also provide a useful spur in getting domestic producers to compete and modernize.

--While the industry's obsolete plant and equipment inhibit its competitiveness, retiring it without replacement could exacerbate both import dependency and the possibility of future shortages.

--While domestic industry has too many small plants to be efficient, further concentration amongst producers may conflict with antitrust laws and aggravate problems with consumer product selection and marketing services.

WHY WE REVIEWED STEEL

Since 1974, GAO has reported on a variety of materials-related problems. 4/ This has included the matter of minerals availability and the implications of dependence on foreign sources for critical minerals, such as chromium, bauxite, manganese, nickel, and tin. 5/ We have recommended that an institutionalized planning and policy process is needed to help assure the future availability of needed materials and to avoid severe shocks to the economy from rapid changes in their price and supply. 6/ We believe that materials-related problems of national consequence are already evident in minerals processing industries. 7/ Over the course of this period, the condition of the steel industry received much attention and discussion.

In December 1977 the Administration, responding to congressional, industry, and public concern, unveiled a comprehensive plan for assisting the steel industry. The basis for action, usually referred to as the Solomon report, affirmed that the U.S. steel industry faces a number of serious problems, and recommended a variety of program and policy changes to provide relief to the industry. These changes were designed to require no specific legislative measures. They pertained to:

--Establishing base prices for imported steel (the trigger price mechanism, TPM).

--Examining the feasibility of faster depreciation schedules.

--Developing a loan-guarantee program.

--Revising environmental regulations.

--Clarifying antitrust policy for mergers and joint ventures.

--Examining the adequacy of Federal research and development funding in the steel industry.

--Considering supplemental adjustment assistance to workers and communities affected by steel facility closures.

In view of the many serious issues raised by the Solomon report, and after consulting with the House Ways and Means Committee's Trade Subcommittee staff, the Steel Caucus, Federal agencies, the American Iron and Steel Institute (AISI), and various industry officials and analysts, we began a review of the steelmaking industry as a logical and timely extension of our prior work on factors affecting materials availability.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our review were to:

--Review steelmaking capacity trends and prospective steel mill product availability into the 1980s.

--Examine the initial and current reasons for U.S. steel buyers' decision to purchase foreign steel.

--Examine areas where the domestic industry has competitive advantages or disadvantages in steelmaking.

--Review other nations' current or past policies toward their steel industries, particularly in reference to increasing capacity and/or improving competitiveness.

--Describe the U.S. Government's past actions which directly affect the steel industry with emphasis on the effect of the Solomon report's recommendations.

--Reach conclusions on those aspects of the overall steel situation, and the related policy process, warranting priority attention by Congress.

Many studies of the domestic steel industry have been published. To avoid duplicating previous efforts, we drew upon previous studies as much as seemed feasible. For example, Fordham and Lehigh Universities, under contracts with the Department of Commerce, have also been studying the domestic steel industry. Fordham's study of coke use has been published. 8/ Lehigh's study, dealing with more general steel matters, has not.

Further, we contacted analysts who are expert in the steel industry, including those both in the financial community and academia. William T. Hogan, Director of Fordham University's Industrial Economics Research Institute, was included in our contacts. Peter F. Marcus, steel analyst at Paine Webber Mitchell Hutchins, Inc., was engaged as a consultant to help in our work.

We met with various U.S. Government, steel industry and steelworker union officials and reviewed congressional hearings, reports, testimony, current legislative material, trade publications, and media articles and analyses. We talked with representatives of major integrated producers and visited their steelmaking facilities as well as contacted officials of steel mini-mills to obtain their views. We also visited Canada to talk to officials of Government and two steel companies and observed their steelmaking processes. Additionally, we asked the American Iron and Steel Institute (AISI) to collect investment data from 12 major producers to see if steps taken under the President's December 1977 program have encouraged expansion and modernization. AISI also furnished data on whether these companies were taking advantage of provisions of the 1969 Revenue Act designed to encourage the installation of anti-pollution devices by permitting their depreciation over 5 years.

We sought to furnish new evidence of the problem facing the U.S. steel industry by interviewing numerous U.S. firms buying from foreign and domestic steel producers. We interviewed 101 steel customers, 83 of which were buying foreign steel at the time of our discussions. The derived data were used to evaluate the effectiveness of domestic steel producers' marketing strategies and to help explain the basis of our growing steel import dependence.

Simultaneous to our review, the Office of Technology Assessment (OTA) also conducted a major review of the steel industry. 9/ We were in continuous contact with their steel study staff for over a year and a half. Our review placed specific emphasis on (1) an evaluation of the effectiveness of past and current Federal programs and policies related to steel, and (2) an indepth evaluation of steel consumers and

their attitudes and concerns regarding problems of the domestic steel industry. In turn, OTA concentrated on the implications of current and future technology as a determinant of the international competitiveness of the steel industry.

The rest of this chapter provides a brief description of how steel is made. The remainder of the report is then organized by chapter in the same order as the reporting objectives listed above.

THE MAKING OF STEEL

Steel production requires mining industries to supply iron, coal, fluxes 10/, and alloys; the iron and steel producing industry itself; steel fabrication industries to transform semi-finished steel shapes into usable products; and a scrap industry to collect and process steel scrap for reuse in steel mills.

Steelmakers handle more materials per ton of finished product in a greater variety of ways than any other large-scale manufacturer. The United States is deficient in 25 of the 32 minerals federally classified as critical, and the steel industry uses more of these deficient minerals than any other industry. Depletion of the Nation's highest grade iron ore has necessitated the production of much domestic iron ore from taconite, a rock relatively poor in iron. The process of producing usable iron ore pellets from this material is energy intensive and increasingly expensive.

Scrap is another source of iron for steelmakers. The United States is amply endowed with scrap supplies, and exports a significant amount. However, traditional steelmaking processes cannot rely solely on scrap. Metallurgical coals, refined by steelmakers into coke to fuel blast furnaces, originate mostly from eastern underground mines. The United States has been a major producer and exporter of metallurgical coals.

Approximately 70 percent of U.S. raw steel production occurs in five States--Pennsylvania, Ohio, Indiana, Illinois, and Michigan. Relatively little (about 6 percent) is produced in the western States and consumers in the western U.S. market receive about 40 percent of their steel from foreign producers.

Integrated production

There are essentially three commercially feasible routes of producing steel--a hot metal route using the blast furnace for ironmaking and basic oxygen or open hearth steelmaking

furnaces; the direct reduction ironmaking furnaces linked with electric steel furnaces; and cold metal/scrap based steelmaking in electric furnaces. The predominant method is in "integrated" steel plants using the following production sequence:

1. Metallurgical-grade coal is baked to produce coke for the blast furnace operation. Valuable natural gases produced in the process are recovered for energy requirements throughout the mill.

2. Sintering operations reclaim iron ore "fines" (fine particles necessarily created in transporting and handling iron ore) and other iron-bearing materials resulting from various mill operations, by binding them together into chunks. The sinter plant, which recycles iron material, is a needed part of an integrated plant.

3. The blast furnace converts the iron ore, limestone, and coke into molten iron. The blast furnace is a huge steel cylinder, up to 300-feet high, lined with heat-resistant bricks. Once started, it operates at high temperatures--up to 3,700°F--for extended periods. Iron ore, sinter, coke, and fluxes are charged into the furnace near the top, and the molten iron is tapped at the furnace base, where it is promptly taken to steelmaking furnaces.

4. Steelmaking furnaces convert iron to steel. There are two primary types of furnaces in this route--the basic oxygen or the open hearth. Increasingly dominant is the basic oxygen furnace (BOF) which relies on a blast of high-pressure oxygen to generate heat. BOFs are productive; they can produce over 300 tons of steel in about 45 minutes. A disadvantage is they require a higher proportion of molten iron and can accept less scrap than the open hearth furnace. Before BOFs became predominant, the industry relied on the open hearth furnace, usually designed to operate with approximately equal proportions of molten iron and scrap. It consists of a shallow tub, or hearth, which is exposed to the sweep of flames emanating from gas jets. Typically, open hearth furnaces produce about 350 tons of steel every 5 to 8 hours.

Newer methods

The traditional integrated producer requires massive investments in coke batteries, sintering plants, blast furnaces,

and related facilities. These requirements can be substantially avoided or reduced by direct reduction technology or scrap-based electric furnaces.

Direct reduction of iron ore eliminates blast furnaces and coke ovens. Instead it produces highly concentrated iron pellets that can be substituted for scrap in a steelmaking furnace. Its development was described as an evolution in the industry which promises to reduce new plant capital costs and pollution. At present, though, adoption of direct reduction in the U.S. seems hindered because (1) its cost is not yet competitive with scrap, and (2) the best direct reduction processes require expensive natural gas.

The final alternative for producing steel is a "cold metal" route, whereby recycled scrap or direct reduced iron is refined into steel via electric arc furnaces. This process does not require iron ore or equipment such as coke ovens, sintering plants, or blast furnaces to refine it. Consequently, capital investment needs are greatly reduced. Electric arc furnaces are often used to turn scrap into a narrow range of low value products in so-called mini-mills. In 1978, however, a third of the Nation's electric furnaces were operated by fully integrated steel firms.

Processing of steel

Regardless of what method is used to produce it, at this state the molten steel must be solidified before further processing steps can take place. Traditionally, the molten steel is captured in large ladles and poured into ingot molds, where the steel is moved and allowed to cool and solidify. The steel ingots can then be removed from the mold, reheated, and rolled into semifinishing shapes in a primary rolling mill. These shapes are then converted to finished products by further processing.

Continuous casting is a growing technology that provides dramatic energy and labor savings and increases yield. Instead of reheating ingots, continuous-casting machines receive molten steel and solidify it in a continuous, water-cooled molding process into semifinished shapes.

NOTES TO CHAPTER 1

1/ "Steel at the Crossroads: The American Steel Industry in the 1980s," January 1980, American Iron and Steel Institute.

2/ President's Materials Policy Commission, Resources for Freedom, June 1952, Government Printing Office.

3/ "A Comprehensive Program for the Steel Industry," Anthony M. Solomon, Task Force Chairman, December 6, 1977. p. 2.

4/ "U.S. Actions Needed to Cope with Commodity Shortages," ID-74-37, April 29, 1974.

5/ "U.S. Dependence on Imports of Five Critical Minerals: Implications and Policy Alternatives," ID-75-82, January 29, 1976.

6/ "Learning to Look Ahead: The Need for a National Materials Policy and Planning Process," EMD-79-30, April 19, 1979.

7/ "The U.S. Mining and Mineral-Processing Industry: An Analysis of Trends and Implications," ID-80-04, October 30, 1979.

8/ "Analysis of the U.S. Metallurgical Coke Industry," Industrial Economic Research Institute, Fordham University, October 1979.

9/ "Technology and Steel Industry Competitiveness," Office of Technology Assessment, June 1980.

10/ Fluxes are agents used in steel making to remove impurities. The chief fluxes are lime or limestone, dolomite, and fluorspar.

CHAPTER 2

RISKS ASSOCIATED WITH TRENDS IN STEEL-MAKING CAPACITY

Once the dominant steel producer, the United States now depends partly on imported steel. It supplied over half of the world's raw steel before 1950, but foreign steel capacity has expanded rapidly. Today, the United States produces only about 17 percent of the world's raw steel and relies on imported steel to fill some of its own needs. The Nation's growing reliance on foreign producers could be exacerbated because some experts predict a steel shortage by the mid-1980's. If U.S. steelmaking is not expanded and modernized, Americans could be paying greatly escalated prices for steel and be increasing their dependence on foreign steel supplies.

Expanding and modernizing the U.S. steel industry will not be easy, however. Much of the domestic steel industry is not technologically up to date. Large outlays for environmental control have absorbed capital that might otherwise have been spent on modernization. Without the needed modernization, U.S. mills are at a competitive disadvantage. Accordingly, there have not been profits to attract investment capital for new facilities. Moreover, steel companies have been investing capital into non-steel businesses.

FROM EXPORTER TO IMPORTER

For about three-quarters of a century until the late 1940s, the United States was the world's largest steel producer. The post-War revitalization of the European and Japanese industries and the more recent development of Third World industries have relegated the United States to an ever smaller share of the world market. The changing relationship is evident in Table 2-1.

Meanwhile, domestic production has leveled off until it has fallen behind demand. The Nation now imports nearly one-fifth of the steel it uses.

Decreasing share of domestic market

While the United States could hardly have expected to maintain the lion's share of world production, it might at least hope to keep up with demand at home. However, as Table 2-2 shows, domestic production has not met demand since 1960.

The gap between production and consumption does not tell the whole import story, however, since the Nation is still

exporting 2 to 3 million tons a year. It has been importing significant amounts of steel since 1959, when domestic production was halted by a 4-month strike.

In the 1960s, foreign steel became increasingly available and generally at prices considerably below domestic steel prices. Hence, imports jumped from 4.7 percent in 1960 to 13.7 percent in 1969, about a threefold increase.

Imports reached a peak of 18.1 percent in 1978, and averaged about 15 percent of consumption during the 1970's.

CAPACITY SHORTFALLS POSSIBLE

Although the United States may not be self sufficient, the Free World currently has abundant steel to meet demand. For the 1980s, however, steel analysts and authorities have forecast (although not unanimously) shortages of Free World capacity, as well as U.S. capacity. Though the forecasts vary and may not always prove correct, many forecasters believe that a significant steel supply shortage is possible by the 1980's.

World supply and demand in the 1980s

William Hogan, S.J., the Director of Fordham University's Industrial Economics Research Institute, projected that world demand will outpace world steelmaking capacity by 1985. He assumed a 4 percent annual growth in world demand, placing it at 920 million metric tons by 1985. Other demand forecasts he cited project 1985 world steel demand from 890 million to just over 1 billion metric tons. He pegged world capacity as of May 1979 at 810 to 820 million metric tons. By 1985, he estimated, no more than 70 to 75 million metric tons can be added; hence, a maximum world steelmaking capacity of 895 million metric tons--or 3 percent less than demand--could be achieved.

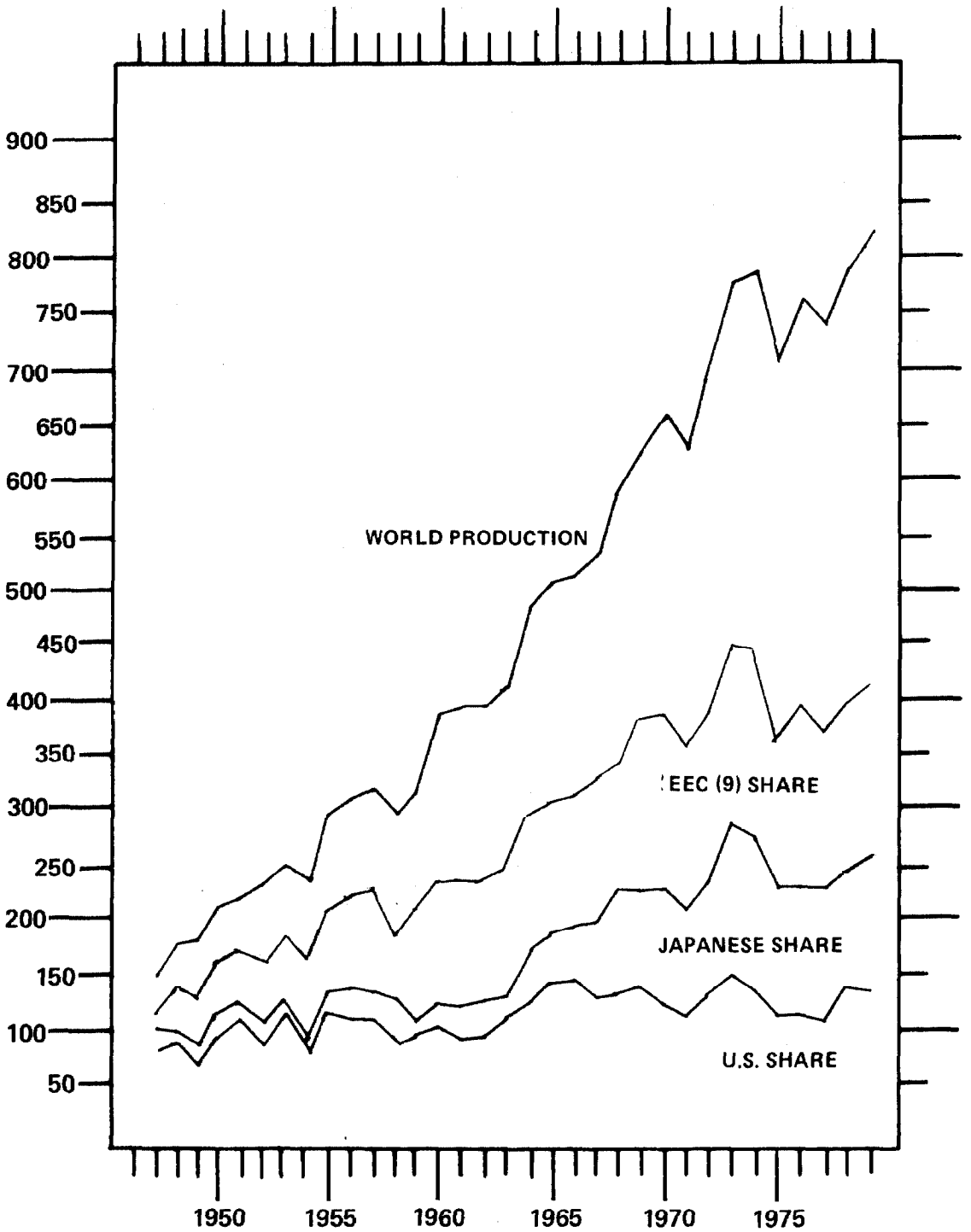
Since most demand estimates exceed the probable world-wide steel capacity forecasts, the Director concluded that if U.S. capacity is not increased

> "* * * steel consumers in this country will have a difficult time in procuring steel, and in times of tight supply, which are anticipated for the middle 1980's, will have to pay extremely high prices for any steel that is imported."

Free World conditions

Between 1960 and 1973, steel production in the Free World doubled, reaching 490 million metric tons in 1973 and

WORLD STEEL PRODUCTION 1947-77
(in millions of tons)



SOURCE: International Iron and Steel Institute,
American Iron and Steel Institute

Table 2-1

DOMESTIC PRODUCTION AND CONSUMPTION TRENDS

1959 - 1979

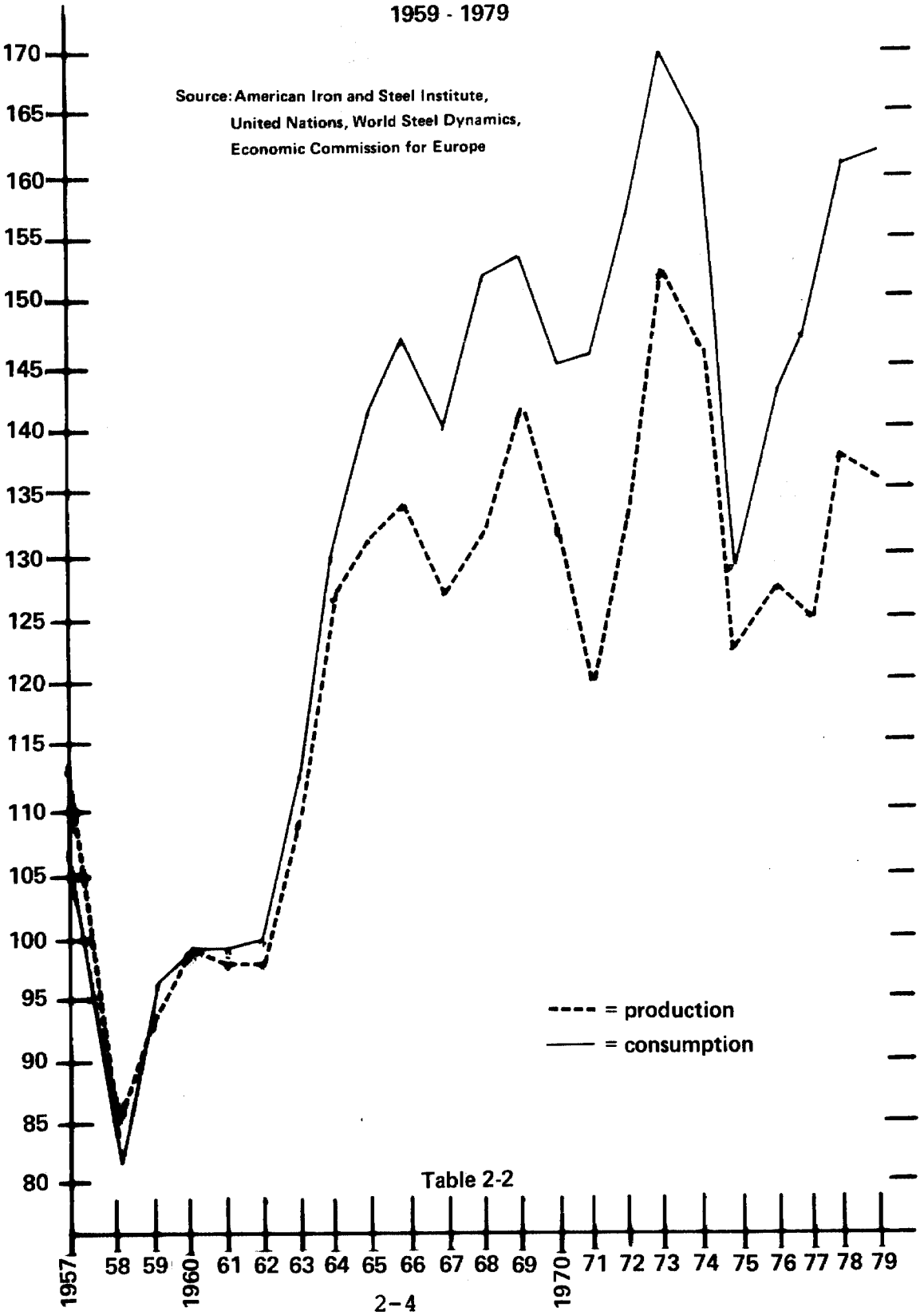


Table 2-2

495 million metric tons in 1974. Output in 1975 fell to 424 million metric tons but recovered to 488 million metric tons in 1979. Normal capacity in 1979 was 650 million metric tons.

Projections vary for capacity and consumption growth in the years ahead.

--A Central Intelligence Agency report concluded that excess capacity and low operating rates will continue through 1985. It developed two scenarios. In one, sharply rising energy costs would keep average annual economic growth to 1.5 percent, resulting in a demand for 529 million tons. In the other, a more optimistic energy forecast would allow average annual economic growth of 3.5 percent, increasing demand to 583 million tons. In both cases, expected capacity of 730 million tons would well exceed demand.

--In October 1979, Peter F. Marcus of Paine Webber Mitchell Hutchins, Inc., predicted, on the other hand, that Free World steel demand will grow about 3.3 percent per year in the 1980s. Free World gross steelmaking capacity will expand at best by about 1.8 percent a year through the mid-1980s. In projecting capacity and demand relationships, Marcus reduced gross steelmaking capacity to "effective capacity" that would be brought into production at nonshortage steel prices. Marcus projected Free World capacity and demand relationships through 1990.

Table 2-3

Free World Capacity and Demand
Yearly Estimates to 1990

	1980	1985	1990
	(millions of metric tons)		
Gross steelmaking capacity	665	727	795
Effective capacity	565	618	676
Demand	505	606	713
Reserve capacity	60	12	(37)

Source: World Steel Dynamics.

Based on the relationship of reserve capacity to demand, Marcus expects that steel will be premium priced in the world steel export market by the mid-1980s.

--In April 1979, Chase Econometrics predicted steel demand would increase at an annual rate of 4 percent between 1977 and 1986, and 2.7 percent between 1986 and 1990. Steel capacity would increase by 1.7 percent a year during 1977-86, and 2.1 during 1986-90. These projections lead to the following relationship.

Table 2-4

Free World Capacity and Demand to 1990

	1977	1986	1990
	(millions of metric tons)		
Capacity	625	730	794
Demand	430	614	683
Utilization rate	68.8%	84.1%	86.0%

Source: Chase Econometrics.

Chase concluded that the utilization rates point to a generally tight market for steel worldwide, with rising prices which will spill into the U.S. market. The projections imply further that U.S. industry operating rates will remain relatively high in the 1980s.

--In contrast, Kimiro Suzuki and Tudor Miles, in a paper delivered to the February 1980 Organization for Economic Coordination and Development (OECD) steel conference, predicted that world steel capacity utilization would rise by mid-decade, to the 93-98 percent level, without triggering shortages.

Table 2-5

Free World Capacity and Output in 1978 and 1985

	1978	1985
	(millions of metric tons)	
Gross Capacity	643	704
Effective Capacity	569	622
Output	465	578-607
Utilization	82.0%	93-98%

Both Peter Marcus and these authors predict the same growth rate in shipment and nominal capacity. Marcus, however, predicts a shortage because he believes that effective world steelmaking is falling further behind as a ratio of nominal capacity. Suzuki and Miles, in addition, foresee that increases in yields will allow moderate production increases in shipments without so much growth in raw steel production.

Capacity shortfalls in the United States

If it had to, the United States could not now supply its own steel needs. A major automaker told us that if all U.S. mills operated at capacity in 1978, 8-1/2 percent of steel products consumed domestically would still have to be imported. By 1985, according to this same automaker, this reliance will grow to 18 percent. This projection assumes domestic capacity will grow at half a million tons per year, while consumption will grow at 2.1 percent, with steel used in automobiles staying constant through 1985 and our mills operated at full capacity.

Peter Marcus sees the domestic capacity shortfall worsening. By 1990 he believes our capacity shortfall will be nearly twice the tonnage shortfall of 1978, as follows.

Table 2-6

Domestic Steelmaking Capacity Shortfalls
Yearly Estimate to 1990
(Crude Steel Equivalent Basis)

	1978	1980	1985	1990
	(millions of metric tons)			
Gross steelmaking capacity	143	142	142	142
Effective capacity (note a)	132	131	131	131
U.S. consumption	144	135	161	175
U.S. production	124	113	136	136
Capacity shortfall	20	22	25	39

a/Effective capacity is that capacity that will be brought into the production stream at nonshortage steel prices. It is equal to no more than 85 percent of gross steelmaking capacity.

Source: World Steel Dynamics.

The Marcus projections are based on an annual increase in domestic steel consumption of 2 percent, with minimal capacity

additions. U.S. production would exceed effective U.S. capacity in 1985 and 1990 because a steel shortage is forecast and premium prices will be paid for steel in the world export market.

The Director of Fordham University's Industrial Economics Research Institute believes domestic capacity would need to be between 153 million and 155 million metric tons by 1985 to adequately serve the Nation's demands. This would require an additional 9 million to 10 million metric tons of steelmaking capacity. Otherwise, he believes, the U.S. will have to pay extremely high prices for any steel that is imported.

Chase Econometrics, in its April 1979 report, sees U.S. steel capacity utilization increasing significantly by 1990 to meet expected demand. Because domestic capacity increases are not expected to match demand increases, Chase concluded the United States "will become more susceptible to the vagaries of world markets, especially with regard to price."

Forecasted shortages do not always occur

A sharp rise in the demand for steel occurred in 1973, and the high level continued through most of 1974. In May 1974, Business Week reported "shortages will last for up to 5 years, and there will be pricing havoc." 1/ At the same time, major U.S. steel producers announced plans to build about half the 25 million tons of additional raw steel capacity they believed the Nation would need by 1980.

Seven months later, Business Week reported that world demand had been decreasing since late in the third quarter of 1974, and there had been a sudden softening of the U.S. economy. 2/ As a result, U.S. producers were contemplating production cuts and worrying about competition from foreign steel imports. Nonetheless, some experts thought demand would return to the record levels of 1973-1974 by late 1975.

In retrospect we can see that very little of the announced capacity additions materialized, and that the forecast shortages did not occur. Further, the concern over steel prices centered on alleged dumping at unreasonably low prices by foreign steel firms rather than price gouging resulting from shortages. The forecasts of worsening domestic steel capacity shortfalls appear realistic to us; however, we note that such conditions are not always predictable. Nevertheless, if trends continue as predicted, conditions pose a potentially risky situation for the United States. A principal reason for this can be attributed to the growing obsolescence of U.S. steelmaking facilities which are discussed below.

OBSOLESCENCE IN THE U.S. INDUSTRY

A major obstacle to meeting domestic demand is the obsolescence of much of U.S. steelmakers' equipment. It is considered technologically out of date, costly to operate, and inefficient. According to the Director of Fordham University's Industrial Economics Research Institute, 25 percent of domestic steel capacity needs replacement.

Canadian steel firms turn over their depreciable facilities every 23 years on the average, while the U.S. steel industry does so every 40 years. According to the American Iron and Steel Institute, the most desirable turnover period is 25 years.

Another indication that domestic steelmaking facilities are old and in need of replacement can be seen by comparing U.S., Japanese, and European companies' processes.

Table 2-7

Steelmaking Processes Used in 1978

	U.S.	Japan	European Economic Community
	(percentage of use)		
Furnaces:			
Open hearth	15	-	7
Basic oxygen	61	78	70
Electric	24	22	23
Solidification:			
Ingots	86	54	71
Continuous casting	14	46	29

Source: International Iron and Steel Institute.

The table shows that the domestic industry relies more heavily on the older, less efficient open hearth furnace and ingot casting methods. Japan's continuous-casting capacity exceeds 46 percent and is expected to reach 70 percent within a few years.

A 1978 study by McGraw Hill concluded that the domestic steelmaking sector's stock of plant and equipment is more outmoded technologically than that of any other major American manufacturing industry. The steel companies surveyed considered 26 percent of their plant and equipment technologically obsolete. The study estimates that $32.4 billion would be needed just to replace outmoded facilities.

INSUFFICIENT INVESTMENT IN STEEL

To replace its outmoded equipment, the domestic industry needs large amounts of investment capital. Unfortunately, the industry's profits have not been sufficient either to generate this capital or to attract investments from the outside. Further, the major producers are approaching the limits of their ability to borrow, and those funds that have been invested in steel recently have gone increasingly for pollution control and other needs that have not added to capacity. The low profit margin and high non-productive investment requirements have encouraged steel companies to invest in diverse industries. The data in Table 2-8 show an industry group estimate that productive investment needs are currently $4.9 billion a year. Productive investment, however, has been only $2.1 billion a year during the past decade. 3/

Investment needs

In January 1980, the American Iron and Steel Institute (AISI) outlined the domestic steel industry's capital requirements through 1988. They estimated capital expenditures during 1979-88 would have to total about $57 billion (1978 dollars) or about $5.7 billion a year.

Table 2-8

Capital Expenditures Needed for Steel Through 1988

	Yearly	Total
	(in billions)	
Replacement and Modernization of Present Steel Capacity	$4.4	$44
Additional Steel Production Capacity	.5	5
Environmental Control and Industrial Health Facilities for Existing Plant	.8	8
Total	$5.7	$57

Source: American Iron and Steel Institute.

If this estimate is realized, AISI anticipates 10 million net tons of new raw steel capacity and a similar additional capacity increase derived from improved production yields.

Other authorities have similarly predicted a need for increased capacity to stem the tide of imports.

--The Department of Commerce, in a May 1979 report, suggested that growth in domestic steel consumption will slow to about 2 percent a year. At this lower rate, holding imports to 15 percent of U.S. consumption will still require an increase in capacity of 21 million tons by 1990.

--The Director of Fordham University's Industrial Economics Research Institute told us the Nation could use an annual increase of 10 million tons of steelmaking capacity for at least the next 5 years. He feels it is important to reduce our dependence on imported steel to no more than 10 to 13 percent of our consumption.

Low profits plus heavy debts equals little investment

For a number of years, the U.S. steel industry has not achieved sufficient profits to meet its investment needs. Even though the major companies have borrowed widely, they have not been able to generate the necessary financing, either from their own cash flow (profits plus depreciation) or from investors or lenders. Plans for expanding capacity have been postponed.

Low profit rate discourages investment

Steel industry officials noted that a favorable profit rate over a sustained period was essential to encourage capital investment. One steel company president believes that at least 5 to 6 percent return on sales would be needed to encourage investment. According to a chief financial officer for another steel company, the rate should be closer to 10 percent than 5 percent. The following table compares increases in capacity with return rates from 1950 through 1977.

Table 2-9

Comparison of Profit to Capacity Additions

Period	Return on sales	Increases in capacity
	(percent)	(millions of net tons)
1950-59	6.5	47
1960-69	5.3	6
1970-76	4.1	5
1977-79	1.6	-5

Sources: American Iron and Steel Institute; Department of Commerce.

An example of this relationship can be found on the shores of Lake Erie. The Steel Company of Canada, Ltd. (Stelco), is presently constructing a new 1.3 million ton integrated mill at Nanticoke, Ontario, on the north shore. From 1968 through 1978, Stelco's rate of return was 7.7 percent. On the south shore, U.S. Steel, whose return during the same period was only 4 percent, has postponed its plans for a 3 millon ton integrated mill at Conneaut, Ohio.

According to published data, the U.S. steel industry derived a yearly average of only $2.47 billion from profits and depreciation during 1970-79.

Table 2-10

Capital Generated Internally
by the Steel Industry--1970-79

Year	Profits after taxes	Depreciation	Total
	----------(in billions)----------		
1970	$ .53	$1.04	$1.57
1971	.56	1.08	1.64
1972	.78	1.17	1.95
1973	1.27	1.26	2.53
1974	2.48	1.33	3.81
1975	1.60	1.27	2.87
1976	1.33	1.39	2.72
1977	.02	1.52	1.54
1978	1.28	1.71	2.99
1979	1.20	1.88	3.08
10-year average	$1.11	$1.36	$2.47

Source: American Iron and Steel Institute. Applies to firms representing 90 percent of the industry.

The recent trends shown in this table demonstrate that internal capital generation would be insufficient to meet the projected $5.7 billion needed annually for modernization investment.

External sources of capital
are running dry

Without adequate profits, steelmakers must turn elsewhere for investment funds. However, the prospects for new stock issues or loans are unattractive.

There have been few opportunities to acquire capital by issuing stock in recent years. According to an AISI representative, U.S. Steel Corporation issued a convertible debenture in 1976; Inland Steel marketed a common stock issue that same year; and more recently Wheeling-Pittsburgh sold preferred stock to its employees. At one point in the late 1950s, the market values of common stocks for the domestic steel industry averaged 60 percent above book value. 4/ Steel stocks began to fall in 1959 and reached a low point in 1971, when their market value was less than 50 percent of their book value. To issue new stock at a price well below its book value would dilute the value of the shares already sold and thus would meet opposition from current stockholders. Market values of common stocks remained significantly below the book values at the end of 1979. For example:

Table 2-11

Book and Market Value - Common Stock
Six Major Steel Companies
as of December 31, 1979

	Per Share		
Company	Book value	Market value	Annual dividend
U.S. Steel	$56.42	17-1/2	$1.60
Bethlehem	58.87	21-1/8	1.60
Republic	92.02	24-3/8	2.00
National	74.35	26-1/2	2.60
Inland	62.52	31-5/8	2.80
Armco	37.98	25	1.50

Source: 1979 Annual Reports and New York Stock Exchange Quotations, December 31, 1979.

One analyst predicted that the steel industry would not attract investors unless there was a steady growth in domestic consumption, a significant drop in steel imports, and a drastic reduction in old capacity.

If they cannot market stock, companies must rely more heavily on long-term borrowing to secure capital. There are, however, practical limits to this source. The cost of borrowing has been high; moreover, some companies are already heavily in debt and many analysts believe that they should not extend themselves further. The general increase in industry debt can be seen by comparing long-term loans to total capital.

Table 2-12

Steel Industry Increases in Long-Term Debt
1949-79

Year	Long-term debt	Total capital	Debt to capital ratio
	(billions)		(percent)
1949	$ .7	$ 5.6	12.5
1959	2.3	12.5	18.4
1969	4.6	17.4	26.4
1979	9.2	27.6	33.3

Source: World Steel Dynamics.

A 1979 accounting firm survey cited increasing debt ratios of specific domestic steel companies.

Table 2-13

Debt Increases For Major Steel Producers

	Debt to equity ratio a/ 1974	1978
	(percent)	
United States Steel Corp.	30.2	41.6
Bethlehem Steel Corp.	26.1	42.2
Armco, Inc.	24.5	30.9
National Steel Corp.	33.9	52.0
Republic Steel Corp.	21.5	31.8
Inland Steel Company	41.4	52.0
Wheeling-Pittsburgh Steel Corp.	30.6	52.9
Kaiser Steel Corp.	38.7	72.1
McLouth Steel	34.8	71.2

a/long-term debt divided by long-term debt plus shareholders' equity.

Sources: The Steel Industry of America;
Price Waterhouse and Company.

The limits of long-term borrowing are not certain; however, a steel industry official said they had almost been reached. A lot depends on profits, he said, along with the prospects. However, in an industry such as steel, where demand fluctuates, debt beyond 35 percent is hard to justify since high overhead

and interest costs persist while demand (and thus income) is low. In April 1978, Peter Marcus observed that "with long-term debt up to 50 percent of equity for the six majors ($4.9 billion versus equity of $9.8 billion) at year-end 1977, the steel companies are near the upper limit of their borrowing limit." 5/

Few additions to capacity

Domestic steelmaking capacity grew very little in the past two decades. The U.S. steel industry emerged from World War II with facilities capable of producing one-half of the world's steel output. Its 100 million-ton capacity was expanded by about 50 million tons in the 1950s--all open hearth, and mostly at existing mills. One new plant, the fully integrated Fairless Work in Pennsylvania with a 4.4 million net ton capacity, was built by U.S. Steel Corporation in that period. In the 1960s there was a net increase in domestic steelmaking capacity of about 6 million tons and in the 1970s the net increase was about 5 million tons.

Examples of substantive additions are:

--Burns Harbor integrated greenfield site in Indiana (5 million tons) by Bethlehem Steel.

--An expansion of 2 million tons at Inland Steel's Indiana Harbor plant.

On the other hand, plans for several major additions have either been dropped or deferred indefinitely:

--Bethlehem Steel abandoned plans for an integrated 6 to 7 million ton greenfield site at Pinole Point, California, and indefinitely deferred an addition of up to 5 million tons at its Burns Harbor plant in Indiana.

--National Steel put off an addition of 2.3 million tons at its Portage, Indiana, plant.

--U.S. Steel deferred indefinitely an integrated 3 million ton greenfield site at Conneaut, Ohio.

--Jones and Laughlin abandoned plans for an integrated greenfield plant in Illinois.

Although big steel mill construction is stagnating, some hope is offered by mini-mills, over 20 of which have been built since 1960. Mini-mills typically are placed strategically near scrap resources, serve a specific market, and employ

electric furnaces and continuous casting. Their major products include merchant bar, reinforcing bar, wire, and some plate. As of 1978 over 50 mini-mills operated in the United States with a combined capacity estimated at about 13 million tons. Another six mini-mills were scheduled for construction during 1979-80, adding 1.8 million tons of new capacity. Companies possessing or expected to have at least one-half million net tons of mini-mill capacity by 1980 are:

Table 2-14

Mini-Steel Mills With Over One-Half Million Ton Capacity as of 1980

	Raw steel capacity (million net tons/year)
Atlantic Steel Co.	.7
Florida Steel	.8
Georgetown Steel (A Korf Group Co.)	1.1
North Star Steel (A Cargill subsidiary)	1.0+
Nucor Steel	1.0
Connors Steel Co.	.5+

Sources: McGraw-Hill, Inc.; Standard and Poors.

Steel companies are investing elsewhere

In outlining the capital requirements of the domestic steel industry by 1985, AISI estimated that steel companies will invest about $560 million annually in businesses other than steel production. Examples of recent steel company diversification include National Steel's decision to purchase United Financial Corporation of California for $254 million and U.S. Steel's joint venture to build a $1 billion petrochemical complex. However, the steel industry has frequently cited significant other capital investments, chiefly for environmental control, as "not productive" and detracting from its potential for investments in modernization and expansion.

For example, average annual pollution control capital expenditures increased from $180 million for the ten year period ending in 1975 to almost $500 million since 1975. To aid us in comparing the industry's productive and other steel investments with those for diversified operations, AISI* collected data for us from 12 large domestic steel companies that accounted for 77.4 percent of the Nation's raw steel production in 1978.

*The data provided by AISI may be understated because of delays in incorporating new information.

Table 2-15

Capital Investment Activity for 12 Steel Companies
1974-1980

(in billions)

	Steel operations (note a)	Percent (note b)	Non-Steel operations (note a)	Percent (note b)	Total (note a)
Productive investment					
1974	$1.292	69	$.374	20	$1.666
1975	1.959	67	.540	19	2.499
1976	1.986	68	.462	16	2.448
1977	1.684	65	.448	17	2.133
1978	1.408	58	.507	21	1.915
1979 (estimated)	1.615	58	.477	17	2.092
1980 (estimated)	1.727	61	.420	15	2.147
Other investment					
1974	$ .204	11	$.008	0.4	$ .211
1975	.387	13	.023	1	.411
1976	.432	15	.020	1	.452
1977	.450	17	.018	1	.468
1978	.514	21	.011	1	.526
1979 (estimated)	.676	24	.019	1	.695
1980 (estimated)	.649	23	.039	1	.688
Total investment					
1974	$1.495	80	$.381	20	$1.877
1975	2.346	81	.563	19	2.909
1976	2.418	83	.482	17	2.900
1977	2.134	82	.467	18	2.601
1978	1.923	79	.518	21	2.441
1979 (estimated)	2.292	82	.496	18	2.788
1980 (estimated)	2.376	84	.459	16	2.835

a/Some amounts may not add due to rounding.

b/Expressed as a percentage of the total.

Source: American Iron and Steel Institute.

The data, which we did not verify, indicates

--These companies are spending an increasing portion--presently nearly 25 percent--of their steelmaking capital budgets for investments that do not add to their productive capacity.

--Diversification investments have remained fairly constant during the period covered.

--Diversification represents about $500 million, or nearly one-fifth of the companies' investments on an annual basis.

Although investments in the "other" category divert capital that could increase productive capacity, the steel industry continues to devote significant amounts of capital to investments in non-steel making businesses.

CONCLUSIONS

The U.S. cannot presently produce sufficient steel for its own needs. Currently, there is an overcapacity in global steelmaking but increasing reliance on steel imports entails a notable risk in the light of potential free-world steelmaking capacity shortages by the mid-1980s.

Annual investments in new domestic steelmaking capacity and modernization of existing plants during the past decade have only been about half the estimated future need level. However, the steel industry has continued to invest significant amounts of money in non-steel businesses. The basic investment situation is not expected to change unless the prospects for greater profit margins in steelmaking improve. An extension of existing trends indicates that the domestic capacity expansion required to avert forecasted supply and price problems may not take place. This could place the country in an increasingly vulnerable position, both economically and strategically. (See Chapter 7).

CHAPTER 3

WHY U.S. FIRMS BUY FOREIGN STEEL

Domestic steel consumers are using products from many foreign producers. We contacted over 100 domestic firms to gain insights as to why foreign-made steel is purchased. We found that decisions to purchase foreign steel not only depend upon price considerations, but also on quality, supply protection, and marketing services and attitudes. In cases where consumers bought foreign steel, it was frequently because foreign mills performed better in many or all of these areas.

A NOTE ABOUT METHODOLOGY

Random sampling was not used in our survey because we had no way of knowing the total number and identity of U.S. firms currently consuming foreign steel. In selecting companies to contact, we sought wide geographical coverage as well as a representative range of steel consumption. Of our contacts, 83 respondents included a wide range of size and manufacturing types utilizing the principal steel mill carbon products, including sheet, plate, tubing, merchant bar, and other mill products. Included in this number were 22 steel service centers who purchase directly from steel mills and perform limited processing operations before selling the products to their customers. Also we held discussions with 18 domestic firms not presently purchasing foreign steel. Five firms, believed to be presently purchasing foreign steel, declined to hold discussions with our representatives.

INITIAL INDUCEMENTS

Most of the importing firms we contacted were purchasing foreign steel before 1975, several since the 1950s. The preponderant reasons for their initial purchases were lower purchase price (55 percent) and lack of product availability in the United States, i.e., supply protection (about 30 percent).

In the earliest case we identified, a company purchased steel from overseas in 1946 because of shortages in the United States and a lower price for imports. It has imported steel continuously since then. In addition to the price advantage, events such as strikes, diminishing or insufficient mill capabilities, and product shortages in periods of high demand have caused domestic firms to look overseas for steel. Their favorable experience often resulted in an enduring supply source. For example:

NOTES TO CHAPTER 2

1/Business Week (May 11, 1974), p. 18.

2/Ibid, (December 14, 1974), p. 27.

3/American Iron and Steel Institute (1969-1978 expenditures stated in 1978 dollars).

4/Market value is the selling price of a stock; book value is the shareholders equity per outstanding common share.

5/"World Steel Dynamics Core Report", p. 12-2.

frequently 50 percent to 75 percent ($100 to $150 per ton) above domestic steel prices. All told, he continued, American steel users paid some $1.6 billion more for imported steel during 1974 than they would have paid if sufficient American steel had been available.

We asked the domestic steel consumers to describe their experiences with foreign versus domestic steel in the 1973-74 period. We found a mixed and inconclusive response. One large industrial firm stated that they directly paid an estimated $30 million in premiums and their suppliers paid another $55 million. Many related that it was tough or impossible to purchase domestic steel. Nearly a third said they had to pay premiums to foreign companies to secure steel. However, some felt that the higher foreign price was merely a function of the market system. During this period wage and price controls were in effect and this kept domestic prices artificially low. About one-third of the companies stated that U.S. mills placed them under allocation based on a percentage of their past purchases. In addition, 16 companies related that they had to pay premiums to secure domestic steel. For example, a scrap surcharge of $20 a ton was added to the price to compensate producers for high scrap prices in this period. Our discussions with these consumers indicated that not all mills imposed the surcharge nor were the surcharges uniformly levied.

Buyers said the shortage taught them the necessity of maintaining different sources, including foreign steel mills, to assure themselves of a supply. The buyer's comments further indicate a need for the United States to have sufficient domestic capacity to maintain a stable market and adequate supply of this basic commodity.

REASONS FOR USING FOREIGN STEEL

We asked for primary as well as secondary reasons for domestic firms purchasing foreign steel. Steel users responded as follows:

--A steelworkers' strike in 1959 caused a West Coast firm to turn to Japan for galvanized and cold rolled sheet products. They said Japanese steel has cost an average of 10 to 15 percent less than the domestic product. Further, they consider the Japanese payment terms, delivery, and services provided, to be better than those available from domestic sources. They buy about 70 percent of their annual requirement of 6,000 tons from Japanese firms. Seven other U.S. companies stated that steelworkers' strikes caused them to begin importing steel.

--A midwestern firm turned to the British in 1967 for carbon steel billets after one of their two domestic sources stopped production. It presently buys about 18,000 tons yearly, or 20 percent of its requirements, from a mill in Britain constructed in the late 1960s. It considers this mill's product superior in quality to its remaining American source, because the British mill is heavily automated and equipped with better inspection and testing equipment.

--Eight of the firms first purchased foreign steel in the 1973-74 period of high demand when domestic mills could not fill their orders. Officials of a steel service center in the Midwest said two domestic mills cut their deliveries completely and the others imposed allocation quotas. They turned to a European mill, which not only provided them with steel, but trimmed coils that did not meet specifications or were not within thickness tolerances. Thus they no longer had to purchase prime steel, trim and handle it, and wind up selling it for scrap because it could not be used for the intended purpose. They further commented that while the foreign source's deliveries take longer, they have been more reliable than deliveries from domestic mills. In 1979 about one-third of their needs, or 15,000 tons of cold rolled coil, was purchased from a European mill. The company subsequently reduced import purchases after they persuaded their domestic sources to meet the service and specification requirements like the European mill.

INFLUENCE OF 1973-74 SHORTAGE CONDITIONS

In 1974, domestic steel companies operated virtually all out to satisfy demand. Still, 17 million tons of finished steel products were imported. According to the Chairman, United States Steel Corporation, foreign producers were able to charge sizeable premiums for steel sold to American users--

steel mills to market products of superior quality than are generally available in the United States. Japanese steel quality, as one buyer stated, "is preeminent around the world." While not all foreign steelmaking facilities are modern--particularly some in Europe--the firms we contacted provided numerous examples of foreign steel superior in gauge control, consistency, fabrication, and processing. Companies manufacturing appliances, or furnishing components to the appliance industry, found Japanese steel smoother because Japanese rolling mills are newer, hold tolerances closer, and are maintained better.

Higher quality steel also reduces manufacturing costs. Steel customers explained such benefits through the following examples:

--A U.S. heavy equipment manufacturer purchases high grade, heat treated steel plate from two domestic producers and a Japanese importer. Aside from the 10-percent price break they get from the Japanese firm, officials noted that their company incurs additional costs because of the domestic steel's inferior quality. Unlike the Japanese steel, they must flatten domestic plate and remove surface scale; otherwise, it complicates machining and paint will not adhere to the metal. Also, the domestic steel occasionally splits or laminates during forming. They attribute this to dirty rolling mills. Although they can receive credit for steel lost in this way, they do not recover the time invested in processing it. They estimated that scale and forming problems add $20 a ton to their costs, while flattening adds $30.

--A company producing tubes for hydraulic cylinders obtains steel containing .004 percent sulphur from foreign mills, whereas the standard domestic mill grade contains five times as much. U.S. mills will take orders for sulphur levels of .015 percent at a $10-per-ton premium. The company's purchasing manager explained that their foreign suppliers can readily produce lower sulphur steel because they use modern processes and have better quality control. The low sulphur content means tubes can be produced with less waste.

--A company that stocks and distributes steel pipe stresses that quality is critical for pipe used in oil exploration, necessitating onsite inspection of each pipe used with highly sophisticated equipment to identify defects. A large defective rate adds a large (but

Table 3-1

Reasons For Using Foreign Steel

	Primary	Secondary (note a)
Price	36	38
Quality	15	41
Supply protection:		
Product availability	27	24
Delivery reliability	2	24
Desire for a backup source	3	6
Services	-	13
	83	146

a/Many users gave more than one secondary reason.

Price Considerations

Of the 83 U.S. firms contacted who were presently buying foreign steel, 36 cited lower price as the primary reason for the foreign purchase. As of late 1979, even after adoption of the trigger pricing mechanism, for example, Japanese steel cost approximately $30 per ton less than competing domestic steel on the West Coast. As another example, Canadian imports into the Great Lakes area were landing at prices 5 to 10 percent below the charges of domestic mills. European exporters offered comparable prices.

Differences in the ordering price are not the whole story, however. Foreign firms, we were told, guarantee their quoted prices to delivery, whereas American steel mills charge the price in effect at the time of delivery if it is different from the earlier quotation. Also, some firms complained that certain American mills bill them for the actual weight delivered rather than the weight ordered (theoretical weight). Some American steel mills do not control thickness as well as competing foreign steel mills. Consequently, customers pay for the additional undesired weight received in domestic steel. Also, according to some respondents, domestic mills could be more competitive if they offered discounts for volume purchases. Lastly, buyers criticized U.S. mills for following suit each time a major steel mill publishes a new price list.

Quality

As a general rule, the buyers felt the newer, more modern facilities outside the United States permit foreign

Of the 28 West Coast firms we interviewed, 15 provided specific examples of steelmill products they must purchase from foreign suppliers. For example

--certain beams for building construction,

--thin gauge galvanized sheet for steel containers, metal buildings or culvert pipe, and

--thin wall, hot rolled sheet for roof trusses.

The construction beams are produced by Midwest steel mills, but high freight costs make it economical to purchase the product overseas. The unavailability of thin wall or narrow gauge steel, however, is not peculiar to the West Coast. According to the buyers, U.S. mills are reluctant to roll steel to thin dimensions, partly because they have sufficient customers for the thicker products, which are less costly to produce, and partly because their mills are too old to maintain the specific tolerance for thin sheets. For example, a Pennsylvania manufacturer of heating and air conditioning components began purchasing imported thin gauge galvanized coil about 1973 because none of the four U.S. producers it had been buying from could furnish quality steel for its new automated machinery. The president of the firm said that they will continue to rely on foreign steel until the quality of domestic products is improved. He added that if they had to rely on the domestic steel industry they would go out of business.

In all, 27 of the 83 firms we contacted identified one or more steel products they derive from foreign sources due to reasons of unavailability from domestic steel mills. Fifteen of the 27 firms citing product unavailability were on the West Coast. Based upon our discussions with domestic steel buyers, the age, limited capability, and limited domestic capacity of U.S. mills apparently has led U.S. steel producers to curtail their product lines and concentrate on items with the best profit margins.

New technology needs

Unless domestic steel mills become more responsive to new product needs, U.S. firms will increasingly turn to foreign mills and this will result in an even greater dependence on foreign sourced steel. This could affect our ability to achieve or materially progress towards energy and related self-sufficiency in some critical areas.

One U.S. automaker pointed out the need for adequate large-scale domestic production capacity to supply dual phase

unspecified) cost because these must be turned back to the producers or resold as inferior pipe. The incidence of defects also disrupts the work flow at the site. The company's purchasing manager told us that U.S. prime pipe, advertised as having been inspected and meeting specification, had a 4- to 5-percent failure rate at the job site. The failure rate for Japanese pipe was 0.2 percent.

--Another company, fabricating disposable steel containers for agricultural chemicals, purchases commercial-grade flat steel products. The Japanese and Australian steel is uniformly thick, whereas the American product varies, causing production machinery to jam, or resulting in loose fitting cans. The domestic steel carried rust, mill scale, and holes, even though it was supposed to have been inspected at the mill before delivery.

--A heavy equipment manufacturer purchases critical major components from Japan because the materials delivered from major domestic steel mills were all rejected due to poor quality resulting in poor welds.

Most companies who criticized domestic steel quality pointed to Japanese steel as exemplary. The officials, however, identified high quality steel purchased from mills in 14 other countries. As a rule, the high quality was derived from more modern plants regardless of the country in which located.

Supply protection

The companies we interviewed frequently cited the unavailability or the restricted sources of certain steel mill products domestically, and the undependability or slowness of U.S. companies' delivery, as reasons for buying foreign steel. We characterized these reasons as "supply protection," because their common motive is to have a steady supply of raw materials.

Product availability

Steel buyers identified several products no longer offered by domestic mills. The problem was particularly evident in the Western United States where import penetration is more than double the national rate. West Coast companies explained that some mill products not available from western steel mills are produced elsewhere in the United States; however, freight costs preclude their purchase from midwestern or eastern steel mills.

fuels, e.g., coal gasification plants. This will require even heavier plate which the domestic source cannot furnish. At the time of our discussions in October 1979, they said only the French company had the capability to make the heavier plate. The officials doubted that the U.S. mill would get into the market but they believed the Japanese could rapidly develop the capability. Another producer uses domestic plate for its domestic projects but uses the foreign product outside the U.S. One advantage with the foreign material is that the U.S. source cannot produce to as large dimensions as two other producers outside the United States. Consequently, besides higher purchase costs, they stated that construction costs would be higher because of a a greater need for welding.

A manufacturer of off-road vehicles such as tractors, earth moving equipment, etc., is working with a Japanese steel mill to install the new boron* trade technology in continuous casting. This is to be used in the manufacture of undercarriage parts and will avoid the use of expensive nickel and molybdenum alloys which are scarce in western nations. A company executive believes the West Germans will also develop and install the technology. However, he said the attitude of the U.S. mills, whose continuous casting facilities are limited, appears to be "Me too...someday."

Another concern that came to our attention relates to heat treating capacity. Heat treating hardens metals and is needed for production of high strength alloys. Foreign steel mills, particularly Japanese, have been installing this capability. A senior official from a major domestic steel firm acknowledged the need for the United States to increase this capability.

Delivery problems

Undependable delivery from domestic steel mills has contributed to many U.S. firms' decisions to purchase foreign steel. A Pennsylvania manufacturer said that delivery is more dependable from half way around the world than from domestic steel mills. A large engineering and construction firm, 80 percent of whose steel is imported, explained that its projects tend to be so large and complex that time wasted by undependable delivery costs more than differences in steel prices. He said delivery variances in either direction are undesirable. Delivery

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*Boron is a soft, brown, amorphous or crystalline, nonmetallic element, extracted chiefly from kernite and borax, and used in flares, propellant mixtures, nuclear reactor control elements, abrasives, and hard metallic alloys.

steels having better formability than conventional high strength steels. This concern was similarly expressed to us by another U.S. automaker who cited the need for facilities to produce high strength alloy steels for its front wheel drive automobiles. This capacity is critical in the drive for automotive fuel economy to achieve weight reduction by material substitution on a wide range of parts, since many parts require highly formable material. Its specific near term applications are primarily for structural parts such as frame members, underbody reinforcements, wheels, etc. Installation of continuous annealing production lines (with an investment cost of over $100 million), that integrate three separate processes--(1) electrolytic cleaning, (2) batch annealing and coil cooling, and (3) temper rolling and recoiling--are needed for high strength steel capability in dual phase steel.

Two Japanese steel companies have such facilities in place. Other systems to be installed include two more in Japan and additional ones in Sweden, Belgium, Brazil, and Russia. As explained to us, the present continuous annealing facilities in the U.S. are converted continuous galvanized lines or stainless lines representing a low budget approach. The U.S. plants have capability deficiencies due to the restricted size, width, and sophistication of their production, and they lack the productivity and cost efficiencies of the Japanese facilities.

Continuous annealing technology developed by Inland Steel Company is used at a facility at Nippon Kokan in Japan. An Inland official explained that they were reluctant to build a line until further technology improvements had been made. These have now occurred and Inland intends to construct a continuous annealing line under a cross-licensing arrangement with Nippon Kokan. We also learned that Bethlehem Steel plans to construct a continuous annealing line at its Burns Harbor facility in Indiana. It is not known to what extent these two facilities will meet the needs of U.S. automakers.

A few of the firms we interviewed were active in fabricating or constructing nuclear powerplant components. One of these, for instance, was importing 80 percent of its heavy nuclear grade plate from a French producer. It has relied less in recent years on its one domestic source because of quality problems. In a 5-year period the company rejected the French product once, while it rejected about 60% of the plate supplied by the domestic source. Company officials attributed the difference to good facilities and more attention to workmanship in France.

Because of the decline in nuclear powerplant construction in the U.S., the company is seeking new markets in synthetic

equipment. The firm turned to a Japanese mill that was willing to deliver the cut shapes at a competitive price.

"BUY DOMESTIC" STEEL POLICIES IN JEOPARDY

Some of the Nation's steel consumers voluntarily maintain a policy of using domestic steel in the U.S. operations. They do so to keep the Nation strong, to keep its workers employed, and to avoid dependence on foreign supply. One large manufacturer said it pays $1 million a year for its policy of buying 98 percent from domestic mills. Such practices have so far limited the volume of imports, but some companies are reconsidering them.

One company had a buy-domestic policy until the 1973-74 shortages forced it to purchase foreign steel. Since then, it has been importing up to 12 percent of its needs. Officials would prefer to purchase only domestic steel because they fear increasing imports could weaken the Nation economically and militarily and upset the steel market. However, they may buy more foreign steel unless U.S. companies become more competitive.

A large plate welding firm bought mainly U.S. steel for all its projects in the 1950s. It has dropped this policy for overseas projects, but maintained it in the United States. An official said the firm would be willing to pay even higher prices to bring about increased domestic capacity. However, the lack of U.S. investment may force it to change its policy.

A large engineering and construction firm has no policy to use domestic steel itself, but commented that in the past most of its largest clients have insisted on the use of domestic steel for their projects in the United States. However, their clients have become more lenient toward the use of foreign steel in the last 5 years.

CONCLUSIONS

A variety of adverse circumstances and events--disruptive strikes, aging or obsolete facilities, capacity limitations--have been involved with the origin and growth of steel imports into the United States. Steel users have encountered many conditions, which domestic producers could not alter, which forced them to turn to foreign producers. Further, foreign pricing practices (which U.S. steelmakers often characterize as "dumping") can be an important inducement for domestic purchasers to buy foreign steel.

Steel users cite many compelling reasons besides price, however, for originally purchasing or continuing to purchase foreign steel. They said foreign mills afforded supply

well ahead of schedule results in excessive inventory and handling costs while late delivery pushes back completion dates and increases capital carrying costs. A buyer for a Texas firm related that a U.S. mill will not reschedule an order that fails to meet specifications when it comes out of the furnace, until all other waiting orders have been filled. Conversely, foreign mills are more flexible. Many companies we contacted said that imported steel must generally be ordered further in advance but is delivered more consistently on time.

MARKETING ATTITUDES AND SERVICES

Many of the domestic steel consumers we spoke with criticized the U.S. integrated producers' marketing attitudes. Some referred to a general "take it or leave it" sales philosophy. The owner of a large steel service center put it like this:

> "* * * the overseas firms are flexible and willing to work with you. They react as if they need you rather than you needing them. The most important ingredient in this is that there is no sense of urgency by domestic firms to work with the customer.* * *the Japanese say 'what can we do to participate in your business', whereas the U.S. firm will say, 'this is what we expect from you.'"

In contrast, domestic consumers pointed to U.S. minimills as a positive element in our steel industry. One marketing manager summed it up saying the minimills are well managed, modern, and efficient, and put a great deal of emphasis on service. For these reasons, he said the U.S. minimills are recapturing the merchant bar (R-bars, angles, flats, rounds, and channels) market that domestic integrated producers lost to foreign mills.

Several of the firms we contacted said foreign mills were more willing than U.S. producers to work with them in solving problems. Additionally, the foreign mills would be more willing to tailor products to customer specifications or perform additional manufacturing operations at the mill before shipment.

A large domestic plate customer, for example, asked its U.S. supplier to ship it shapes cut out of steel plate, so it would not have to accumulate, store, sell, and handle the 30 to 40 percent scrap generated in the cutting process. One U.S. steel mill said it would deliver the shapes only through its service center (which carries an 18 percent markup) and only if the customer would further guarantee the steel company a 20 percent annual return on its investment in cutting

CHAPTER 4

THE DOMESTIC STEEL INDUSTRY CAN BE COMPETITIVE

A number of basic factors affect the cost of domestic steel production. These include the costs of raw materials, labor, and transportation; plant scale; and governmental policies. This chapter examines these factors to see if the U.S. domestic industry could be effectively competitive in the future.

We found that although the U.S. steel industry's present picture looks bleak, the factors that most hurt it competitively--high labor costs, inefficiently sized integrated plants, and restrictive government policies--can be changed. Its raw material costs, which are harder to change, are overall about the same as those of foreign steel. Transportation costs give U.S. steel an edge in some domestic markets.

RAW MATERIALS

It has often been thought that having rich deposits of the raw materials for steel production gives the United States a natural advantage over others--like Japan--which have few such resources. In fact, however, the United States' integrated steel industry has no real net advantage in the prices it pays for raw materials. In general, it pays more for its iron and less for its coke, energy, and scrap but consumes more coal, energy, and scrap per ton of production than its major competitors.

Iron ore

The largest input in volume to the production of steel by integrated producers in nonelectric furnaces is iron ore. About 1.5 tons of iron ore are needed to produce 1 ton of raw steel in an integrated mill. Iron ore is found in large quantities on all continents. The world market price of iron ore has been significantly less than the domestic producers self-supply cost in the 1970's. This can be attributed to the opening of new iron ore mines around the world and the decline of ocean freight rates relative to inland freight rates. Consequently domestic sources of iron ore have become less important for competitive steel production. As the following table shows, U.S. producers actually paid more for iron ore in 1979 than producers in countries with heavier iron ore imports.

protection as secondary sources, sold steel of superior quality, delivered more reliably, and had better marketing services and attitudes. The latter factor was repeatedly stressed to us.

If American steel producers are to regain lost domestic customers, they will need both newer and more productive facilities and a more customer-oriented approach to marketing their products. The buyers believe revitalization must include the installation of more productive capacity and a genuine desire to beat the competition not only in price but in quality, dependability, and services. Unless it demonstrates a more positive attitude toward customer needs, the U.S. industry is in danger of losing even more business.

Japanese mills because they can buy it domestically and therefore cheaper. In Japan, where imported scrap is more expensive, mills use less scrap.

Steelmakers are eager to use scrap because it is cheaper from an energy consumption standpoint to use than raw materials. For each ton of scrap used instead of virgin ore, there is a savings of 2.9 barrels of oil. Because integrated U.S. mills use more scrap, their scrap costs per ton of steel produced are higher than those of similar mills in other countries.

Table 4-2

1979 Purchased Scrap Costs

for Integrated Steel Mills

Producing nation	Purchase price per ton	Tons purchased per shipped ton of steel	Cost per net ton of steel
United States	$101.95	.13	$13.25
West Germany	102.58	.08	8.21
United Kingdom	109.95	.104	11.43
Japan	(a)	(a)	(7.25)

a/Japanese mills sell .07 tons of scrap at $103.57 a ton for every ton of steel produced.

Source: World Steel Dynamics. This data applies to the first quarter of 1979 and is expressed in dollars per net ton based on a standard operating rate of 90 percent.

Metallurgical coal/coke

The integrated steel producer's most costly raw material input is metallurgical coal--the chief ingredient for coke making--which is combined with iron ore in the blast furnace to produce molten iron. About 80 percent of the world's coking coals are produced by only six countries: the United States, the United Kingdom, West Germany, the Soviet Union, China, and Poland.

U.S. producers generally are situated near coal mines and enjoy a cost advantage over their major rivals. Although Japan lacks sufficient domestic coal supplies to meet its needs, long-term, industrywide supply contracts arranged by Japanese trading and steel companies have kept its costs below usual world market prices.

Table 4-1

Iron Ore Import Dependence and Average Cost

Producing nation	1977 percent of iron ore imported (note a)	1979 average cost per ton (note b)
United States	41.6	$30.37
West Germany	94.1	21.76
United Kingdom	80.3	19.19
Japan	99.5	21.55

a/International Iron and Steel Institute, World Steel In Figures. 1977 import share is higher than normal due to an iron ore strike--1979 import share was 29.5 percent.

b/World Steel Dynamics. This data applies to the first quarter of 1979 and is expressed in terms of dollars per net ton based on a standard operating rate of 90 percent.

Because iron is abundant and ocean transportation is cheaper, iron ore import prices are similar around the world. One reason U.S. iron ore costs are higher is because most major steel producers are located inland and away from iron mines, thus they must rely on more costly rail or shallow-water transportation.

In addition, U.S. companies utilize about two-thirds pellets whereas the others use less than one-fourth pellets. This requires substantial mine site benefication costs compared to using iron ores.

The prospects of taking advantage of low world prices for iron ore are not good unless more steel mills are built near ocean ports. In the long run, however, the current shipping glut may end, forcing up ocean freight rates. Also, rising demand for iron ore may increase prices on the world market offsetting the current cost disadvantage of domestic ores.

Scrap

Steelmakers substitute scrap for pig iron to varying degrees. Steel mills generate scrap, but some also buy it. U.S. mills with basic oxygen furnaces use more scrap than

Coke imports may not continue to be available at reasonable prices. Most U.S. coke imports come from West Germany. The supply sources are principally plants producing energy for residential heating and gas manufacturing markets, and coke is a byproduct. West German reliance on North Sea oil resources is expected to phase out these plants.

Other Energy Resources

Like scrap and pig iron, energy resources are partially interchangeable in steelmaking. Aside from coal, which is the principal energy source in ironmaking, U.S. and German mills emphasize natural gas; British mills, oil; and Japanese mills, electricity. Japanese energy costs for producing a ton of steel are substantially lower.

Table 4-4

1979 Energy Costs Per Net Ton of Steel Shipped for Integrated Mills

Producing nation	Electricity	Oil	Gas	Steam Coal	Total
United States	$10.42	$ 7.21	$13.57	$0.93	$32.13
West Germany	10.44	12.68	13.30	-	36.42
United Kingdom	17.43	17.94	6.99	0.49	42.85
Japan	17.05	9.32	2.35	-	28.72

Source: World Steel Dynamics. This data applies to the first quarter of 1979 and is expressed in terms of dollars per net ton, based on a standard operating rate of 90 percent.

The Japanese are able to hold down energy costs per ton of steel through greater energy efficiency. Their integrated steel mills use no more electricity or heavy oil than our domestic mills. However, the light oil and liquid petroleum gas they use has about one-third the energy content of the natural gas that our mills use. The efficiency of their coke ovens and blast furnaces and their high use of continuous casting allows Japanese metallurgical coal supplies to cover a large fraction of their energy needs.

Efficient use of steelmaking materials

Efficiency, as well as price, is important in determining the contribution of materials to steelmaking costs. One

Table 4-3

Metallurgical Coal Imports

Dependence and Average Cost

Producing nation	Percent imported in 1975 (note a)	Metallurgical Coal Cost Average per ton in 1979 (note b)
United States	0.1	$52.59
West Germany	7.6	75.64
United Kingdom	3.9	70.26
Japan	77.0	60.97

a/Federal Trade Commission, Staff Report on the U.S. Steel Industries, Nov. 1977. The data applies to 1975.

b/World Steel Dynamics. The data applies to the first quarter of 1979 and is expressed in terms of dollars per net ton based on a standard operating rate of 90 percent.

Even though U.S. metallurgical coal reserves are abundant, steelmakers have been importing increasing quantities of coke because their capacity to make it has been declining. In 1975, the U.S. coke production totaled 75.3 million tons, but by 1978 had declined to 48.6 million tons. Our declining coke production can be attributed chiefly to (1) increased electric furnace steelmaking which does not utilize coke, (2) a reduction in the number of industry-owned coke furnace plants (58 in 1955 vs. 48 in 1978), (3) environmental and occupational health and safety regulations that reduce coke oven productivity (see p. 4-19), and (4) deterioration of facilities. As of 1979, about half of domestic coke capacity was 20 years old or more. By industry standards, the life-span of a coke battery is about 25 years. Using this criterion, about one-half of domestic coke oven capacity should be replaced or rebuilt within the next 5 years.

The need for coke has been tempered by improved blast furnance operations and increased electric furnace steelmaking, which does not require coke because the blast furnace operation is bypassed. By 1978 electric furnaces produced nearly one-fourth of U.S. raw steel, and by 1985 they are expected to produce 30 percent. U.S. coke consumption, 76.1 million net tons in 1955, has declined to 56.6 million net tons in 1978.

LABOR

Although the U.S. industry's raw material costs are competitive, it suffers a notable disadvantage against several of its rivals in labor costs.

Table 4-6

Employment Costs per Net Ton Shipped

	1978
United States	$114.10
West Germany	107.34
United Kingdom	96.21
Japan	71.46

Source: World Steel Dynamics. For integrated steel mills operating at standardized 90 percent rate.

Labor costs are a product of two factors, productivity and wages. Although our productivity is competitive, our disadvantage stems from high wage rates.

Productivity

Labor productivity is difficult to evaluate because different countries have different steel product output mixes, varying conventions of what is included within steel shipments and different employment practices. Nevertheless, common measures show the U.S. to be roughly competitive. According to one private sector analyst:

Table 4-7

Labor Productivity (1978)

	Manhours per net ton shipped
Japan	7.3
United States	7.7
West Germany	9.4
United Kingdom	16.5

Source: World Steel Dynamics. For integrated steel mills operating at standardized 90 percent rate.

reason U.S. steelmaking costs, for instance, are higher than Japan's, is the lower efficiency of U.S. mills. Of the iron ore and scrap used, only about 70 percent becomes steel in U.S. mills, while 30 percent is recycled as scrap. In contrast, Japanese mills claim only about 15 percent scrap.

According to AISI, the American steel industry consumes 36.7 million BTUs of energy (mostly from coal) to produce a ton of steel whereas Japan's steel industry only consumes 30.4 million BTUs. U.S. efficiency of oil and gas use in the domestic steel industry has yet to regain levels reached in 1973. Peter Marcus related that since the energy crisis, the Japanese have been doing three things better than U.S. and European mills, namely: (1) reducing the number of workers, (2) increasing the share of steel continuously cast, and (3) reducing energy consumption.

Overall materials costs competitive

Despite its less efficient use of resources, the United States remains competitive with other countries when it comes to material inputs for steelmaking.

Table 4-5

1979 Total Material Costs

Per Net Ton Shipped for Integrated Mills

	Iron	Energy (note a)	Other	Total
United States	$51.04	$ 83.14	$ 95.37	$229.55
Japan	41.58	81.16	79.30	202.04
West Germany	38.66	96.38	97.19	232.23
United Kingdom	37.24	119.44	103.65	260.33

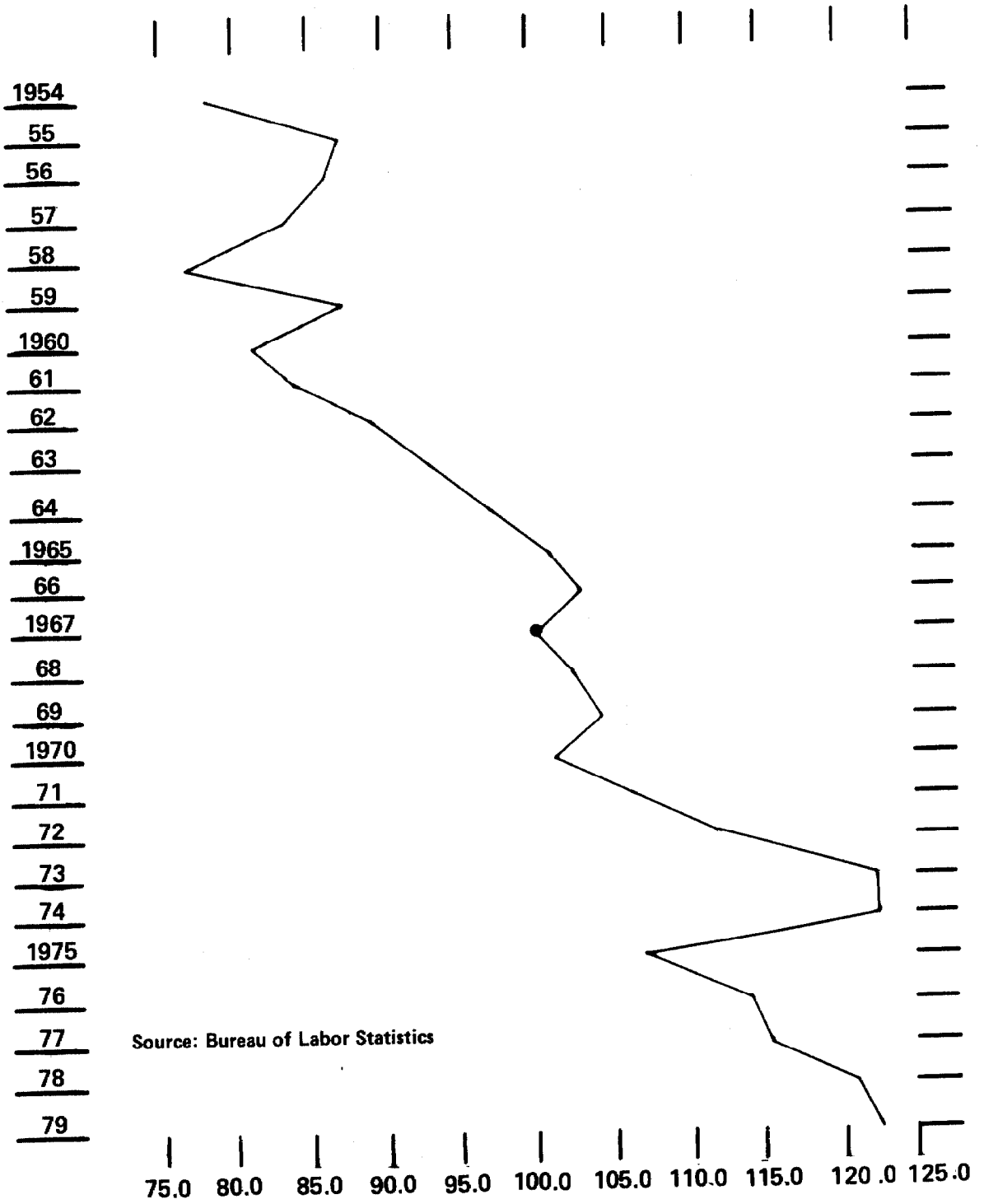
Source: World Steel Dynamics. This data applies to the first quarter of 1979 and is expressed in terms of dollars per net ton based on standard operating rate of 90 percent.

Note a: Includes coal and coke costs not included in Table 4-4.

This competitiveness results from many factors, including abundant coal and scrap supplies.

STEEL MILL PRODUCTIVITY
(SIC 331)

1967 = 100.0



Source: Bureau of Labor Statistics

Graph 4-1

Bureau of Labor Statistics data confirm the relative position of the U.S., but show that the Japanese work force has a substantial lead.

Table 4-8

Output per Hour 1978 (Preliminary)
Relative Levels (United States = 100)

United States	100
Japan	106 - 126
Germany	85 - 93
United Kingdom	43 - 45

Labor productivity will vary with several factors, including modernization investment, and workforce adaptability. The labor force's willingness to accept new technology has allowed technological investment to result in increased efficiency. Labor productivity in 1979 was 50 percent greater than it was in the mid-1950's. However, there has been no improvement since 1973 even though the work force in this sector has not opposed the introduction of production enhancing technology.

Wages

Steelworkers compensation rates typically exceed the manufacturing average worldwide, but they are higher in the United States than anywhere else in the World.

Table 4-9

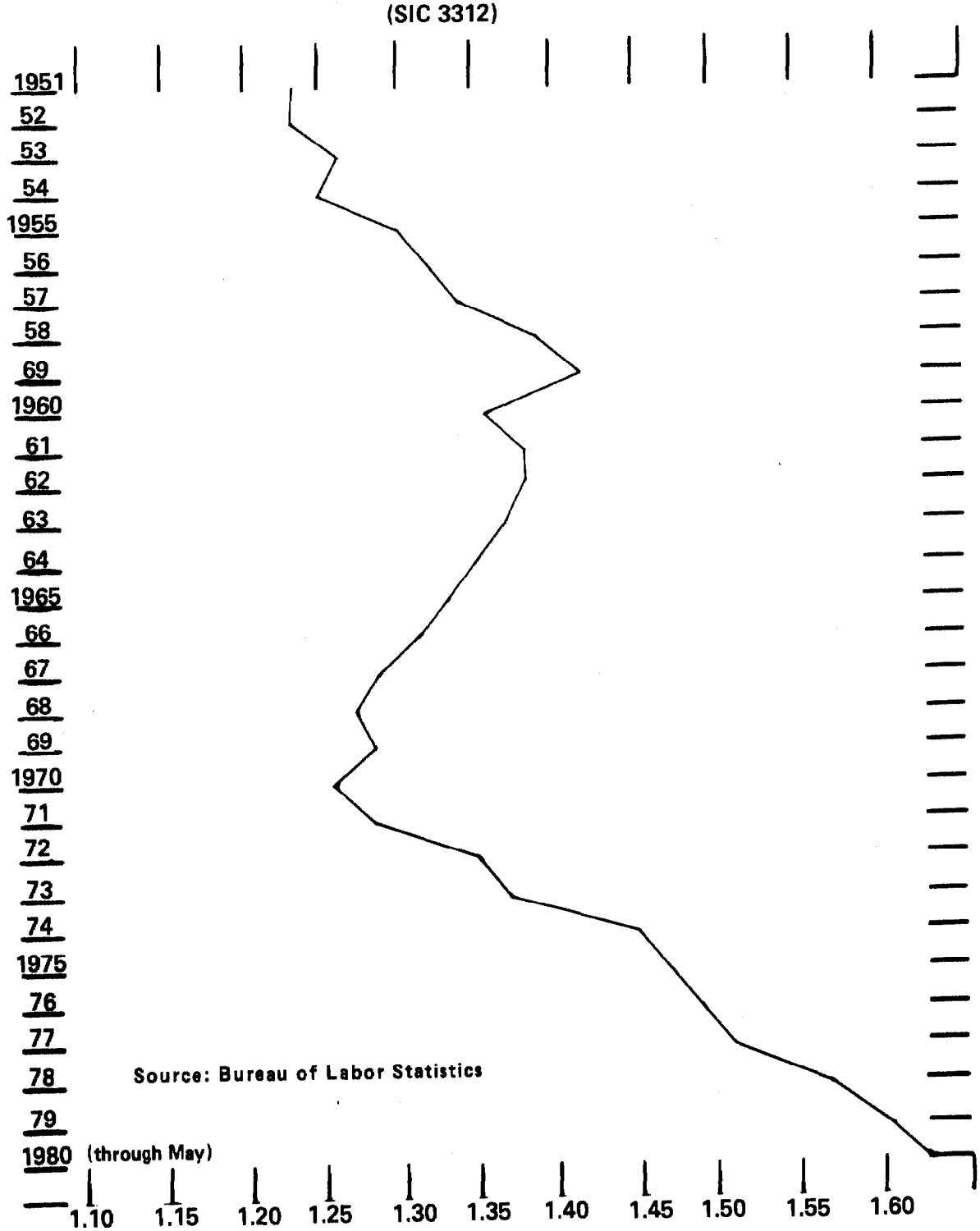
Employment Costs per Hour

	Employment cost per hour 1978
United States	$14.73
West Germany	11.43
United Kingdom	5.83
Japan	9.86

Source: World Steel Dynamics. For integrated mills operating at standardized 90 percent rate.

Steelworkers' wages in the United States have been rising far faster than the average manufacturing worker's (see graph). During the 1951-1970 period, steelworkers' wages ranged from about 22 to 42 percent above the manufacturing average, but

RATIO OF STEELWORKER WAGES
TO AVERAGE MANUFACTURING WAGES
(SIC 3312)



Source: Bureau of Labor Statistics

Graph 4-2

since 1970 this premium has climbed to over 60 percent. When benefits are considered along with wages, the premium paid steel workers over manufacturing wages is far higher in the United States than abroad.

Table 4-10

Percent Steelworkers Compensation Exceeds Manufacturing Average (1978)

	Percent
United States	77
United Kingdom	39
Japan	33
Canada	23
West Germany	20

Sources: World Steel Dynamics, Bureau of Labor Statistics, and Statistics Canada.

Total steel compensation per hour rose 180 percent from 1970 to 1979 versus 105 percent for compensation in the private business sector, 97 percent for the consumer price index and 81 percent for the gross national product deflator (another inflation measure).

Compensation increases have been made regardless of the industry's overall condition. Indeed, during 1977, a time of record-high imports, the lowest industry profits since the Depression, record-high plant closings, and no non-tariff trade barriers, the union won a particularly good contract. The 1980 settlement, referred to by some as "restrained", is still likely to keep the U.S. wage premium well above that for international competitors.

Since 1974, steel wage settlements have been developed under the Experimental Negotiating Agreement (ENA). The ENA commits the union not to strike in return for automatic three percent annual wage increases plus cost-of-living coverage. The ENA has produced benefits, as in the form of uninterrupted output to steel consumers from domestic mills. But these benefits have almost certainly been achieved only at significant costs. Maintaining the U.S. steel wage premium at its level above competitors, for example, adds approximately $30-$40 per ton in domestic costs.

The wage premium problem is addressed further in Chapter 7.

and energy than small plants. Market size and location help determine optimal plant size. A plant should be large enough to keep production unit costs low but not so large that it must seek faroff markets. Furthermore, it must be able to use its capacity to take advantage of large scale.

We estimate the minimum economic size for an integrated steel mill in North America to be 4 million tons of raw steel. The United States has only eight mills in this class --five in the Chicago area, one each in Detroit, Baltimore, and West Virginia. Together their capacity is only 30 percent of the Nation's total. Nineteen more mills are larger than 2-1/2 million tons; these represent 35 percent of the Nation's steelmaking capacity. Foreign steel capacity is considerably more consolidated, as the following table shows.

Table 4-12

Distribution of National Capacity
(In Percentage)

	Mills of over 4 million	Mills of 2-1/2 to 4 million tons	Smaller integrated mills	Minimills
United States	30	35	15	20
Western Europe (note a)	50	10	20	20
Japan (note a)	75	10	-	15
Canada	70	-	5	25

a/Source: World Steel Dynamics and estimated.

GOVERNMENT POLICY AND STEELMAKING COSTS

A variety of government policies--environmental regulation, taxation, import-export trade, and worker health and safety regulation--exist which affect the potential competitiveness of the domestic steel industry. We do not attempt to critique them all, but the following section does examine two basic policy matters--tax treatment of investments, cost implications of environmental regulation, and their administration.

Tax treatment

The principal corporate tax rules affecting the U.S. steel industry include:

--Profits are taxed at 46 percent (after the first $100,000, which are taxed at lesser rates).

TRANSPORTATION

One external but critical component of steel prices is the cost of moving it from mill to market. Because of transportation costs, much U.S. steel is sold within 300 miles of the mill.

Transportation problems, though, rarely make domestic mills less competitive than those abroad, because foreign shippers to the interior also use the same transportation network. In the West, however, imports ran over 40 percent in 1978 compared to 18 percent for the national market, and transportation costs were a factor. For example, the following table shows 1979 steel plate shipping costs to Los Angeles.

Table 4-11

Sample Cost of Shipping Steel Plate to Los Angeles

Origin	Mode	Approximate miles	Cost per ton
Kaiser plant, Fontana, CA.	Truck	50	$15.30
Japan	Ship	5,400	35.00
Chicago	Rail	2,100	73.00
	Truck	2,100	90.00
NW Europe	Ship	-	40.00

High transportation costs make West Coast markets unattractive to Midwestern mills, especially when the largest domestic steel market is in the Midwest.

Tinplate remains an exception. In 1963 the Transcontinental Freight Bureau, an association of railroads that sets freight rates, specially reduced tinplate rates to keep the rail traffic that Midwestern mills were capable of generating. Tinplate cost only about $40 a ton to ship to the West Coast in 1978, thus imports had less than 15 percent of that market. Two large Western canners told us they rely heavily on Midwest sources largely because of favorable freight rates.

However, an official of the Transcontinental Freight Bureau told us it has no plans to extend special rates to other steel products. He did not believe such rates would increase traffic.

PLANT SCALE

In general, bigger is cheaper in integrated steelmaking. Large-scale plants can more efficiently use equipment, labor,

--Inventories. The United States allows firms to use "last-in,first-out" accounting and so avoids taxing inflationary increases in the value of inventory. Canada has no such provision, but instead allows a flat 3-percent deduction on opening inventory values.

--Depreciation. The United States allows depreciation over 12 years while Canada allows a 2-year write off period. Canada also allows over 50 percent faster depreciation of nonresidential buildings.

A November 1978 study by Canada's Department of Finance illustrated that, in 1973, its manufacturing firms paid about 11 cents less in taxes per dollar of taxable income than U.S. firms.

Officials at Stelco commented that the 2-year writeoff helps to justify capital investment in the steel industry. Also, Stelco's rate of return on sales (after taxes) from 1968 through 1978 was 7.7 percent compared to 4 percent realized by United States Steel Corporation in the 10 years ended 1978.

New U.S. greenfield mills have been found to be very uneconomic in recent studies--most notably the Council on Wage and Price Stability's 1977 study of the industry. However, accelerated depreciation, or arrangements which would allow higher levels of debt financing, could alter profitability levels that industry must achieve if greenfield investment is to be judged feasible. The feasibility impact of alternative tax/depreciation rates is illustrated in Appendix I.

The potential feasibility of greenfield construction does not necessarily indicate that it is more economic than incremental modernization or investment. The point of our calculations is to illustrate the effect of tax policy, for example depreciation schedules, on the economic feasibility of major steel investments.

Environmental regulation

The environmental problems of coke oven batteries illustrate the impact of environmental regulation on steel industry competitiveness. Coke ovens are essential in the production of raw steel by integrated mills; they are also one of the most important sources of environmental concern. When coke ovens are loaded and unloaded, discharges of particulates and smoke occur. Gaseous emissions during the coking process are another source of pollution. These emissions are hazardous in that they may cause cancer but they are difficult and expensive to control.

--The cost of new equipment may be deducted from taxable income over a 15-year period. The minimum writeoff period can be 12 years in practice, because the law allows a writeoff period 20 percent shorter than the "guideline life." Another provision allows greater writeoffs in the early years of the period.

--Antipollution devices may be written off over a 5-year period.

--Ten percent of equipment investments may be credited against tax liability.

The shorter depreciation period for pollution control equipment is seldom used. Of 12 major steel producers surveyed, only 3 were using the special 5-year writeoff. Their reasons were that costly State certification of compliance is required and that other provisions of the tax code have made the antipollution writeoff unfavorable. However, two firms reported that they might make use of this provision in some instances now that the 10 percent tax credit is allowed.

AISI claimed that most nations allow accelerated write off as a tool to promote investments and increased productivity It cited Sweden, Italy, and France as countries where capital recovery allowances in the first 3 years exceed 75 percent of capital expenditures, compared to less than 57 percent in the United States. AISI feels that U.S. tax rules overemphasize the concept that depreciation should extend over "useful life."

Difference between U.S. and Canadian corporate tax systems helps explain why the Canadian industry is expanding while U.S. integrated producers are not. The Steel Company of Canada, Ltd., Canada's leading producer, has opened at Nanticoke, Ontario, the only greenfield mill built in North America since the early 1960's. U.S. Steel Corporation, meanwhile, has shelved plans to construct a major greenfield site across Lake Erie at Conneaut, Ohio. Principal differences are:

--Tax rates. In the United States, the Federal corporation tax rate is 46 percent. Both, however, are subject to various additional State or provincial taxes. However, the Canadian Federal rate is reduced by 6 percent for manufacturing which benefits Canadian steel producers.

--Investment tax credit. While the United States has a 10-percent tax credit for equipment investments only, Canada has a 5-percent rate that applies also to structures.

when it retired one coke battery and had to reduce its remaining capacity by over 20 percent due to the retrofitting of pollution abatement equipment. In 1979 the company produced about 70 percent of its coke needs. Company officials estimated 1980 self-production costs at $120 a ton and imported coke costs at $150 per ton. Further, they said the imported coke has impurities which cause build up on furnace walls. They also lose about 20 percent due to breakage in shipping. Despite these drawbacks, they felt it is cheaper to import than to attempt to build new coking capacity that will comply with environmental regulations and restrictions.

Another steel producer we visited has been working with an equipment manufacturer to retrofit its coking ovens with unloading controls. Traditionally, coke is pushed from the battery into an open quench car. The producer claimed that the particulates emitted at this time are less hazardous than emissions arising during the coking process. Nevertheless, the Environmental Protection Agency (EPA) required improved controls because the battery is located in an EPA region which does not meet national air quality standards for particulates. The company installed one enclosed coke-receiving car to prevent the release of such particulates, but it has had frequent breakdowns. The controls cost over $4 million to develop and install, compared to about $140,000 to purchase a traditional car. Although company officials agreed that better pollution control was needed, they objected to being pressured into investing in technology that they claim has not been proven operational.

The company noted that in order to bring its coke ovens into compliance, it is using funds that were earmarked for profit-earning improvements, including continuous casting technology. Continuous casting would have increased their yield of finished steel from raw steel by up to 10 percent and also saved energy. Another project which was shelved was a melt improvement program at their electric furnace shop with a forecasted return of about 30 percent. On the other hand, they said a $175 million coke oven replacement project will not reduce costs, improve quality, nor increase capacity.

While steelmakers are concerned that compliance is expensive and does not contribute to increased productive capacity, most recognize the need to reduce pollution from their operations. Although they seek flexibility in the application of environmental regulations, such flexibility often cannot be provided because various Federal statutes establish parameters for compliance which must be met. For example, the Clean Air Act deadline for industry compliance of December 31, 1982, can be extended only by the Congress. In addition, the States,

Pollution control equipment and modified operating procedures both are required to meet environmental standards. However, installing such equipment and procedures increases costs and reduce productivity. These factors often cause steel producers to either import coke or accelerate their investment in new coke ovens at the expense of productivity-enhancing investments.

During visits to three companies with coking operations, we obtained the perceptions of company officials about the costs and difficulties associated with meeting environmental standards.

One firm is spending $80 million to clean up its coke oven operations and expects to spend about $17 million a year for operating and maintenance costs. Despite these expenditures, the company will not be able to modify its facilities at a fast enough rate to satisfy production requirements and meet environmental deadlines. To obtain sufficient quantities of coke in the future, the company anticipates that it will have to import about $10 million worth of coke a year. This company estimates that it will cost nearly $20 per ton of produced steel to control coke oven pollution.

A company official believes that $14 of this $20 could be saved if the environmental regulations were less stringent and if the company were allowed more time to comply. According to this official:

--Extending the compliance deadline from 1983 to 1987 would allow the company to renovate one battery a year and avoid spending $30 million to import coke. This would save $4.55 per ton of steel.

--The requirement to install equipment to remove sulfur from coke oven gas could be omitted since neither the Federal sulfur standards nor the stricter State standards were exceeded in 1978. Federal regulations do not mandate such equipment but it was included in the States' federally approved implementation plan. This would save $4.95 per ton.

--The requirement for equipment to prevent dust discharges during unloading could be omitted since these emissions are, in his opinion, less hazardous than others generated in the coking process. This would save $4.32 a ton and avoid reduced productivity associated with operating the required equipment.

A smaller steel producer told us that it had surplus coke production up to 1976, but then started importing foreign coke

CHAPTER 5

POLICIES WHICH STRENGTHEN THE INTERNATIONAL COMPETITIVENESS OF FOREIGN STEEL INDUSTRIES

Growing foreign steel capacity and the close relationships between foreign governments and their respective steel industries have produced much concern about the long-term consequences for the U.S. steel industry and its ability to compete with such capacity in its home market. Various nations' steel policies have provided their steel industries with preferential financing arrangements, loan guarantees, rationalization programs, and various trade inducements. Inherent in these devices are (1) a national recognition of the fundamental importance of a strong steel industry, and (2) national objectives for attaining or maintaining export markets. Further, certain Federal programs have provided assistance to developing nations' steel industries.

This chapter highlights a variety of steel policies, programs, and practices used in the past or present to promote foreign steel capacity.

The purpose of our discussion is to set out what other countries are doing to support their steel industries. We do not intend to provide evidence to support the contention that many foreign steel industries have been subsidized or unfairly assisted. We have made no findings to this effect. Such decisions must be made by the Secretary of Commerce.

The following tables summarize trends in steel production and exports.

in devising strategies to comply with EPA requirements, can set more stringent requirements than those called for by the Federal regulations.

CONCLUSIONS

There are several factors that hurt the U.S. steel industry's competitive position. The major factors are:

--Overall, U.S. raw materials costs are about the same as those of foreign steelmakers and there is no prospect of changed raw material costs significantly affecting the domestic industry's competitive position. Transportation costs can give U.S. steel an edge in some domestic markets.

--Labor productivity in domestic steel mills compares favorably, in general, with foreign producers. However, the industry suffers a competitive disadvantage from labor costs which are by far the highest in the world.

--The industry's integrated plants are not as efficiently sized as many of its foreign competitors'.

--U.S. Government policies can adversely impact the industry's competitiveness. Two examples: tax laws which have not supported modernization and expansion, and environmental regulations which aggrevate the capital availability (modernization investment) problem.

In summary, the factors that most hurt the relative position of the U.S. steel industry are recognizable and can be changed. The industry can indeed be internationally competitive.

Table 5-2

Exports of Steel Products
by Principal Countries (Selected Years)

Producer	1956	1961	1966	1971	1976	1977	1979
	----------(in millions of net tons)----------						
U.S.A.	4.4	2.0	1.7	2.9	2.7	2.0	2.8
(share percentage)	(14)	(5)	(3)	(3)	(2)	(1)	(2)
Japan	1.3	2.5	10.4	25.6	39.7	36.8	34.0
EEC*	19.4	28.7	36.2	48.9	55.0	58.3	66.9
U.S.S.R.	2.3	3.7	6.0	8.2	8.3	8.3	7.2
Reported World Exports	30.3	42.7	65.3	101.1	131.6	140.0	151.0

* European Economic Community (Belgium, Luxemburg, France, W. Germany, Italy, Netherlands, United Kingdom).

Source: International Iron and Steel Institute.

The above data indicates that while steel production and export tonnages have been rising throughout the rest of the world, the U.S. industry has suffered from stagnant production and deteriorating export shipments--both as a percentage of trade and in absolute tonnage. Following are highlights of other nations' steel policies or programs.

JAPAN

Japan is the world's leading steel exporter and has been the largest single national source of steel mill product imports to the U.S. for a number of years. After excluding Intra-European Economic Community (EEC) 1/ and Intra-Council for Mutual Economic Assistance (ComECON) 2/ trade, Japan accounted for 42 percent of world steel exports in 1976. In 1978, Japan sent 6.5 million tons of steel to the U.S., or about 31 percent of total U.S. steel imports that year.

The rate of steel production growth in Japan has been phenomenal. In 1956 Japan produced 12 million net tons, which was 4 percent of world steel output. That same year,

Table 5-1

World Crude Steel Production Data
(Selected Years)

Producer	1956 Percent	1956	1961	1966	1971	1976	1978	1979	1979 Percent
		(millions of net tons)							
U.S.A.	37.1	115.2	98.0	134.1	120.4	128.0	137.0	136.3	16.5
Japan	3.9	12.2	31.2	52.7	97.6	118.4	112.6	123.2	14.9
EEC (9) a/	27.6	85.7	105.9	121.5	141.3	148.1	146.1	154.6	18.8
Communist Bloc	22.4	69.7	117.1	153.5	204.9	253.5	270.1	274.4	33.3
Other	9.0	28.0	37.9	57.3	75.7	105.1	118.9	135.0	16.4
World b/	100.0	310.8	390.1	519.1	639.9	753.1	784.7	824.5	100.0

Source: International Iron and Steel Institute.

a/The nine European Economic Community nations are France, (West) Germany, Italy, Belgium, the Netherlands, Luxembourg, United Kingdom, Ireland and Denmark.

b/Table may not add due to rounding.

--The use of Government backing to allow firms access to highly leveraged debt financing, access to public and private loan funds, and limited interest rate subsidies or discounts.

--Tax incentives for scrapping obsolete capacity, importing advanced foreign technology, and encouraging internal innovation.

--Permission to form sales cartels in certain circumstances.

--Substantial associated Government investment in transportation systems to ensure economical and reliable material flows.

It is difficult, if not impossible, to meaningfully quantify the value of environmental, economic, social, and political differences as they contributed to the international competitiveness of Japanese producers. The Federal Trade Commission (FTC), in a 1977 report, attempted to measure the "subsidy" aspect of Japanese Government policy. FTC's report indicated that the combined gross subsidies amounted to less than $1 a ton over the 1951-75 period, the era which corresponds to Japan's major steel production growth. Individual subsidy values computed by FTC follow:

1. The value of Japanese Government loans in the 1951-75 period was assumed to be worth an interest rate reduction of one percent, corresponding to interest costs savings of over $1 million dollars annually (or about 3 cents a net ton).

2. The value of favorable World Bank steel loans was similarly computed, yielding a negligible unit cost savings. The share contributed by the U.S. in 5 loans between 1955 and 1959 exceeded $81 million.

3. The value of "priority status" designation to the steel sector by the Government of Japan is interpreted by FTC as a signal that the normal business risks of such ventures were reduced, thus lowering the risk premium portion of interest costs. FTC assumed this status reduced the interest rate by an average of 0.5 percent, or annual interest savings of $16.7 million annually across the industry (40 cents per net ton).

4. The value of port facility construction subsidation was estimated by FTC to be $3.4 million annually or a unit cost reduction estimate of 8 cents per net ton.

Japanese steel exports accounted for 4 percent of world exports. In 1977, Japan produced 112 million net tons, or 15 percent of world output, while accounting for one-quarter of world steel exports. 3/

According to Professor Kiyoshi Kawahito 4/ it was not until about 1960 that the Japanese steel industry reached a stage where it could compete in the world steel export market. "To reach this stage, the industry had received various types of government aids, including subsidies and protection from imports." By 1962, steel prices in Japan were generally well below U.S. steel prices and slightly below EEC prices.

A close working relationship between Japan's Ministry of Finance, its Ministry of International Trade and Industry (MITI), and the larger steel firms has existed in the post-war era. In the late 1940s, Japan provided very large raw material subsidies to its steel producers and additionally subsidized steel prices. The steel price subsidies accounted for about 30 percent of the price-type subsidies granted to Japan's priority industries through 1950. 5/ Steel, being a key sector from the very start of Japan's reconstruction, received a larger than proportionate share of Government aid, financing, and tax favors.

In the 1950s and 1960s the Government of Japan attempted to develop an industrial structure capable of competing for world markets by encouraging greater economies of scale and by exploiting other factors. Japan's steel industry was the centerpiece for this policy. Major techniques used by the Government of Japan follow:

--Organization of Government's interface with industry through three specialized agencies: Steel Engineering, Steel Statistics, and Steel Administration.

--Control of raw material allocations.

--Extensive market research and development, incentives and programs particularly to promote exports (through a mixture of government and trade associations).

--Permissive anti-trust law enforcement, and the like, to achieve economies of scale. In 1970, the Yawata and Fuji steel companies merged to form the world's largest steel company. Other mergers and agreements to "rotate" certain types of capacity expansions also aided the development of an internationally competitive producer structure.

Finally, the Bank of Japan provided trade bills and short term loans to exporters at discounts of 2-1/2 percentage points to 1970. They were gradually reduced and finally ended in 1971.

Pollution Control

Like the U.S. industry, Japan's steel industry has been obligated to spend substantial amounts on pollution control. However, the application of environmental standards in Japan appears to be lessening.

There seems to be substantial concern over whether environmental standards and enforcement have placed the United States steel industry at a competitive disadvantage with the Japanese steel producers (e.g., has EPA been a negative subsidy factor?). Although we did not undertake a comprehensive comparative analysis ourselves, available data indicates that through 1976 the Japanese steel industry has invested substantially more on the environment in relation to steel production and has generally devoted a greater proportion of its investment budget to the environment as well. Overall environmental standards have been considered more stringent in Japan and a higher level of control has been implemented.

5. Tariff, tax, and export subsidies together were estimated to amount to a value of about 20 cents per net ton produced.

In sum, these subsidy computations amount to substantially less than $1 per net ton of benefit, and according to the FTC do not materially explain Japan's penetration of the U.S. steel market. It appears that differences in Japan's overall national economic policies and structures may be relatively more significant in explaining Japanese steel production and export growth than direct subsidies, and that, by and large, the necessary costs or economic advantages for steel production were present, given appropriate Government policies.

In addition to these subsidy value computations, the FTC report noted the following other tax and tariff inducements:

--Several programs were enacted in the early 1950's which particularly benefited the fledgling steel industry, including duty exemptions on most imported steelmaking equipment, tax free contingency reserves for price changes, inventory profits, and favorable allowances for bad debts.

--A special depreciation accelerator for certain steelmaking equipment and increases to acknowledge asset revaluation.

--Additionally, from 1953 to 1964, export earnings were exempted from Japan's corporate income taxes.

Since 1964 Japanese companies engaged in export related sales have been allowed to accelerate depreciation charges substantially. From 1965 to 1972 Japanese steel exports averaged about 27 percent of production, or accelerated depreciation charges by about 25 percent annually.

Further, exporters who made outstanding contributions to exports were awarded additional large depreciation accelerators, between 1968 and 1971, of either 30 or 60 percent, depending on MITI classifications. The extent that steel benefited from this practice is not developed by FTC

Also, in order to develop overseas markets, Japanese exporters may defer up to 1.5 percent of their export income from taxation.

There are also income tax exemptions for income derived from overseas "service" sales, such as technical know-how sales and other intangible sales.

Table 5-4

Relation of Steel Industry Environmental Control Investment to Production 1971-1977

Year	United States		Japan	
	Environmental investment in millions	Investment per ton produced	Environmental investment in millions	Investment per ton produced
1971	$161.6	$1.34	$219.2	$2.25
1972	201.8	1.51	284.4	2.66
1973	100.1	0.66	367.9	2.80
1974	267.2	1.83	555.6	4.30
1975	453.1	3.89	685.2	6.07
1976	489.2	3.82	920.1	7.77
1977	534.8	4.27	552.1	5.38

SOURCE: American Iron and Steel Institute Annual Statistical Reports.

Steel Industry Economics, H. Mueller and Kiyoshi Kawahito, January 1978.

Table 5-5

Percentage of Steel Industry Environmental Control Investment to Total Investment 1971-1977

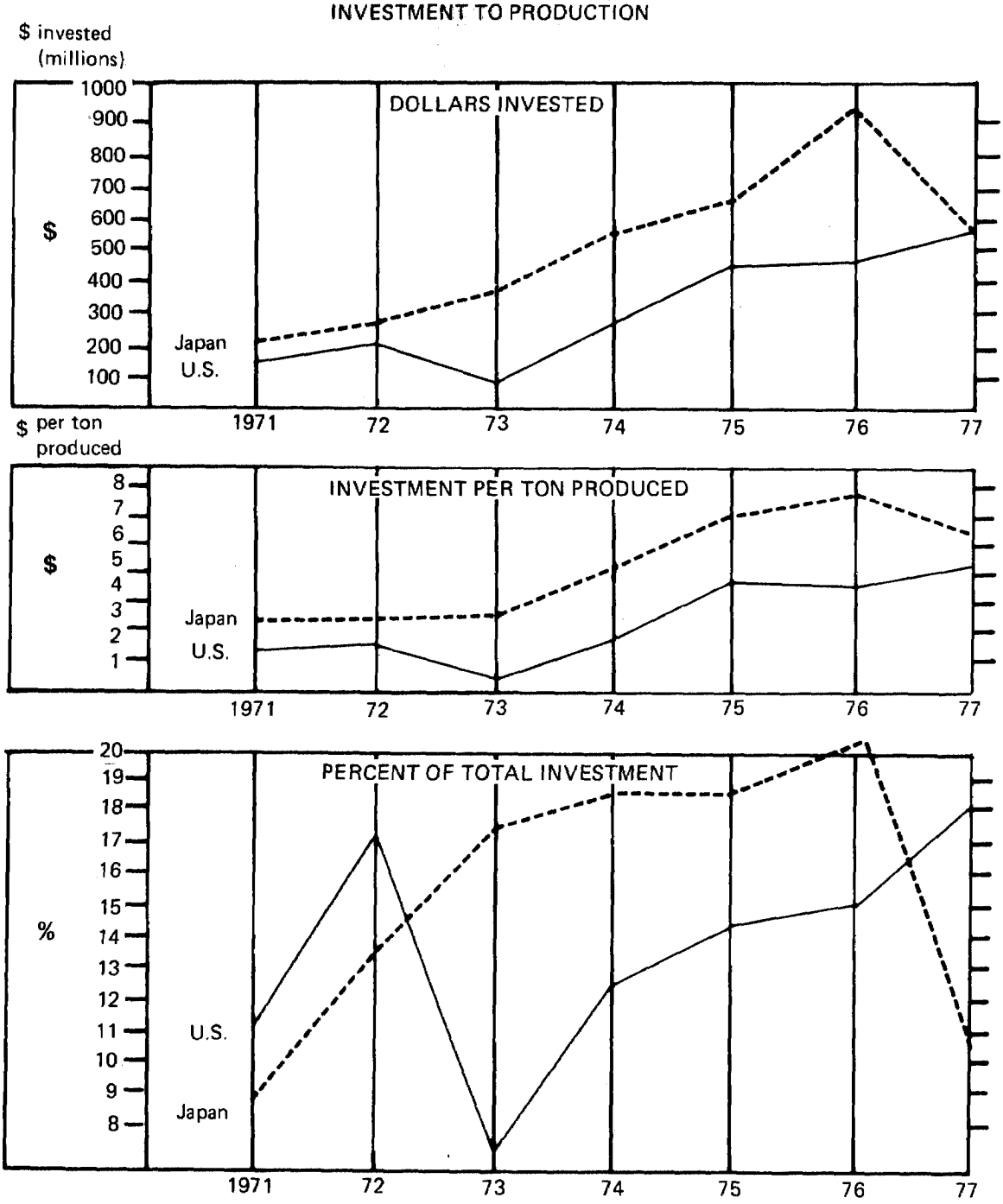
Year	U.S.	Japan
	(Percentage)	
1971	11.3	8.9
1972	17.2	13.4
1973	7.2	17.3
1974	12.6	18.6
1975	14.3	18.4
1976	15.0	20.6
1977	18.7	12.4

Source: Steel Industry Economics, H. Mueller and Kiyoshi Kawahito, January 1978.

American Iron and Steel Institute Annual Statistical Reports.

Table 5-3

RELATION OF STEEL INDUSTRY ENVIRONMENTAL CONTROL
INVESTMENT TO PRODUCTION



Source: Steel Industry Economics, H. Mueller and Kiyoshi Kawahito, January 1978, American Iron and Steel Institute, Annual Statistical Reports

to encourage manufacturing growth in areas of high coal or steel unemployment, and also has a program to provide subsidized interest for certain industrial loans. FTC estimated that the European steel industry received an interest rate subsidy of $11 million from 1967 through 1975 for these purposes.

Another entity, the European Investment Bank (EIB), was created in 1958 to be the EEC's financial arm. Whereas the ECSC was comprised of the coal and steel industries, the EEC was formed to create a general common market. EIB contributes to balanced development by making loans and loan guarantees to enterprises, public authorities, and financial institutions. Like the ECSC, the EIB obtains resources for its programs largely by borrowing in national and international capital markets. In the U.S., the EIB enjoys a AAA bond rating. Through May 5, 1977, the EIB had issued 39 loans worth $540 million to the Community's steel industry. EIB officials informed the FTC that its steel loans helped create almost 20,000 steel jobs and safeguarded another 13,500.

A crucial area where the European community has acted in concert is the very large public financial assistance to the common market's coal industry. These subsidy programs are important to steel because coal is the most expensive raw material input per ton of steel shipped and the European supplied coal accounts for over 80 percent of their coke needs. These subsidies have also helped reduce the region's rapidly increasing dependence on imported energy supplies.

FTC states that there is no doubt that most of the Community's coal mines could not have stayed open without massive direct and indirect aids. However, since imported coal was generally available at prices below the subsidized price of European coal, this subsidy has not directly reduced the European steel producers' competitiveness. Indirectly, however, the subsidy has lessened European competition with Japan and other steel producers for coal.

The worldwide steel crisis, evident since 1975, hit the European steel industry particularly hard. Over-construction of capacity in Japan (a sevenfold increase between 1960 and 1975) and Europe (a doubling of output) resulted in intense competition which has depressed steel prices and profit potential. Europe's steel producers recognize that they have inherent cost disadvantages in producing steel because other producers, such as Japan and many Third World countries, often benefit from newer and more efficient plants, lower wage rates and, sometimes, greater access to natural resources. The Com-

Analysts of the Japanese and American steel industries point out that in 1977 Japanese pollution control expenditures dramatically declined while such U.S. expenditures rose. Apparently the Japanese industry has reached a peak in its spending by substantially complying with its environmental requirements, while the U.S. industry has delayed compliance with environmental standards and has not reached a peak in such spending. This trend is anticipated to continue because of a need for the American industry to meet upcoming deadlines, the greater age of American steelmaking equipment which complicates retrofitting of environmental equipment, the generally smaller size of U.S. steel plants, and the institution of new or revised U.S. environmental standards.

EUROPE

The European nations supply over one-third of the steel mill products imported into the U.S. Together with Japan, they generally account for about two-thirds of all steel imports. Unlike Japan, however, this trade is splintered among many producers in many countries, operating under quite dissimilar circumstances. A substantial portion of European steel capacity is owned by government. Other national economic policies or circumstances are divergent, thus making generalizations about the European steel industry tenuous, at best.

Nevertheless, the purpose of this section is to review European community institutions and selected national policies which attempt to help improve the international competitiveness of their steel producers and assure a continuing positive steel trade flow.

In 1951 the European Coal and Steel Community (ECSC) was established to provide a supranational basis for improving the overall competitiveness of the member producers through planning, research, financial assistance for promoting certain types of investment, and various social welfare objectives. ECSC was authorized to levy assessments on all member companies (of up to 1 percent of sales) for these purposes.

Additionally, the ECSC has borrowing authority, which reduces the need for individual companies to raise needed capital. FTC concluded that "There is little doubt that the ECSC was able to raise money more cheaply than individual member companies." When the ECSC borrows in the U.S. it enjoys a AAA bond rating in contrast to our own domestic producers' A rating.

In addition to obtaining and granting favorable interest rates, the ECSC partly subsidizes the interest rates for loans

viable jobs. "The community does not intend to abandon (its) rescue program to the fate of market forces," states a Community document.

The essential short term objectives of the Community's rescue plan instituted in January 1978 follow:

--Put a ceiling on (already surplus) production capacities, establish compulsory minimum prices for some products, and establish recommended prices for other products.

--Discipline exporters to the Community. Anti-dumping measures have been taken against imports from countries selling in Europe at prices lower than the production costs of the most efficient factories. Arrangements have been made with exporting countries (particularly Japan, South Africa, Czechoslovakia, Bulgaria, Hungary and certain Western European countries) to ensure that their prices accord with their costs, and to set a limit for their exports. Imports to the EEC, which amounted to 13.7 million net tons in 1976, were reduced to around 12.1 million tons in 1978, while exports rose from 23.7 to more than 33.1 million net tons. This managed to save an estimated 55,000 jobs in the European steel industry, according to a Community document.

Over the longer term the ECSC plans to:

--Prohibit national aids which increase production capacities or distort competition within the Common Market.

--Grant Community loans to encourage the modernization and rationalization of companies in order to provide a better balance between supply and demand.

--Increase Commuity aid for industrial conversion and diversification in the major steel making areas. By 1985, some 100,000 jobs must be created to compensate for steel industry employment reductions. Up to 1978, ECSC has only supported steel reorganization programs if they are accompanied by regional and social aid.

--Share available work through financial interventions such as reducing the retirement age, reorganizing shift work, reducing the working week, restricting overtime, etc.

--Intensify the research and development effort to better utilize minerals and energy.

mission of the European Communities disclosed that in 1977 the 139 million net tons of European steel produced in the community was sold below cost. The loss overall was about $3 billion or over $3,900 for every steelworker employed.

The European producers have not faced the crisis on an individual company or nation basis, but have recognized that each government and its respective industries must continue working together. The Community's goal is to improve the competitiveness of the region's producers vis a vis the rest of the world, while sharing the burden of the costs on an equitable basis. The following steel industry options or alternatives were considered and ruled on by the ECSC:

1. Take advantage of low steel prices on the world market, stock up, and steadily withdraw from steel production. The ECSC expressly ruled this option out because Europe will not risk becoming dependent on imports for such a basic material. Further, and more importantly, too many European jobs are at stake.

2. Protect Europe by using import barriers. The ECSC concluded that such actions invite reprisals and do not resolve the root problems. Instead, the ECSC has used its considerable weight in international relations (its foreign trade represents one-fifth of world trade) to negotiate with its competitors to stabilize imports to Europe and to assure the Community's postion as a net steel exporter.

3. Subsidize European steel production to keep prices competitive despite higher production costs. Enormous cost burdens, however, persuaded ECSC that public aid should only be used by the Community for the period of time needed to modernize its plant and improve the competitiveness of the industry.

4. Expanding steel consumption. The ECSC already helps raise steel sales by keeping as many export markets open as possible and by initiating major infrastructure programs.

The ECSC, attacking all aspects of its basic steel industry problems, opted for a modernization policy to make the steel industry more competitive and thereby preserve the potential for viable steel jobs. Since modernization generally means job losses, creation of alternative employment opportunities is an essential corollary policy. In sum, the Community has opted for a modernization policy to make the steel industry more competitive and to assure the maximum number of

ownership link with the Government has kept these funds available. FTC estimated that the value of Finsider's Government affiliation reduced interest costs, prior to 1975, by about $3 per net ton produced. Finsider's rising interest burden--already two-thirds as high as employment costs in 1975--will inevitably force a massive infusion of public equity capital, according to the FTC.

Other EC nations and a U.S. steel company have expressed considerable concern about the inability to trace the flow of funds between IRI's maze of subsidiaries, crossholdings, and interlocking directorships. Consequently, the resulting opportunity to channel tax revenues can considerably distort competition. For instance, Italsider, accounting for about three-fourths of Finsider's steel sales and operating the largest steel plant in Western Europe, has suffered steelmaking losses estimated at over $1 billion between 1975-78. On October 3, 1977, IRI agreed to increase its capitalization by over $400 million, roughly equivalent to its financial loss that year.

In 1977 Italy exported 7.4 million net tons of steel and imported 5.7 million net tons. Its production and exports to the U.S. since 1974 are shown below.

Table 5-6

Italian Steel Mill Product Shipments to the United States 1974-79

Year	Italian raw steel production	Amount Italian finished steel exports to U.S.	Percent of U.S. imports
	(thousands of net tons)		
1974	26,239	161	1.0
1975	24,102	642	5.3
1976	25,855	303	2.1
1977	25,722	663	3.4
1978	26,734	789	3.7
1979	26,731	292	1.7

Source: American Iron and Steel Institute Annual Statistical Reports.

--Conduct negotiations with the other major steel producers to ensure an equitable division of needed rationalization cost burden at the world level.

Within the ECSC, various national governments have been actively nurturing their steel industries for many years, as in the following example of Italy.

Italy

The Italian government, through the Instituto per la Reconstruzione Industriale (IRI)--a public development corporation --maintains controlling interest in the diversified Finsider industrial group which accounts for over 60 percent of that nation's steel capacity and 98 percent of its pig iron production. Finsider's three main steel companies, together producing over 80 percent of its revenue, are: Italsider, whose Taranto steel works are Europe's largest at over 10 million tons capacity; Terni, a specialty steel producer (and subsidiary); and Dalmine, a steel pipe producer (and subsidiaries). IRI also controls three other small steel works which together account for about 4 percent of Italian steel production. Most of the privately-owned steel capacity in Italy is minimill operations producing nonflat items such as steel bars and rods.

Although Italy does not seem to have inherent raw material advantages for steelmaking, importing nearly all of its iron ore and hard coals and 38 percent of its iron and steel scrap, steel production seems to be a high priority concern of the Government. IRI controls all the large integrated mills in Italy and nearly two-thirds of Italy's steel capacity. And while Finsider, Western Europe's second largest steel company, only produces 40 percent of IRI's sales, it received more than 70 percent of IRI's reduced interest loans and an estimated three-quarters of the European Investment Bank (EIB) loans to the Italian steel industry. FTC disclosed that during the 1968-1975 period Finsider's production capacity increased 50 percent even though it suffered a cumulative loss of nearly $200 million. Furthermore, FTC reported that Finsider invested about $54 per metric ton of steel produced through the period, compared to an ECSC-(six) 6/ average of $18 invested per ton and $14 per ton in the U.S.

Most of Finsider's financing has been through debt rather than government equity contributions. IRI equity contributions amounted to less than 5 percent of the $4.3 billion invested between 1968-75, according to the FTC. The bulk of Finsider's loan funds were borrowed from capital markets. Its

CANADA

In recent years the Canadian steel industry has been successful at keeping its prices relatively low and its profitability relatively high. The Canadian steel industry has averaged a profit margin of 8.2 percent per year, more than twice the U.S. industry average of 3.6 percent, while selling steel substantially under U.S. steel prices. Canadian steel prices (f.o.b. the plant) have generally been from 5 to over 20 percent less than U.S. steel prices since the early 1960s.

Although, the Canadian Federal Government itself owns no steel capacity, the provinces of Quebec and Nova Scotia acquired components of a foreign-owned steel company that had announced its closure in the mid-1960s. 7/ The Nova Scotia provincial government formed Sydney Steel Corporation, (Sysco) which has an annual crude steel capacity of about 1 million tons, although it has only operated at about half its capacity. Sysco has incurred very large losses (about $1 million per week in 1979) and the Canadian Government has now pledged to make $50 million available for its modernization and is considering writing off $70 million in debt.

The province of Nova Scotia has also pledged Sysco $17.5 million in aid and will guarantee a $100 million loan for Sysco if the Federal Government agrees to the debt assumption. Sysco is one of two major employers in its region and its closure is considered politically unacceptable. Similarly, the province of Quebec has invested heavily into Sidbec-Dosco Ltd. which resulted in the world's largest direct reduction module installation electric furnace steel complex, and the only integrated steelmaker in North America continuously casting its total billet and slab production.

Sidbec's steelmaking capacity at its inception in 1969 was only 160,000 tons which has been increased to about 1.5 million tons, with current investment plans to increase that further. Sidbec is also the majority owner of a joint venture development of Quebec iron ore reserves. Nevertheless, Sidbec had incurred cumulative operating losses of $136 million (Canadian dollars) through 1978. The 1978 deficit was $33 million (Canadian dollars). The company is seeking the province's approval for a $300 million, 5-year capital improvement program, and about $100 million to cover anticipated deficits. A Sidbec official, in a published news article 8/ declined to estimate when the company may turn a profit, instead indicating that the province has other objectives for the company. "If the only criterion is profit, I doubt myself if we need a Government-owned steel industry," he said.

Luxembourg

A larger European steel producer, Arbed, in Luxembourg, has not reported a profit since 1974--a boom year in the steel market. Losses since then have amounted to $408 million. Arbed, privately owned, is the largest employer in the nation and steel has been its principal export. To deal with Arbed's problems, a 1979 agreement has been reached between the Government, the unions, and the company. The company has suspended all dividends and drastically increased capital spending for modernization with a goal of profitability by attaining the efficiency of the Japanese industry. A major element of the capital spending is blast furnace modernization, and Arbed also plans to install continuous casting. One huge new blast furnace has replaced 12 older blast furnaces but only requires as much labor as one of the former blast furnaces. The union has accepted reductions in force from 28,000 in 1974 to 17,500 in 1980, with a final goal of 16,500, as well as given up some union benefits. Arbed has not hired any new steelworkers since 1975.

The Government of Luxembourg has agreed to grant Arbed about $112 million over a 5 year period to aid the steelmaker. The company is also seeking to receive an extension of the carry forward for losses beyond 5 years from the Government. Once the nation's largest taxpayer, the company does not now pay taxes.

Imports of steel from Belgium-Luxembourg since 1974 are portrayed below:

Table 5-7

Belgium-Luxembourg Steel Mill Imports into the U.S.
1974-1979

Year	Net tonnage	Percent of U.S. imports
1979	956,405	5.5
1978	1,238,325	5.9
1977	1,146,688	5.9
1976	462,621	3.2
1975	630,213	5.2
1974	1,592,063	10.0

Source: American Iron and Steel Institute Annual Statistical Reports.

Note: Luxembourg foreign trade figures are combined with Belgium's and no separate statistics are available.

officials told us that an environmental impact statement delving into minute detail like the one prepared by U.S. Steel Corporation for its proposed Conneaut, Ohio, plant was not needed in Canada. Various environmental permitting processes took U.S. Steel Corporation up to 2 1/2 years to do, but still did not prevent an environmental lawsuit to revoke the permits. In contrast, although environmental review was involved in Stelco's lead time, it did not materially interfere with the company's progress.

In general, it appears that Canada has provided its steel industry with a more favorable economic climate in which to operate. Whether these factors are more responsible than other factors for the health of the Canadian steel industry is a subjective judgement, however.

LATIN AMERICA

In general, many Central and South American national steel sectors have been growing, both in domestic steel consumption and production. Furthermore, Latin American steel exports to the U.S. have been rapidly rising, as shown below.

Table 5-8

Latin American Steel Mill Product Exports To The U.S. 1975-1979

Year	Mexico	Brazil	Argentina	All other	Total Central and South America
	(in net tons)				
1975	50,788	43,226	3,726	4,901	102,641
1976	141,377	67,409	87,021	15,721	311,528
1977	223,612	65,290	89,956	12,542	391,400
1978	213,973	292,683	239,119	27,053	772,828
1979	159,627	432,238	37,579	17,625	647,069

SOURCE: American Iron and Steel Institute Annual Statistical Reports.

Brazil

The Brazilian story appears characteristic of Latin American steel development and Brazil poses the potential to be a

It appears that support of the failing steel companies in Canada has had a relatively negligible effect on the Canadian or U.S. steel markets. These companies are small and have traditionally been price followers.

Canadian tax and regulatory provisions

Of importance to the strength of Canada's steel industry is a favorable business climate. Canada does not provide its steel industry with any specific or special advantages beyond those provided for all manufacturing industries. Canadian tax laws permit manufacturing firms to write off machinery and equipment in 2 years. The U.S. Department of Treasury recently reduced the effective writeoff period from 15 years to 12 years, but even this new period is much longer than the writeoff period allowed some other U.S. manufacturing industries. The shorter the writeoff period, the more attractive capital investment becomes because it defers taxes.

For mining exploration and development expenditures, which can be considerable for steel producers, Canadian law provides that for every $3 expended, an additional dollar is allowed as an expense for tax purposes. This encourages Canadian steel producers, among others, to explore and develop Canadian resources, thereby reducing imports.

There is a similar mechanism for machinery and equipment investment whereby depreciation is increased by $1 for every $3 expended. Also, Canadian tax law permits the partial exclusion of dividends from personal income to alleviate the double taxation of corporate income. No comparable escape is provided for corporate income in the United States. In a November 1978 study comparing the level of taxation for manufacturing sectors in Canada and the U.S., the effective Canadian taxation rate was 11 percentage points lower than the U.S.'s, and taxes on capital gains were also lower.

Discussions with American and Canadian regulatory and industry officials also indicated that environmental, antitrust, and other regulations have been applied flexibly in Canada to balance economic and social tradeoffs. Costly court litigation over environmental standards, such as experienced in the U.S., has been avoided to date in Canada. Further, the proportion of capital investment diverted to nonproductive investment also appears to be substantially less.

Another indicator is the difference in the time it takes to receive environmental approval for new capacity. Stelco

The project is being financed with full and unconditional guarantees of the Federative Republic of Brazil. Such a guarantee is probably essential to attract foreign financing because of the unlimited risks involved in such a huge venture. After the plant reaches its 2 million ton per annum level, a 60:40 debt-to-equity ratio will be maintained. To maintain that ratio, it will be permitted, however, to include as equity any loans that are needed from Government-owned financial institutions.

In addition to the Government-supplied equity (97 percent) and the full and unconditional Government guaranteed debt 10/, it appears that the Brazilian Federal, State, and local Governments are also fully financing much of this project's related infrastructure, thus minimizing initial capitalization requirements. For instance, financial responsibility for the construction of a water supply and clarification (e.g., water cleaning) system will be borne by the National Department of Sewerage. Financial responsibility for access road construction and/or improvements rest with the State of Minas Gerais. Likewise, the Rede Ferroviaria Federal S.A. (Federal railway authority) will finance all needed rail links.

The Brazilian Government is also participating in two other steel projects in Brazil. One is a joint venture with Italian and Japanese interests and the other is a venture with Brazilian private interests.

Besides Brazil's intensive programs to foster the creation of steel-making capacity substantially in excess of its peak needs, various export incentive devices were alleged in a petition for relief from Brazilian pig iron imports under the U.S. countervailing duty statute 11/. These devices include:

--Accelerated depreciation write-offs for Brazilian-made plant and equipment used for exports. Plaintiff alleges that this "bounty for exporting" reduces the product's export value by at least 6 percent.

--In regard to production costs, the plaintiff alleged that the Bank of Brazil will provide preferential loan rates and terms which reduce the export values by at least 13 percent where Brazilian producers sign a legal term of responsibility binding themselves to export. Exporting firms can obtain such preferential financing for a 1-year term up to a maximum of 40 percent of last years export value, as defined by Brazilian regulation.

much larger factor in the U.S. and world steel markets for two reasons: (1) growing Brazilian production is putting pressure on European and Japanese steel export markets, thus indirectly at least increasing these producers' pressure on the U.S. and other markets, and (2) growing Brazilian steel production is increasingly being marketed in the U.S.

The Brazilian steel industry is partly State-owned and partly owned by private and foreign interests. Private equity capital is welcomed by State-owned companies. Overall, the State closely cooperates with the private sector and plans the development of Brazil's steel industry. The principal steel planning body is the National Council of Iron, Steel and Non-Ferrous Industries (CONSIDER), and the principal objectives of its current 10 year development plan are the creation of steel production capacity 20 percent in excess of peak domestic consumption and development of an export marketing system. The integrated national steel plan encompasses both the State and privately owned enterprises and related interests, such as raw materials, material movement systems, infrastructure siting, engineering capability, equipment manufacture, and pricing.

Brazil's current National Development Plan emphasizes continuing import substitution strategies through selective industrial expansion and encourages foreign exchange recovery per aggressive export promotion programs. Targeted industries for massive investment schemes have been steel, mining, petrochemicals, pulp and paper, fertilizer, and agricultural chemicals. The definite priority has been steel, which accounts for 58 percent of the basic industries investment programs (1974-1980). In the 1960s the development plans were aimed at attaining self sufficiency in steel production.

In order to expand Brazilian steel production, the government owned steel holding company (SIDERBRAS), the State of Minas Gerais, and private interests are constructing as a joint venture a new integrated steel works to be called ACO MINAS GERAIS S.A. (ACOMINAS). The project has been given the highest priority possible by the Brazilian Government as an integral part of their plan to reduce steel imports and to develop an improved steel export capability. Estimated cost of the project in 1977 (with a 1980 startup) was $3 billion, with a 1983 production capability of 2 million net tons. 9/ After completion, it will be the largest steelworks in Brazil and Latin America. Output will include semi-finished products, medium and heavy sections, and rails.

Secondly, the Export-Import Bank of the United States was created in 1934 to aid in the financing of and to facilitate U.S. export sales. It offers a variety of programs to accomplish these results; however, in all its activities it is guided by these overall practices:

1. It is not intended to compete with the private capital market but to supplement and encourage it.

2. Congressional notification is required when its share of a project equals or exceeds $100 million.

3. It is intended to be competitive with other potential exporting nations by offering comparable financing terms.

4. It has instituted a procedure to conduct a micro-economic net impact analysis of its proposed loans.

Export-Import Bank records indicate that it supported $107,993,000 in U.S. exports between 1945-77, and only $2,797,000 of this (or 2.6 percent) relates to the steel industry. Further, the Export-Import Bank claims it has participated in less than 10 percent of the over 400 million metric tons of foreign steelmaking capacity built between 1945-1977. However, even where the Export-Import Bank financed all or a portion of a steel project, it emphasizes that such financing was provided to facilitate U.S. exports of engineering services, technology, and equipment in competition with others generally capable of providing the same--be it Japan, Germany, U.S.S.R, or others.

An Export-Import Bank official also said that for them to refuse to assist the many U.S. companies whose livelihoods depend on exports to foreign steel industries would not significantly deter that expansion because competitive, necessary technology is readily available elsewhere. An Export-Import Bank official discussed the case of the new mini-steel mill in Trinidad where $56.3 million of Bank financing was sought by U.S. equipment exporters for a 465,000 ton steel rod and wire rolling mill. The Export-Import Bank concedes that much of this mill's output is undoubtedly intended for the U.S. market. However, when the Export-Import Bank deferred its processing of the U.S. firms' application, other countries (Germany, England and Japan) moved in and promptly received the major orders for the mill from Trinidad. Unless the U.S. closes its borders to imports from such coun-

--The plaintiff alleges that Brazilian banks further provide preferential cash advances for foreign exchange contracts or receivables arising from export sales. Plaintiff's subsidy computations indicated a 15.6 percent export value reduction.

--Exemption of export sales from corporate income taxation in direct proportion to export sales. The plaintiff alleges that these provisions result in a nearly 5 percent export value reduction where a company exports 50 percent of its product. Brazil's corporate income tax rate is 30 percent.

U.S. GOVERNMENT FINANCING OF FOREIGN STEEL CAPACITY EXPANSION

There is continuing public concern that the U.S. Government, one way or another, is providing substantial amounts of the capital funds for Third World steel capacity projects which only adds to the world steel capacity glut and ends up intensifying the import problem into the U.S.

There are two primary lending institutions involved. The first is the Overseas Private Investment Corporation (OPIC) which was formally organizeed in 1971 to mobilize the participation of U.S. private capital in the economic development of less developed countries (LDCs). OPIC operates two programs to do this. First, it insures U.S. investors in foreign projects against certain political risks; and secondly, it finances the investigation and development of projects of U.S. investors in the less developed countries.

OPIC's policy is to not participate in any investment which is not developmental in nature or which might have the effect of being injurious to the U.S. In regard to their steel investment profile, OPIC has neither financed nor insured raw steel production capability. Only five OPIC insurance projects relate to investments in the steel industry (forgings, castings, etc.), amounting to insured investments of about $19 million. Less than 1 percent of their outstanding insurance coverage is related to steel. An OPIC official told us that all of these investments were reviewed at the time of consideration and later in response to congressional concern. Their analysis disclosed no adverse effects to the U.S. steel industry. OPIC also noted the positive value of their agency's program in making U.S. exports possible.

NOTES TO CHAPTER 5

1/The original six plus U.K. and Denmark.

2/USSR, Bulgaria, Czechoslovakia, Hungary and Poland.

3/Derived from International Iron and Steel Institute data.

4/Middle Tennessee State University, Murfreesboro, Tennessee.

5/Priority status was assigned to the coal, steel, shipbuilding, electric power and fertilizer industries.

6/France, Germany, Italy, Belgium, Netherlands and Luxembourg.

7/The provinces of Saskatchewan and Alberta have a minority interest in Interprovincial Steel and Pipe Corporation Ltd. (IPSCO). British Steel Corporation has majority interest in Slater Steel Industries Ltd.

8/The Gazette, Montreal, Canada, Sept. 13, 1979, p. 41.

9/The plant has been designed for expansion to a maximum output of 11 million net tons of raw steel.

10/Much of the capital will be supplied by financial institutions in the U.S., Germany, France and Great Britain.

11/The principal plaintiff alleges that these same subsidies are available to Brazil's steel producers.

tries, it appears that having Export-Import refuse to consider steel projects will not help the steel industry much, although it may cost other U.S. companies substantial business.

These perceptions were also held by officials from the multinational banking industry. They told us that European and Japanese firms have been active in participating in steel plant financing. For instance, although Export-Import Bank financing is desired for a small part of one steel project in Brazil, that is largely Brazilian and European financed, another project will be 49 percent Japanese and Italian owned and financed with no known proposals for Export-Import financing. A third project in Brazil will be limited to Brazilian and World Bank financing. The Export-Import Bank may participate in expanding some other Brazilian steel companies.

It appears to us that the Export-Import Bank must be aggressive in offering competitive financing packages to potential overseas steel buyers. Most prospective steel capacity expansions in the next decade apparently will be taking place (see chapter 2) in the less developed countries, making it essential for this country's steel service and equipment suppliers to be competitive in those markets if they are to have the opportunity to prosper.

CONCLUSIONS

In the developed and developing countries discussed, there is evidence of governmental recognition that a strong, internationally competitive steel industry is a national priority. Further, when internally generated funds are not sufficient, or available, the Governments will provide the funds to their steel industries.

The policy changes which could help make the U.S. steel industry become competitive in the future must be designed against the backdrop of strong foreign Government-supported steel industries. But they must also be sensitive to the possibility, discussed earlier, that overall growth in foreign capacity may not be sufficient to provide a reliable supply source.

CHAPTER 6

THE EMERGENCE OF FEDERAL STEEL POLICY

Federal policy towards the steel industry has not yet become as definitive as that of the Nation's major competitors. The purpose of this chapter is to explain the evolution to date of steel sector policy and the main reasons, in our opinion for existing policy inadequacies. The U.S. steel industry has the potential to compete strongly at home, and to some extent in world markets. But proper realization of that potential depends on important refinements both in the way steel sector policy is formulated and implemented.

FROM IMPLICIT TO EXPLICIT SECTORAL POLICY

Since World War II, the U.S. Government's steel policy has been mainly implicit in its action, rather than expressed, and largely unstructured. Steel, like other industries, was affected by general policies such as antitrust, environmental regulation, and taxation. Intermittently, the industry received particular attention; sometimes favorably (e.g., in agreements to limit imports) and sometimes unfavorably (e.g., through erratic efforts at price controls). On the whole, both general and specific Government policy has not been consistently responsive to requirements for modernization. At times, it worked directly against modernization, as through the application of environmental regulations making it needlessly difficult for the industry to replace polluting old plant with cleaner, new plant. 1/ Each of the Federal policy decisions affecting the industry was framed with its own purpose in mind; no effort was made to assess their total impact on the industry's health.

Government's approach changed after the industry suffered through a poor year (1977) and began filing a host of antidumping suits that could have hindered world trade. Imports reached 19.3 million tons. The industry, as a whole, only broke even for the year and thousands of workers lost jobs when uncompetitive capacity was retired in Lackawanna, New York; Johnstown and Conshohoken, Pennsylvania; and Youngstown, Ohio.

In 1977, the Government tried for the first time to develop an explicit, unified policy for the steel industry. In a report entitled "A Comprehensive Program for the Steel Industry," (the previously mentioned Solomon report), the Government established an overall objective for Federal steel policy, "to assist the steel industry in a manner which will stimulate

efficiency and enable the industry to compete fairly." 2/ The Solomon report then discussed initiatives perceived as needed to achieve that objective:

--Establishing reference prices for imported steel (the trigger price mechanism, TPM).

--Examining the feasibility of faster depreciation schedules.

--Developing a loan-guarantee program.

--Revising environmental regulations that affect steel.

--Clarifying antitrust policy for mergers and joint ventures, and improving related business review procedures by the Department of Justice.

--Examining the adequacy of Federal research and development funding in the steel industry.

--Considering supplemental adjustment assistance to workers and communities affected by steel facility closures.

The foregoing were the components of Government's first attempt to develop a broad and explicit steel policy. We now examine the implementation of that policy and assess its effectiveness.

ASSESSMENT OF INITIAL EXPLICIT POLICY

Trade Policy

The trigger price mechanism instituted in 1978 in response to the Solomon report paralleled in some ways the voluntary restraint agreements which had been in effect during 1969-74. Both actions followed years of high imports which the industry sought to restrict; both promised sharp reductions in imports; but both appear to have helped foreign exporters' profits as much or more than domestic steelmakers' profits, and neither led to greater investment in new capacity.

Controls over the importation of steel began in 1969, in the wake of an 18-million-ton import year, 50 percent higher than any previous year. Steelmakers and the United Steelworkers sought relief, and were partially accommodated when the Department of State negotiated a voluntary restraint agreement with Japan and Western Europe. These agreements limited those exporters to specific tonnages a year, plus 5 percent annual

growth, and roughly the same mix of products and geographical destinations. Many steel officials doubted that voluntary arrangements would prove adequate to permit planning for growth in domestic capacity. A U.S. steel official claimed, "we can't project the markets in years ahead on this basis, and when we cannot do that, we can't plan our investments * * *"3/ Other steel representatives noted that the agreements' short-term nature did not encourage longterm planning of new capacity. 4/

The agreements had specific problems which reduced their value to the industry. By restricting steel tonnage, but not value they encouraged exports of higher valued products, (stainless and specialty steels), to maximize revenue per ton. Import prices also rose, because of the dollar devaluations of 1971 and 1973. Next, countries that did not sign the agreements increased their exports from 18.4 percent of U.S. imports in 1969 to 21.2 percent in 1974. Third, as the Federal Trade Commission pointed out, a major objective of the agreements was to provide the industry with an interim of protection during which to modernize its facilities, thereby improving its competitiveness with foreign producers and preventing inordinate import dependence. However, capital expenditures for the domestic steel industry were 9 percent higher in 1968 than at any time during the 6 years of protection. During the same period, capital expenditures for other major countries steadily increased--Canada's by 400 percent, the United Kingdom's by 236 percent, European Economic Community's by 255 percent, and Japan's by 131 percent.

Finally, the agreements provided that the United States would impose no further restraints on steel trade. When the President imposed a temporary 10-percent surcharge on all imports in August 1971, several signers called it a violation of the agreements and used it as an excuse to exceed quotas.

In 1971, a new voluntary quota system with a smaller growth rate, 2-1/2 percent, was instituted. The lower growth rate moved Iron Age to comment, "American steel producers can begin making plans with firm assurance of market growth." 5/ Again not all importers were signatories, and imports in 1972 surpassed 17 million tons. One Japanese steelmaking official, however, "chided the U.S. industry for not having taken full advantage of the previous period of Japanese self-restraint to strengthen its position in the late 1960s and early 1970s." 6/ Heavy world demand in 1969-1970 and 1973-1974 and the dollar's devaluation in late 1971 is now believed to account for whatever decline in imports occured during the voluntary restraint agreement period (1969-1974).

The voluntary agreement approach was abandoned in 1974 but may have contributed to a problem of higher specialty steel imports. Acting on industry complaints, the President in June 1976 imposed 3-year import quotas on these products. Domestic specialty steel producers responded to the modernization opportunity afforded by these quotas with sharply increased capital investment that made their industry more competitive. 7/

The trigger price mechanisms was the next administration's attempt to shield domestic producers from alleged dumping and head off threats of antidumping suits.

The mechanism required that imported steel mill products be priced at least as high as the costs in the Japanese steel industry (considered the most efficient), plus profit. Imports below these prices would trigger "fast track" antidumping investigations. Trigger prices were to be revised quarterly to reflect changes in the Japanese mills' cost of production and in dollar to yen exchange rates. The mechanism's duration was not limited, but the Solomon report assumed that, as excess world capacity is eliminated, pricing practices would return to more normal patterns, ending the need for dumping protection.

Of the 83 firms we talked to that buy foreign steel, 50 criticized the trigger price mechanism for:

--Inflating prices. One buyer claimed that it raised his costs for steel plate by $40 to $50 a ton and for cold-rolled sheet by $20 to $25 a ton.

--Inhibiting competition, thus perpetuating obsolete capacity.

--Shifting money from domestic consumers to foreign steelmakers, thus increasing the latter's profits. (A State Department official remarked, on the other hand, that the mechanism was an ingenious solution to world steel political problems because it allowed the Japanese steel industry to operate profitably at just 70 percent of its capacity).

Peter F. Marcus observed that TPM interfered severely with the workings of the market place and it handed out awards and penalties on an arbitrary basis, creating an abnormally large price protection for some products and insufficient profit margin for others.

The former chief economist of the President's Council on Wage and Price Stability estimated that the trigger mechanism increased import prices 8 percent and domestic prices 1-1/2

percent in 1978. 8/ With imports at 21 million tons and domestic shipments at 95 million tons, foreign steelmakers gained $600 million and domestic steelmakers gained $500 million in revenues. In other words, over half of the added costs paid by customers went overseas.

Was the trigger mechanism effective in curbing imports? Raw import data (table 6-1) suggests that cumulatively, it had no significant effect on gross import levels.

Table 6-1

Steel Imports (million tons) for three months ending:

January 1977	4.1	January 1978	5.6	January 1979	4.65
April 1977	3.3	April 1978	6.4	April 1979	3.5
July 1977	5.2	July 1978	4.65	July 1979	4.5
Oct. 1977	5.65	Oct. 1978	5.2	Oct. 1979	5.9
				January 1980	4.5
				April 1980	4.0
				July 1980	3.9

Source: Bureau of Economic Analysis, Department of Commerce Survey of Current Business.

In the 6 months between the suggestion of minimum import prices (about Nov. 1, 1977) and the period when Customs finished processing the last below-TPM imports (around May 1, 1978), foreign mills rushed to land steel in the United States. Imports in that period were 12 million tons--over 4 million tons higher than in the same 6-months of any year before or since. An ebb in imports in the next half-year did not offset this wave. After that, imports returned to roughly the same level as before the rush. Even this reduction could be explained by higher world steel demand and more expensive foreign currencies.

Neither did trigger prices seem to have boosted steel investment. After having fallen from $3.61 billion to $2.46 billion in 1978, projected 1980 investment barely restores outlays to the 1977 level.

Table 6-2

Expenditure for New Plant and Equipment by the Steel Industry

	Nominal	Real ($1978)
	(billions)	
1975	$3.03	$3.61
1976	2.99	3.41
1977	2.67	2.87
1978	2.46	2.46
1979	2.97	2.73
1980 (projected)	3.53	2.95

Source: Bureau of Economic Analysis, Department of Commerce, Survey of Current Business.

The trigger price mechanism also affected trading patterns and practices. Because it was based on Japanese production costs, less efficient, higher cost European mills could market their products at prices at or above TPM but below their costs. As a result, European steel penetrated the West Coast. Allegedly, other practices included shipping higher quality steel than declared and using foreign subsidiaries to buy steel abroad at the lower world price. 9/

In summary, use of the trigger price mechanism between May 1978 and March 1980 skewed steel pricing and trade actions without clearly achieving its objective of curbing imports. However, the latter result may be largely attributable to poor administration, as we pointed out in an earlier report. 10/

Revised Asset Depreciation Range

The Solomon report recommended that the Treasury Department investigate the feasibility of reducing the period for depreciation of new steel industry equipment from 18 to 15 years. The change was made but not until 2 years later. Further, the steel companies were not very encouraged by the change, for it would save them only about $40 million more per year in taxes. They continue to support legislation to further reduce depreciation periods for all industries.

Steel Loan Guarantee Program

Loan guarantees of $500 million were made available to qualified steel companies through the Commerce Department's Economic Development Administration (EDA) revolving fund. The Solomon report suggested that eligible firms be those

--having viable plans for modernization,

--having serious financial- and capital-raising problems, and

--located in areas of high and rising unemployment or threatening massive layoffs.

EDA's guarantee authority is also subject to section 702 of the Public Works and Economic Development Act which prohibits loans to increase production in areas that already have excess capacity.

As of February 1980, EDA had allocated $391 million, or 78 percent of the authorization to guarantee 90 percent of loans totaling $434 million. About $100 million of the remaining authorization is earmarked for unspecified projects in the Youngstown, Ohio, area.

Table 6-3

EDA Loans to Steel Companies

Company	Date approved	Amount in millions	Purpose
Korf Industries	June 1978	$21.3	Working capital and equipment
Phoenix Steel Corp.	May 1979	32.3 10.0	Plant modernization Working capital
Wisconsin Steel EDS hodling co.	Aug. 1979	90.0	Plant modernization --$55 million; anti-pollution devices --$20 million; working capital--15 million
Wheeling-Pittsburgh Steel Co.	Aug. 1979	100.0	New rail mill of which $36.5 million is antipollution devices (note a)
Jones & Laughlin	Sept. 1979	111.1	Abatement equipment and plant modernization as part of antipollution plan
McLouth Steel	Pending	59.5	Coke oven battery cleanup
Penn-Dixie	Pending	10.0	Working capital for pollution control
Total		$423.1	
Guaranteed amount (90 percent)		$380.8	

a/The Farmers' Home Administration has guaranteed an additional $50 million for antipollution devices.

Other steel firms are challenging in court the guarantee for the Phoenix loan, and the rail portion of the Wheeling-Pittsburgh loan. The challenges are based on the claim that excess capacity already exists for the type of facilities to be constructed with government-backed loans. Although the Govern-

ment prevailed initially in both cases, appeals are still pending.

The EDA program, which was promoted as a vehicle for industry modernization, in fact has served mainly to finance pollution control or related projects. For example, over 60 percent of the combined EDA/Farmers' Home Administration loans go to some form of investment in the service of emission reduction. Indeed, the EDA program can be seen as a way by which one element of Government assistance is helping to meet the obligations being imposed by another element. That is, the investment needed to restrict pollution creates financial conditions which deter private financing for new equipment. EDA guarantees compensate for this effect. Then too, firms are spurred to comply with environmental standards as a prerequisite to EDA loans.

Environmental Regulation

Relations between EPA and the steel industry have been strained. Steel mills are at present more likely to violate standards than other industrial facilities. Although pollution abatement investment for all other materials firms peaked around 1976 and is now 10 to 65 percent less in real terms, expenditures in steel have not yet peaked--indicating steel's lag in meeting abatement requirements.

Table 6-4

Pollution Abatement Investment by Industry
(millions of constant 1978 dollars)

	1975	1979	1980 E	Increase between 1975 and 1980 E
Steel	473	470	541	+14%
Nonferrous primary	652	196	242	-63%
Other metals	84	81	74	-12%
Stone clay and glass	236	134	149	-37%
Paper	584	273	254	-51%
Chemicals	816	405	403	-51%
Petroleum	1,479	1,275	1,302	-12%

E - Estimated

Source: Bureau of Economic Analysis, Department of Commerce.

Capital outlays associated with steel facility regulatory compliance are large, however, and industry officials have sought to reduce investment requirements. For example, about 10 months before the Solomon report was issued, the American Iron and Steel Institute wrote to the Administrator, Environmental Protection Agency, identifying several areas where it felt EPA's application or interpretation of Federal law should be reconsidered.

The Solomon report also called for rethinking regarding application of environmental legislation, without retreating from the Nation's basic environmental goals. Accordingly, it recommended that EPA:

--Improve opportunities for the steel industry to discuss regulatory problems.

--Coordinate environmental standards and enforcement actions within EPA and with the Occupational Safety and Health Administration.

--Study the desirability of allowing "banking" or saving of emmission decreases at one time as an offset to possible future emission increases in nonattainment zones.

--Issue plant wide air pollution permits instead of regulating each process--known as the "bubble" concept. Thus for a plant which has a number of emission sources, some that perform over standard and some under standard, the plant would be considered in compliance as long as total emissions do not exceed the sum allowable for all the sources. The "bubble" concept allows management the flexibility to meet the overall standard in a more economical way.

--Consider, when setting future new source performance standards, whether they would discourage modernization.

--Consider the impact of State regulations which require new operating permits for reopened facilities.

In December 1978 EPA's response came through the publication of a proposed "bubble" concept in the Federal Register. The "bubble policy" represents a concession to the Solomon report and the industry, but as presently administered, it is still rather restrictive. AISI has emphasized to us that a restrictive bubble policy would be little better than no bubble at all.

EPA officials tend to see their impact on the industry as something mandated by law and hence not their direct responsi-

bility. Early this year, for example, an EPA official told steelmakers that new standards for coke ovens would be more stringent and would probably convince firms to build new ovens rather than refurbish old ones. But he also pointed out that Clean Air Act amendments meant permits for new ovens would take at least 18 months to process. "We kind of have you in the middle," he said sympathetically, but did not offer much hope that this dilemma would change. 11/

Antitrust

According to the Solomon report, there is some interest in the steel industry in both joint ventures and mergers to share risks, to enhance capitalization opportunities, and to promote research and development. However, industry officials are reluctant to pursue such activities because of the fear of antitrust enforcement action. For example, although the Attorney General approved the LTV-Lykes merger over the objections of the Antitrust Division, company officials said they would not have pursued the merger if they would have had to defend their action in court.

The Antitrust Division of the Department of Justice has not considered it necessary to clarify or modify its joint venture/merger policy as a result of steel company comments. The Division maintains that its present guidelines cannot be further clarified and that each proposed cooperative action must be considered on a case-by-case basis. However, the Department, on November 25, 1980, issued new joint-venture guidelines for research and development which we have not examined.

Steel industry officials also question the effectiveness of the Division's Business Review Procedure that was designed to provide early feedback to industry officials considering mergers or other cooperative arrangements. Generally, business executives are hesitant to abide by the advance advisory rulings which might be issued under the existing advance review procedure. No steel company has approached the Justice Department for an advance ruling since the procedure was initiated.

Canadian officials told us that their antitrust laws are similar to those of the United States but are applied with greater appreciation for industry operational needs. For example, the Canadian Government recognizes that large integrated companies are necessary to a healthy industry and that joint ventures may be necessary to achieve an effective use of investment capital. Hence, Canada accepts an ologopolistic form for integrated steel production, with only three large firms responsible for over 70 percent of basic steel pro-

duction, but is fully aware and alert to potential problems of non-competitive pricing. It has conducted a number of investigations to assure steel consumers that the pricing practices of the large integrated companies are reasonable. Canadian representatives suggested to us that the U.S. would benefit from new criteria to evaluate capital formation and production alternatives in light of international competitive conditions.

Research and Development

The Solomon report did not generate any significant improvements or changes in Government-funded steel research and development efforts. While some research has been conducted in this area over the years, there has not been any type of concerted Federal effort to identify either the types of steel-related research that should be conducted or the specific agencies that should be responsible for the research.

In fact, subsequent to the Solomon report, the Office of Management and Budget (OMB) ordered the Bureau of Mines not to take on any more steel-related research. OMB's rationale was that private industry can and should be doing such research. At the same time, however, EPA supported steel-related research pertinent to its regulatory efforts, and the Department of Energy also has done research on energy utilization aspects of alternative steel technologies.

Community Adjustment Assistance

A $20 million appropriation was made available to the Economic Development Administration to study and fund economic adjustment projects in communities affected by closure of steel facilities--one example, a motel development in Gary, Indiana. However, a large fraction of the funds were not used due to lack of acceptable proposals. EDA also studied alternative uses for, or funding of, worker ownership of abandoned steel facilities, but discerned no economically viable projects.

Pricing Intervention

One aspect of Government policy that the Solomon Report did not address is "jawboning" or informal efforts at price control.

Jawboning has been used sporadically to restrain price rises. It was detrimental to industry earnings in 1962, 1973-1974, and perhaps in 1979 as well. At other times it had little effect. Even so, it has placed the industry on notice that its

prices would be constrained on the upside of the business cycle. No similar concern has been shown for the effect of intermittent price interference during cyclic downsides on the industry's ability to attract the capital it needs to modernize and thereby reduce costs.

Jawboning has been used sporadically since the 1960s. With a 3.9 percent wage increase scheduled for October 1961, a steel price hike was discussed. But the President, by strongly expressing his opposition, coupled with Senate debate on the "problems of price fixing and concentration" in the industry, forestalled it. In April 1962, however, U.S. Steel--followed by other producers--announced a general price increase of about 3.5 percent, the first in more than 3 years, and the President acted even more vigorously to squash it. Four antitrust investigations were begun; Defense Department orders were diverted to companies which had not yet increased their prices; and legislation was drafted by the Solicitor General which would have imposed price controls over steel. The President prevailed, thereby setting what the industry claimed was a dangerous precedent for interfering in pricing decisions.

However, we believe that the incident itself has been overplayed as a cause of the industry's problems. Iron Age data suggest that the increases denied in 1962 then were allowed in April and October 1963. Steel prices then rose 3 percent against a background of stable wholesale prices and then stayed constant until 1965. Further evidence is that profits after mid-1963 returned to trends which were operating just prior to the April 1962 confrontation. Between April 1962 and Summer 1963, however, profits were 1 to 1-1/2 percent below trend--evidence of a distinct but temporary effect.

Price jawboning was used with moderate effect between 1965 and 1968. The new Administration in 1969 specifically renounced the use of jawboning but reintroduced the tactic in January 1971 to oppose a 12 percent price hike on plate and structural items. Then mandatory price controls were adopted (August 15, 1971 to April 30, 1974) keeping firm limits on steel as well as other prices. When the controls lapsed, steel prices were freed from Government interference until another Administration again reverted to jawboning in 1977, switching over to economy-wide voluntary price standards in November 1978.

The FTC 12/ found no significant correlation between informal price controls and steel profits. And, we would note, that when controls were renounced in 1969 and 1970, profits went down, and not up; in 1970, steel's profitability fell to its lowest level in thirty years. One reason for jawboning's limited effect is that steel markets softened after mid-1968

and the actual customer cost of steel was less than list prices because of heavy discounting. Hence, limits on list prices had a decreased effect on the actual prices at which steel was purchased. When, however, the market is strong such limits can hurt earnings. Under mandatory price controls (August 15, 1971 - April 30, 1974), the industry at first was only nominally affected by price limits but after markets tightened in early 1973, steel's earnings were definitely reduced by controls. The FTC has estimated that the steel industry lost as much as $.9 billion to $1.3 billion after-taxes during the control's life--enough to have financed up to three million tons of new capacity at the time. 13/

The Government's pressure on prices has at times been harmful in varying degrees. Conversely, we believe "jawboning" pressures have been overplayed as a cause of industry problems. Except for the effects of the 1962 Government actions, we see no direct correlation between"jawboning" and decreased profits. Mandatory or economy-wide controls, however, seem to have had a much more adverse effect on steel industry profits.

SUMMARY CRITIQUE OF COMPREHENSIVE POLICY EFFORTS

The Solomon report represented the first Federal effort to develop an explicit, comprehensive policy to promote the competitiveness of the steel sector. Although the Solomon report suggested a strategy to improve the condition of the steel industry, it did not produce many positive results. The trigger price mechanism was, as we have shown, 10/ laxly enforced. It was suspended when its prevailing administration proved incapable of forestalling anti-dumping suits. Faster depreciation came 2 years late and provided far too little. Loan guarantees have been hindered by legal challenges and geared mostly to pollution control. Environmental policy was revised only to a limited degree. Except with respect to research and development, new joint-venture and merger guidelines have not been developed. The Federal role in research and development was modified but in ambiguous fashion. Finally, assistance to communities was not appreciably changed.

We believe the Solomon report strategy failed for at least three reasons:

--The plan lacked specific national objectives for the industry; thus, there was no way of determining whether the solutions proposed could accomplish the task at hand.

--The Administration did not make a meaningful attempt to achieve coordination between the various compon-

ents recommended in the Solomon report and the agencies whose policies affect steel.

--The plan did not recognize the need for a counter-commitment from the industry or its work force.

These basic deficiencies must be avoided in future attempts to consider Government initiatives and policies toward the steel industry. And an additional observation related to policy failure is warranted at this point.

To the extent that steel policy has failed, it is not because the Federal Government treats steel worse than it does other industries. Jawboning aside, Federal policy neither hinders nor protects steel more than any similarly large industry. Thus, although the Council on Wage and Price Stability found 5,600-plus regulations which bore on some aspect of the steel industry, the categories enumerated for steel apply to other industries, such as chemicals or machinery, as well. 14/

Where steel appears to differ essentially from other industries is that it has failed to generate the profits which would allow it to satisfy special interest demands and still generate the investment capital it needs to survive. For example, stockholders want current dividends. Labor wants jobs, high pay, pension coverage, and a safe workplace. Foreign countries want access to the U.S. market to help keep their mills running and their workers employed. Environmental interests want continuation of large pollution abatement expenditures. Scrap haulers and exporters want high freight rates and prices. Tax officials want high revenues. Consumers want protection from the industry's use of market power, and from price increases that contribute to inflation.

To the extent that steel's assets are deployed or diverted to meet untempered interest group claims, it cannot modernize or expand. Over time, the industry has been less and less able to meet more and more contradictory claims on it. The industry's objective circumstances cannot let all interests be fully satisfied. Government must therefore mediate the tensions between the Nation's interest in having a living industry and the fact that the above claims subtract from the resources that that industry must reinvest to continue living.

1980 LAWSUITS AND ADMINISTRATION RESPONSE

On March 21, 1980, U.S. Steel Corporation expressed its dissatisfaction with operation of the trigger price mechanism by filing antidumping suits against seven European countries. The action caused major concern over its implications for disrupting many types of international trade.

Prior to U.S. steel's well-forewarned action, American Metals Market commented:

> "The choice at this point. . .is whether to design a major steel industry policy or sit back and allow U.S. Steel to file its suits." 15/

Initially, however, the Administration responded to U.S. Steel's action simply by offering the industry an either-or choice between an ineffective TPM or all-out opposition to its anti-dumping suits. Thus, the Secretary of Commerce stated:

> "[U.S. Steel] chose to pursue its dumping complaint through the filing of these anti-dumping suits. An alternative remedy was and remains available under the trigger price mechanism. The administration is open to either alternative." 16/

In a similar vein, the Chairman of the Council of Economic Advisers testified to the Senate Steel Caucus, defending the suspension of trigger prices, and arguing that pursuing both TPM and the antidumping investigations would be unacceptably inflationary. 17/

The lawsuits also provided an impetus to serious deliberations by the Steel Tripartite Advisory Committee, a joint labor-management-Government group. These deliberations led to a series of recommendations to the President on action priorities to aid the steel industry. The Tripartite Committee report served as the basis for "A Program for the American Steel Industry, Its Workers and Communities," announced by the President on September 30, 1980. Consequent to the program's announcement, U.S. Steel announced it was terminating its anti-dumping suits.

Unlike the Solomon Plan, implementation of the latest program will require congressional review and sanction of most or all of the proposed set of initiatives. Comments regarding the latest Administration plan are incorporated in the following chapter.

NOTES TO CHAPTER 6

1/ Council on Wage and Price Stability's Prices and Costs in the United States Steel Industry (October 1977), pp. 35-37.

2/ "A Comprehensive Program for the Steel Industry", Anthony M. Solomon, Task Force Chairman, December 6, 1977.

3/ Iron Age, October 31, 1968, p. 55.

4/ Iron Age, January 23, 1969, p. 91.

5/ Iron Age, September 9, 1971, p. 99.

6/ Yuzura Aloe of Nippon Steel in World Business Weekly, April 30, 1979, p. 6.

7/ Business Week, July 23, 1979, pp. 197-200.

8/ Statement of Roger Alcaly before the Government Operations Committee, Subcommittee on Commerce, Consumer and Monetary Affairs, December 20, 1979.

9/ American Metal Market, March 4, 1980, Steel Distribution Supplement, pp. 6A, 9A.

10/ "Administration of the Steel Trigger Price Mechanism," Comptroller General of the United States, July 23, 1980 (ID-80-15).

11/ American Metal Market, March, 1980, p. 4.

12/ Federal Trade Commission Staff Report on the United States Steel Industry and its International Rivals (November, 1977), pp. 262-266.

13/ Ibid., p. 264.

14/ Catalog of Federal Regulations Affecting the Iron and Steel Industry, Council on Wage and Price Stability, GPO, 1976.

15/ American Metal Market, February 14, 1980, p. 20.

16/ Washington Post, April 11, 1980, p. E2.

17/ American Metal Market, April 8, 1980, p. 4.

CHAPTER 7

CHANGES NEEDED IN STEEL POLICY FORMULATION

The domestic steel industry's continuing problems and the absence to date of an effective strategy for dealing with them, makes it necessary, in our opinion, to reexamine both the content of steel policy and the process by which it is developed and implemented. This chapter

--explains why we believe a serious, policy-directed effort to modernize the domestic steel industry is warranted,

--shows why a new approach to policy formulation is needed and how it could be achieved, and

--discusses principal considerations for an effective revitalization effort.

A DELIBERATE CHOICE MUST BE MADE

Steel is important to any industrialized country. Access to reliable, low-cost sources of steel is essential to the competitive health of the many industries, such as machinery, vehicles and construction, which are the essence of a production economy. But must reliable, low-cost access be synonymous with domestic production capability?

The Nation is faced with a serious decision. Should substantial resources be applied to reinvigorating the domestic steel industry? If so, how, and to what extent? These questions must be addressed in the context of an existing active international system of global steel production and marketing.

RISKS ASSOCIATED WITH INCREASED IMPORTS OUTWEIGH POTENTIAL BENEFITS

If recent trends were to continue, the U.S. could by 1990 become dependent on imports for upwards of 35 percent of its steel needs. Yet it could be argued that such further shifting in source of supply ought to be not only accepted but encouraged, and all forms of industry protection eliminated.

By this view, so long as foreign steel capacity is adequate to sustain exports, domestic steel consumers would not be constrained from access to potentially lower-cost and higher quality steel supplies. Even those consumers who still bought domestically would probably pay less as domestic prices were

--Second, foreign capacity may not expand sufficiently to compensate for the loss of retired obsolete domestic capacity. Supply shortages could result, with escalating prices, particularly if exporting countries pursue a policy (as has happened previously) of channeling steel towards their domestic steel-using industries before serving overseas markets.

--Third, over the long run, greater reliance on the world market is likely to introduce greater fluctuations in domestic prices. Foreign steelmakers, who enjoy government support, can absorb considerable volatility and still make modernization investments. Domestic producers have a thin equity base and lack direct financial support. Differential risk-bearing capabilities unrelated to efficiency mean that foreign mills can make investments (or retain mills) and gain domestic market share even where U.S. mills must postpone investments with equivalent expectations of returns. Instead, older U.S. mills are likely to close without modernization and yield unnecessary sales to foreign firms.

--Fourth, to the extent that management may be complacent and defeatest, greater pressure may make them less complacent but more defeatest and accelerate the decline of domestic capacity. This, in turn, could hasten the onset of possible shortages in global steel capacity.

A MAJOR DOMESTIC STEEL INDUSTRY IS JUSTIFIED AND DESIRABLE

An "open market" approach might be relied upon to induce an efficient domestic steel industry. However, there is no assurance that such an approach would result in an adequately-sized domestic industry. There are several basic justifications for reachieving and maintaining a major-sized domestic steel industry.

National Security

One of the largest steel customers told us that if we had to rely on our present steel industry to get us through a major conventional war, we would be in terrible shape. Although defense needs take only a few percentage points from current steel production now, the share can reach twenty percent in a mid-size war (such as Vietnam) and higher in a full-scale conflict. During the Korean War, for example, steel was on continuous allocation, and many consumer uses were displaced. It also took first place in the Commerce Department's controlled materials plan, received over a third of all rapid amortization

further discounted to meet import prices. The same may be said for service if further pressure is put on the industry's marketing attitudes. With all protection and hope of protection gone, steelmakers would be forced to modernize if they are to survive. Obsolete capacity would have to close. Investment in new capacity, to the extent judged needed, would be committed to competitive, profitable operations.

Further, unrestricted import competition would likely place enormous pressure on union wage behavior and tend to eliminate that factor as a cause of industry non-competitiveness. Workers may at first reject demands for wage restraint even at the cost of seeing their plants close. Even if so, however, certain experience indicates that plants tend to be re-opened after a few months to a year with the same workers under a new contract with moderated wages. This has happened in meatpacking because of interregional competition between unionized and nonunionized plants. Similarly, a U.S. Steel threat to close an American Bridge division plant if wage demands were not moderated was first rejected but later accepted when the threats approached reality.

In short, a policy of allowing unrestricted imports to force the steel industry to revitalize itself has many potential benefits. In general, it would convey a sharp lesson to industry managers who postpone hard decisions in the hope that the Government will protect and rescue them. In steel itself, more open trade could eliminate inefficient mills, spurring industry and labor to reduce costs so as to survive world competition. This approach would maximize consumer access to and benefits of low-price foreign steel. And these results would be achieved mainly through market-type pressures. Primary responsibility for revitalizing the industry would be placed upon management and labor, with a maximum incentive towards change to enhance chances of survival.

There are, however, substantial risks associated with a revitalization strategy which essentially would depend on international market forces.

--First, a more open trade approach could exacerbate the industry's capital formation problems. Lower domestic prices and a smaller market would certainly lead to lower earnings and less internal capital in the short run. This would hurt the growth of industry equity, which in turn would reduce its debt-carrying ability and further constrict access to outside capital. Such a train of events would work against any desired level of modernization investment.

balance. Arbitrary changes in import levels may come from making imports more expensive. However, if domestic steel-using industries pay more for steel, they will become less internationally competitive and our trade balance in steel-using goods will suffer. Therefore, measures to reduce domestic steelmaking costs will more reliably help our trade balance in steel as well as in general.

Economic Priority

The country must pay serious heed to the actual operations of the international steel industry, as recently characterized by the head of a firm producing steel in both West Germany and the U.S. "While the U.S. still has a relatively free market system, there is no free economy, no free market system worldwide, [a fact that American Government policymakers] either don't believe or don't recognize." 2/

As shown in Chapter 5, many other nations give priority to support for steel production. Canada, for instance, has concluded, that "no modern industrial community can afford to erect an industrial-commercial complex on a foreign-based steel industry or even a steel industry with a significant segment located beyond its boundaries." European countries formed their coal and steel community even before lifting internal trade barriers in general. Today, they still reserve special aid for their industries, especially in Britain, Italy, France and Belgium where steel losses are being underwritten by the Governments. In Japan, despite a lack of production growth since 1974, steel still retains high-priority status. Brazil gives it 60 percent of its entire industrial target investment. Understandably, countries whose philosophies encourage an explicit industrial policy would naturally intervene more in steel (as well as other industries) than the United States does. Nevertheless, it signifies something of consequence, we believe, when virtually every nation which has given explicit consideration to industrial policy has singled out steel for special consideration.

With $64 billion 3/ in sales, a workforce near 600,000 (with several hundred thousand employed indirectly) the leading consumer of tin, nickel, zinc and the ferroalloys, and the main industry in many cities in Pennsylvania and the industrial midwest, a substantial reduction in the size of the industry would cause major repercussions.

There are many groups whose prosperity is linked to steel. Among these, for instance, are the steel-making communities where there is considerable human capital built up within both

rights granted during the Korean War, and, in 1952, even had its mills seized to keep production going.

Some argue that the industry's capacity is currently geared to civilian goods whose production can be constrained in war. However, in wartime, defense related production requires what the purely civilian sector would consume, and more. With the superpowers near nuclear parity, the risks of a non-nuclear conflict have increased. Non-nuclear conflicts tend to consume materials at an exceptionally rapid clip. A strong domestic steel industry undergirds the industrial base which in turn supports the deterrence value of national capability for a conventional war.

This argument is tempered by noting substantial surplus capacity currently exists with our allies in Western Europe and Japan, and a smaller amount is located in the Americas. Yet our ability to use such steel sources would require that their industries be away from any conflict, that they would not be pressured into neutrality and that we maintain control of the sea lanes. Otherwise, our military-industrial base will have to fall back on what steel can be produced at or near home.

Balance-of-Payments

The United States uses from $50 to $70 billion 1/ worth of steel a year. Every 10 percent loss in domestic market share leaves a greater steel trade deficit of $5 to $7 billion which must be made up by a reduction in the value of the dollar in foreign exchange markets. How much of a reduction and over what period is impossible to state accurately. But we estimate that each ten percentage point shift in the steel trade balance could plausibly, in and of itself, reduce the dollar's relative value by one to two cents. Whatever the exact total, consumers of imports in general will have to pay more if the dollar's value declines.

Currently, the cost of imported steel runs $7 billion a year. If a serious shortage should develop, current producers would find it easy to raise prices, which domestic consumers would have to pay, or do without. Between 1972 and 1974, for instance, the continental European export price tripled. If our import share were to rise from the current 15 percent to 25 percent, for instance, and shortages were to ensue, a steel trade deficit of $20 billion (equal to ten percent of our current exports) in real terms could easily occur.

We recognize, however, that some measures to improve the Nation's trade balance in steel may hurt its overall trade

--Unrestrained imports reduce domestic producers' sales volume and (in many markets) prices and therefore profits. This discourages investment and increases import dependence. Yet imports provide a useful spur in getting domestic producers to compete, promote cost-cutting measures at home, and provide products not always available from domestic mills.

--Low profits have prevented the domestic steel industry from investing in new technology to keep it competitive. But without new investment, the physical plant ages and becomes less efficient and less competitive, thereby further reducing profits. However, even though the industry's obsolete plant and equipment inhibits its competitiveness, retiring them, unless compensated by new capacity, could exacerbate both import dependency and the threat of future shortages.

--The domestic industry has many plants too small to obtain optimum efficiencies, obsolete plant sites and layouts, and inadequate product specialization for current geographic market conditions. A potential solution--joint ventures or mergers--has not received serious attention because of fear of antitrust problems. Further concentration, however, might interfere with product selection, services or quality available to steel consumers.

--Action by regulatory agencies has tended to aggravate the industry's economic problems by increasing its costs and diverting its resources toward "nonproductive" investment. On the other hand, the goals of regulation remain legitimate and necessary, and are further from attainment in the steel industry than in virtually all others.

--Government intervention in the market is perceived as a major cause of the industry's problems. But the industry's problems seem so difficult that most solutions require some form of Government action.

The most central dilemma of all involves the trade-off between the need for Government policies which support capital formation and the risk that such help may do nothing to alter attitudinal problems affecting steel. Unless industry, labor, and Government all demonstrate attitudinal change and more effective collaboration, industry revitalization may not be achieved.

the workforce and the infrastructure which supports it. Absent a sound strategy for industry revitalization, much of this capital could be lost. Granted there are some communities in which steelmaking appears uneconomical now and where efforts to artificially reintroduce capacity may not be reasonable. On the other hand, there are also others which could continue to make steel economically if modernization investment takes place.

Other affected interests include industries which service steelmaking and those which use their products. Backward and forward linkages are the historic route by which communities and countries build an industrial base around their fundamental industries. A domestic steel industry, smaller in tonnage, product line and purchases will lead to fewer and weaker linkages. Steel users could import to make up for domestic capacity deficiencies but in so doing risk losing a competitive edge to direct-downstream industries abroad. Our customer survey illustrates that a loss in efficient domestic steelmaking presages a similar loss in certain steel-using industries as well. Consequently, the domestic industry's deterioration imperils a considerable share of the industrial base which is built forwards and backwards from the steel industry.

In summary, it is technically feasible to contemplate a revitalized, competitive domestic steel industry. The risks of supplanting reliance on obsolete capacity through increased imports outweigh, in our opinion, the potential benefits. Further, there are substantial positive reasons pertaining to national security and broad economic factors which support a major-sized domestic steel industry. The critical issue to be addressed, therefore, is how an effective revitalization strategy is to be formulated and implemented.

INDUSTRY REVITALIZATION STRATEGY MUST FACE DILEMMAS

Any serious approach to steel industry problems must address a variety of dilemmas. For example:

--Government imposed limits on domestic steel prices diminish potential profits, thereby making modernization and expansion investment more difficult. Furthermore, informal restraints, such as "jawboning", give industry management a non-market excuse for a poor earnings record. On the other hand, steel prices have generally been much higher here than they are abroad and they have been advancing much faster than the consumer or producer price indexes.

difficult choices among competing concerns. National security, balance-of-payments, and downstream industry needs individually would call for different capacity levels and would also have varying advantages and disadvantages as the industry grows or shrinks. Thus, basic factors that must be considered when establishing such a performance goal include:

--The point beyond which national security will be compromised if capacity drops (for instance, if steel capacity drops below a generally agreed upon level of peak demand, then it may have to be supported regardless of economics).

--A target market-share for domestic firms averaged over the course of the business cycle (for instance, a fully revitalized steel industry should be able to capture a generally agreed upon average of domestic sales).

--A target ratio of capacity to peak domestic needs (for instance, a fully revitalized domestic steel industry should be one able to support a generally agreed upon peak domestic demand--with the excess beyond that designed to cover both greater exports and the diversion of imports which occur when world markets tighten).

--The extent to which steel's modernization and expansion needs can be met by attracting internal resources and outside capital without depending on Government assistance. (For instance, a fully revitalized industry should be able to support itself on a self-sustaining basis but the timetable adopted for revitalization will likely affect industry ability for self-financing).

Suggested consideration of such factors in no way implies that Government should go about assuring the domestic industry any particular share of the market (except as national security may dictate measures to support some minimum level of capacity). Rather, they are intended to help guide formulation of effective Government policy. Only an industry which can produce steel competitively will survive in the world environment in the long run. An explicit performance goal would help determine appropriate Federal means toward achieving the ultimate objective.

We believe that a useful performance objective must involve some form of quantified goals. At the same time, we want to make it clear that we are not suggesting mandatory investment

THE NEED FOR AND ROLE OF AN INDUSTRY PERFORMANCE OBJECTIVE

We believe that any effective definition of Government policy to aid steel revitalization requires both a core objective and peripheral initiatives designed to be consistent with accomplishing the core objective. In essence, the core objective would be an overall national goal for the domestic steel industry's capacity and/or performance. Peripherals would relate to the range of key factors which influence movement toward the core objective--such as means for stimulating competition, assisting capital formation, or administering environmental regulations. The peripherals must be carefully formulated and drawn together so as to support the core. Without a core, Government efforts toward steel are likely to be incoherent. But just as importantly, a core which is not well related to the peripherals is a hollow core.

The Subcommittee on Trade of the House Ways and Means Committee has been trying to define a core policy objective in terms of efficient domestic steel capacity in relation to total anticipated demand. We believe that the objectives-setting approach being pursued by the Subcommittee represents a significant advance. The Subcommittee Chairman introduced hearings on the steel industry in 1979 as follows.

> "Beginning with this hearing and over the next several months, we will be seeking to develop a public policy on certain fundamental questions:
>
> How much domestic steel capacity (in relation to demand) does the United States need (80 percent? 100 percent?), and in what product lines?
>
> In those areas where plants are being scrapped and workers laid off, what should and what can be done to develop new modern facilities and steel-employment jobs? How can that capacity be maintained and the steel plants be made increasingly more efficient and modern?
>
> We are looking at trade problems but we are even more interested in helping to develop a coordinated successful industrial policy for steel. We need to develop a national policy which will coordinate trade policy, tax laws, pollution, and other regulatory programs, and anti-trust policy in such a way as to give America the steel industry it needs for the future." 4/

Deriving a quantified performance goal for the domestic steel industry, in terms of efficient capacity, would require

--Reinstatement of an improved trigger price mechanism that will provide expeditious investigation of possible unfair trade practices. The new TPM will involve an average increase of 12 percent in trigger prices, contain an anti-surge mechanism, contain improved means of adjustment for currency fluctuations and new monitoring procedures, and will be maintained for up to 5 years. These measures will help ensure that unfair import competition will not disrupt the steel industry modernization program. In return, industry anti-dumping complaints are to be withdrawn.

--A program for industry compliance with environmental requirements to help the steel industry attain environmental goals in conjunction with the modernization process. This includes a proposed amendment to the Clean Air Act for steel companies that will provide a case-by-case stretchout, up to 3 years, of expenditures on environmental controls if such delays are necessary to achieve modernization goals.

--Further examination of possibilities for cooperative research and development to foster adoption of advanced steelmaking technologies.

--Proposed expansion of programs to help workers, their families, and communities heavily affected by changes in the steel industry.

The announced program perpetuates experienced problems. It reiterates only a broad objective ("to assist the American steel industry in its efforts to modernize and regain competitive strength"); it defines no time period for goal accomplishment; and it does not reflect adequate coordination of component policy proposals. For example, we calculate (see appendix II for details) that the program's elements directed toward the first 5-year capital shortage problem (depreciation schedule changes plus import limitations and deferred spending on environmental controls) will be insufficient and will not meet the capital needs of the industry's own target performance objective. Yet, imports are to be constrained through the trigger price mechanism for only a 3-5 year period, after which the industry is to have achieved competitive status through modernization investment.

Our estimate (in 1978 dollars) for the entire set of capital formation assistance measures included in the latest program is as follows:

or production levels for the steel industry. The critical matter is the definition of a useful performance objective, not its form. Another potential definition comes from the industry itself and is reflected in the Steel Tripartite Advisory Committee report. The industry contemplates a long-term (25-year) investment program to achieve an efficient raw steelmaking capacity of 155 million tons through a 4 percent annual replacement rate for steelmaking equipment. The industry estimates a need for an additional $2 billion (approximately) annually for the first 5 ("catch-up") years of a revitalization program, following which it ought to be able to fund the replacement cycle from retained earnings.

At this point it is worth reiterating our belief that the Solomon report strategy failed for at least three reasons:

--The plan contained only a very general statement of objectives, "to assist the steel industry in a manner which will stimulate efficiency and enable the industry to compete fairly." Thus, the plan lacked specific objectives for the industry, and there was no way of determining whether the solutions proposed could accomplish the task at hand.

--The Administration did not make a meaningful attempt to coordinate the various components recommended in the Solomon report and the agencies whose policies affect steel.

--The plan did not recognize the need for a countercommitment from the industry or its work force.

It is not apparent that the latest "Program for the American Steel Industry, Its Workers and Communities"* succeeds in avoiding those basic deficiencies.

The major components of the new program are:

--Measures to increase industry investment in modernizing its plants and equipment. This includes proposals for a 40 percent liberalization of depreciation rules, an extra 10 percent credit for investment in distressed areas, and refundability provisions for both the regular and new investment credits. In conjunction with the actions proposed in the trade and environmental areas, these tax measures are to provide a major stimulus for steel industry modernization.

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*The President's recently announced program based on the report of the Steel Tripartite Advisory Committee.

--can be used over time as a benchmark to measure success or failure of initiatives, and

--over time would itself be subject to reevaluation.

COMPONENTS OF A COMPREHENSIVE STEEL POLICY

The core of a national steel policy ought to be a quantitative, timeframed performance objective for the domestic steel industry. The supportive policies ought to be formulated for a range of important peripheral activities.

The following sections of this chapter discuss policy considerations for a number of important peripheral areas, though not all. Steel-related research and development, for example, as examined by OTA, is cross-referenced where appropriate.

Compensation Restraint

The level and growth of steel industry wages, salaries and dividends is not normally a matter in which Government should exercise direct influence. It is a responsibility best left to the parties involved. Nevertheless, we believe it is entirely reasonable that Congress assess the willingness of the steel industry to moderate wage, salary, and dividend levels in behalf of its own revitalization.

As shown in chapter 4, labor compensation rates have been raised to levels well in excess of international competitors. To the extent that high operating costs render the industry less competitive, controlling labor costs must be an essential ingredient of a viable revitalization strategy. Labor represents about 35 percent of domestic production costs. Were steelworkers compensated at the historic level of 130-135 percent of the average manufacturing wages instead of the current 175 percent level, production costs would be $4 billion lower a year, or $30-$40 less per ton.

The higher the wage premium that the industry must pay, the more difficult any revitalization will be. But in considering how the problem might be addressed, there is no necessary implication that the workforce has to take direct pay cuts. A program of future compensation increases designed to track inflation 5/on a dollar-by-dollar basis could restore the historic 130-135 percent premium in 12 to 25 years, depending on the real growth in manufacturing compensation. 6/ The success of such a gradual deceleration, however, will depend on how much of the industry actually survives this 12 to 25 years.

Faster depreciation	$ 564 million
Depressed area tax credit	270
Limited-life environmental extension	300
Operating and maintenance savings on retrofit	130
Higher prices from new TPM	425
Greater sales from new TPM	54
	$1,743 million (1981-85), or
	around $ 350 million a year maximum

Even if Congress accepted all the proposals, the $350 million annual capital assistance would fall far short of the $2 billion, required annually for a 5-year period, which the Tripartite Committee identified as the industry's capital requirements for modernization. We do not even attempt to estimate how long a period would be required to achieve modernization with the proposed level of capital assistance, but it would likely exceed the industry's 25-year objective, and most certainly exceed the 3-5 year period proposed for import protection.

These points are noted not simply to fault the Administration's steel program nor to endorse in any way the specific industry objectives defined for revitalization. They are rather intended to show that in the absence of a generally agreed upon performance objective for the industry it is just not possible to judge the adequacy of the set of proposals for industry revitalization, nor be able to suggest how they might be usefully amended.

We realize that efforts to establish a performance objective for the sector must be accomplished carefully, so as to avoid any commitment to preserving obsolete plant, operations or attitudes. But if the task is not carried out, and revitalization policies structured accordingly, then the inconsistent and inefficient policy "drift" and conflict of recent years is almost certain to continue. We believe a flexible performance goal system

--would provide a framework for judging the size and type of Government initiatives needed to improve the steel industry's competitiveness,

with only 5 to 10 million tons of new capacity to replace it. Should this occur, 90,000 to 100,000 jobs associated with retired capacity would be cut, to be replaced by no more than 10,000 to 20,000 jobs gained. Thus, an estimated net loss of 80,000 jobs by 1990 may be likely.

On the other hand, among revitalization scenarios are those which foresee a 10 percent increase in capacity. Obsolete capacity in either case is closed. Under revitalization a few million more tons could be retired while the remaining capacity is upgraded to average. Similar employment reductions could occur as the remaining average capacity tonnage becomes somewhat more productive. Hence, the job losses at previously obsolete or average plants could run to 120,000-150,000. The big difference comes in the building of new capacity and replacement capacity--perhaps as much as forty to fifty million tons which would employ about 80,000-110,000 workers. Total job loss would thus be nearer to 40,000 workers. It is plausible to argue that a revitalization program could save jobs because greater productivity would be more than offset by greater capacity. In either case, steel employment is likely to continue dropping. However, with revitalization, an attrition rate near 4,000 a year could be absorbed within the context of an annual retirement rate several times larger. But without moderation of wage demands, it will be difficult under any scenario for the industry to become competitive again. And if the industry is not competitive, there will be labor force reductions anyhow but they will come via increased imports and would be sudden, chaotic, and ultimately more harmful.

The largest steelworkers union has already adopted a policy favoring rapid investment in industry modernization, even if it leads to an overall reduction in the steel workforce. This commitment ought to be actively supported

--by management, through more collaborative planning of modernization investments and disinvestments (closing of obsolete facilities), and

--by Government, through appropriate worker-community adjustment assistance (as through Administration proposals to be submitted for congressional approval).

The Congress ought to emphasize the public interest implications of future steel industry labor-management relations and negotiations by examining the commitment they offer on behalf of industry revitalization. Manifestations of a meaningful counter-commitment to Government assistance should include

--a continuation, on labor's part, of its helpful attitude towards adoption of efficient new technology,

It may be necessary for industry and labor to explore new ways for determining compensation levels or benefit packages. One way which received nationwide publicity in the summer of 1980 is to do what Nucor--a prominent mini-mill--has done. Their workers are given performance expectations which qualify them for additional wages if exceeded. At first the management feared that some workers would double their salary under the plan, but they found that even if some workers did so, the net productivity gain more than justified it. Nucor is now among the most efficient domestic steel firms.

Another option for consideration is to have increases in worker compensation lag behind inflation in return for direct stock ownership. For instance, for every after-tax dollar by which the wage base does not fully absorb inflation, the workforce could be granted a dollar's worth of stock at current or pre-specified market values. 7/ This could constitute new equity in the industry reserved for job-creating steel investment.

Such transfers would allow labor greater participation in the industry. Another potential bonus of the equity alternative is that moderation in compensation will, over time, make the industry more competitive, and thus more profitable, in turn leading to higher valuations of the workers' equity stake and thus a substantial appreciation over the acquisition cost at which the workforce receives the stock. 8/

There is no guarantee that labor will agree to such suggestions. Nor will management necessarily accede to the compromise and the need for imagination to arrive at workable solutions. But, we would point out, either management's or labor's failure to support increased industry competitiveness would be ultimately counter-productive. Eventually a needlessly high-cost industry will find itself unable to achieve any significant recovery in competitiveness.

The issue of workforce size also deserves consideration. In a cyclical industry such as steel, it is understood that there is no way to guarantee total job security as long as there are business cycles. But a well-conceived transition to a more stable, even if smaller, workforce is certainly possible.

During the most recent business cycle peak, early 1979, 480,000 were employed in basic steelmaking or about 3.1 employees per 1000 tons of annual capacity. However, this average hides a range of somewhat over 2 employees per 1000 tons in modern plants to 3 1/2 - 4 employees per 1000 tons in the more obsolete plants. Without revitalization, it is possible that perhaps 25 million tons of obsolete capacity would close

To the extent that damaging price increases (damaging from a domestic competition standpoint) might be caused by exports of domestic scrap, export controls might be usefully imposed. The Commerce Department already has authority to impose such controls, although it recently decided against monitoring exports of ferrous scrap as requested by a coalition of ferrous scrap consumers.

Another option for augmenting competition through the mini-mill sector is to expand that sector's feedstock choices. One potentially important alternative supply source is reduced iron. (The technical details regarding direct reduction are included in the OTA report, Technology and Steel Industry Competitiveness.) If a revitalized, competitive industry is the national goal, then an enlarged Federal role in research and development of new feedstock sources to augment competition may well be in order.

Risk-taking and Time Horizons

Steel companies which are too risk-averse will ultimately be overtaken by those more willing to take chances. Risk-aversion comes in many forms

--an unwillingness to try new technologies or products (e.g., low R&D),

--a shift in favor of short-term investments over long-term ones (e.g., a lack of major capital commitments, or minor patch-up over substantial upgrading),

--a general desire to minimize, even at very high costs, potentially disruptive but uncertain events, (e.g., the Experimental Negotiating Agreement), and

--a stong commitment to historic operating practices.

Such indicators describe the major domestic steel industry firms more than they do with most other industries. Perhaps the most telling indicator of the industry's short-term horizons has been its low spending on research and development. As OTA 9/ has pointed out

> "Domestic steel industry R&D expenditures, as a percentage of sales, have declined over the years, and they are lower than for most other basic industries in the United States. Expenditures for basic research are particularly low. There is no trend of declining dividends as a fraction of aftertax profits comparable to the trend of declining R&D spending * * *."

--restraint in setting wage, salary, and dividend levels and for devising innovative methods as needed to redress compensation premium problems, and

--new initiatives to minimize adverse job dislocation effects arising from plant closings, adoption of new technology, or business cycle fluctuations.

Improved Competition

Many argue that if investments in the steel industry are made more attractive, then capital will flow to needed investments in that field. Hence if one improves incentives sufficiently, the steel problem would be solved. We believe that efforts to support the entry or expansion of firms with healthy competitive attitudes and encouragement of broader risk taking within the industry are needed in addition to increased incentives. To the extent that competition is required to galvanize the steel industry into action, new domestic competition will have to be encouraged, particularly if limits have to be placed on foreign competition (discussed below). It is not certain that allocating more resources, for example, to major producers will sufficiently improve competitive attitudes. To help protect steel consumers, alternative sources of competition should be encouraged.

The best new source of competition could come from the mini-mill sector. This is so, first of all, because of the lower entry costs ($50 to $100 million for the larger of the new facilities) in contrast to the expense of putting together an efficiently sized integrated mill (one billion dollars on up). Our consumer survey indicates that the mini-mills have received good notices for their hustle, competitiveness, and attention to service. Such performance, coupled with relatively low investment costs, has yielded good earnings and robust growth prospects. Enough new tonnage has been announced or begun recently to raise this sector's capacity by at least 30 percent through 1982. The mini-mill sector has other advantages. It is a magnet for foreign capital, as shown by recent investments. It has countered imports in reinforcing bar, merchant bar, and presently in wirerod; and it is a ready avenue for backwards integration (i.e., customers supplying their own steel).

Nevertheless, further expansion of mini-mill production may be hobbled by future scrap shortages with attendant high prices. Even though the minis survived the most recent scrap price hikes (from $56/ton in 1977 to $73/ton in 1978 and $96/ton in 1979) in good shape, further escalation of scrap prices could eventually choke the growth of this source of new competition.

loss in taxation revenues. Such a change coupled with a comparable percentage reduction for structures from 35 to 25 years would reduce the operating profit needed for justifying a greenfield mill from $134/ton down to $119/ ton (see Appendix I), making greenfield investment feasible under a much wider set of assumptions. A switch to taxation schedules under the Capital Cost Recovery Act of 1979 would lower this further to $81.55/ton. Such a change would entail, however, only modest tax revenue losses in the long run. 10/

A further option for one to consider, if other incentives prove insufficient to reach modernization goals, would be to revive some of the incentives used in the 1950s to spur capacity investment.

In mid-1953, for instance, Congress mandated (P.L. 287) that farmers and warehousemen could amortize their costs for building more grain storage space over a five year period. This was done to accommodate bumper harvests in 1952 and similar expectation in 1953. This special treatment prevailed through 1956, and worked to induce several million bushels of new storage capacity.

As another example, during the Korean War, the National Production Agency granted special depreciation privileges to certain firms so that defense-critical materials capacity could be built. The provisions were repealed several years ago, having lain virtually idle since the mid-50s. Were they to be revived, the five-year straight-line writeoff might have to be reduced to two years to take account of changes in overall tax laws and inflation since then. Such provisions could be used to finance new entrants (as was done for aluminum in the mid-1950s), capacity for energy uses (e.g., tubular goods or specialty synfuel plate), or defense-critical steels.

Environmental Regulations

Although we have found no compelling reason at this point to suggest loosening regulatory standards, we believe that the greater use of flexibility, predictability, and market-like incentives would go far to reduce their unwanted side effects. In their most basic form, environmental controls make firms spend money to reduce pollution. However, both existing law and regulation dictate how this is to be done. A 1977 report by the Council on Wage and Price Stability pointed out that legal vagaries can make firms spend more money to clean new capacity than to clean old capacity, can induce firms to locate replacement equipment only at sites where equipment is junked, and can involve long lead times in the process. All this may inhibit industrial modernization without actually helping to clean the environment.

Long strides have to be taken to reinvigorate the industry's willingness to take the right kind of risks. To do so will require both rewarding success and penalizing failure more clearly. For this reason, we believe that the artificial rescue of particular firms is undesirable because it would work against penalizing failure clearly, and would reinforce conservative, risk-averse, short-term management strategies. To the extent that a firm is unable to survive when its competitors can, the industry is better off with its absence, so that better adapted firms and management can take its place. The Government should attempt no special bail-outs of individual failing steel companies.

At the same time, any firm's capacity for taking risks has its limits. Although a certain amount of uncertainty is inevitable in the steel market, Government policy should be weighted to reducing unnecessary variance and external risk.

Accelerating Depreciation

The chief means of increasing the incentive to invest capital is to let profits rise or lower investment costs. Although the former is important, it may not always be in Government's power to achieve. Accelerated depreciation, however, is guaranteed to do the latter.

The benefits of faster depreciation would be a much quicker payback to those making heavy investments without conferring extraordinary tax advantages to firms who maintain their expected investment outlays. This allows a large change in incentive, and hence behavior, with a relatively low revenue loss.

One such proposal, the Capital Cost Recovery Act of 1979, (known also as the Jones-Conable Act) would lower depreciation lives for all industries to five years for equipment and ten years for structures. Our evaluation indicates that such provisions, however, confer particularly good benefits to those who invest in structures rather than equipment. Since around 10 percent of all steel investment goes into structures as opposed to around 35 percent of all business investment, steel may be disadvantaged if it is a fixed investment pool which is to be reallocated among industries.

Another example of accelerating depreciation would be a specific reduction in steel equipment lifetimes from the current 15 years to a new level of 9 years such as is permitted the chemical industry. This would yield sharply higher returns for steel projects in exchange for a moderate long-term

Price Strictures: Sporadic and General

Through intermittent use of the tactic of price "jawboning", Government has achieved little or nothing positive. On the one hand, the tactic does little to influence actual transaction prices. On the other hand, potential investors within the industry perceive the tactic to have a negative effect. To the extent that the belief is reflected in action, it mitigates against expansion and modernization expenditures which could reduce costs. Additionally, it inhibits competition by discouraging potential entrants averse to the prospects of extended Government intervention in pricing decisions. The wisdom of bearing down on a basic industry whose returns are among the lowest in manufacturing is not selfevident. If Government believes that current steelmakers cannot make steel cheaply enough, it should be trying to get others to do it more cheaply.

Steel's treatment under economy-wide price controls (as in 1971-1974) or price standards (as in 1978-1980) varies depending on the purpose, nature, and effectiveness of the controls regime. As shown in Chapter 6, the consequences of the 1971-1974 price controls definitely worked against modernization investment; the standards in effect in 1979 probably did the same. This is not to argue against price controls per se. But it must be recognized that if the Nation establishes a performance objective for the steel industry, then there will be need to consciously balance that goal against the objectives of future price controls.

Trade Policy

We previously discussed one aspect of trade policy--the issue of export controls on ferrous scrap. But any discussion of options for dealing with the steel industry's problem must necessarily consider trade policy in a much broader context.

The steel industry will require substantial capital to finance a program of modernization consistent with a legislated industry performance objective. The industry's annual investment needs have been estimated at approximately $2 billion higher than current annual outlays, through at least the mid 1980s. Faster depreciation would assist in meeting capital requirements, as would greater flexibility in administering environmental standards. But a major source of capital might be industry profits from steel sales, and some greater form of trade restraint to increase the market share for the domestic industry could be necessary. However, we believe that no final decision regarding import restraints should be made until a consensus is reached on the industry's capital needs and how

U.S. Steel's difficulties at its Homestead mill demonstrate the problems that a lack of flexibility can cause. The company is currently asking EPA to revise its historic $400 million consent decree in Western Pennsylvania. One official noted in U.S. Steel's behalf, pertaining to the Homestead portion of the decree,

> "If we were allowed instead to put that $50 million to $75 million toward construction of the new Homestead steel furnaces and control of our (new) furnaces. . .the result would be much cleaner air than we will achieve (by retrofitting older facilities)." 11/

The steel industry is a good place to get back to the basics of getting the most reduction in emissions in the most efficient manner. This would involve expanding the fledgling "bubble" concept. Firms could be given a base target which specified how much emissions/effluent reduction they must attain under current law from all their facilities summed together. This quantity would be set for several years ahead (with internal deadlines). From that point, however, firms could exercise the maximum freedom to raise, retire or clean up capacity so that the total weighted average amount of reduction would be achieved within each EPA region.

EPA is presently working with industry to implement the bubble concept for individual plant sites. Extensions of the bubble concept which warrant statutory amendment to allow further examination of their feasibility, and appropriate adoption, include 1) trade offs allowing eliminating one pollutant more and another pollutant less, 2) paying another firm so that the latter clean up more, 3) getting partial credit for a retirement (which results in zero emissions) or a new facility which pollutes less than standards, or 4) delaying reaching certain deadlines in return for reaching others earlier.

The relative importance of cleaning one pollutant as opposed to another, or in one type of locale as opposed to another, would be prespecified. As further inducement, the permitting time for a new facility would be limited to the time it takes to estimate the probable pollution load and check this total against new source performance standards and the firm's overall emissions-reduction schedule. Essentially, this would be a system which provides a minimum of Governmental dictation over industry's choice of abatement strategies with corresponding gains in flexibility, chances for new technology, and market-like mechanisms for inducing proper clean-up behavior.

The following is an illustration of four options that could be pursued under existing trade laws. The first two are broader taxes, while the latter two involve quantitative restrictions:

1. Protection from dumping and subsidized steel imports.

2. Tariff adjustments.

3. Import quotas.

4. Orderly Marketing Agreements (they differ from quotas in being negotiated, and offering coverage only against imports from signatory countries).

Using the above criteria it is possible to sketch some comparisons between alternative import restraints.

Predictable Effects

With quotas one could predict that imports would be close to or at an allowable limit, (say the 16-17 million tons which imports are predicted to be for 1980) and that their prices would be more closely related to domestic rather than world levels. They would thus go farthest in reducing price and market-share instability as a source of investment risk. Orderly market arrangements yield more uncertainty because non-signatories could vary their imports. Additionally, under the Voluntary Restraint Agreements, several signatories shipped in excess of quota in 1971. Higher tariffs per se may yield a predictable decrease in imports from what they otherwise would be, but the actual level and price of imports would vary with world market conditions. Dumping or countervailing duties have an even less predictable effect because they are imposed on some countries and not others. Thus it is difficult to tell in advance whether it will be other imports or domestic production which makes up any shortfall in imports from affected exporters.

The import limiting effects of the trigger price mechanism are not readily predictable. The limitation will vary in effect depending on (1) the level at which TPM is set, and (2) the quality of program administration. On the latter point, there is no way of forecasting how successful recently claimed improvements in TPM administration will be.

Acceptability

The old TPM proved acceptable to our foreign trade partners. However, the new TPM has "anti-surge" provisions under which the

best to service them. Even then, the risks inherent in any system of restraint must be carefully assessed.

There is a need to think about the import restraint problem in the context of a performance objective for the industry. We note that the ability of any particular form of trade restraint is more dependent on the degree rather than the form of such restraint. There is an inescapable tradeoff between promoting favorable conditions for domestic industry sales and earnings on one hand and adding to consumers costs and exporting nations' objections on the other. Nevertheless, certain forms of restraint may offer better tradeoffs than others.

Rationales for import restraint fall into two categories. In the case of steel, some measure of restraint is available if effective protection is afforded from dumping and subsidized steel imports under the Tariff Act of 1930, as amended. The other category is to impose import quotas, tariff adjustments, orderly marketing agreements, or any combination thereof under the "escape clause" of the 1974 Trade Act, as amended.

To some extent, basing an import restraint policy on anti-dumping or anti-subsidy provisions may seem more defensible because they are undertaken on behalf of international conventions which define fair trade. To another extent, however, the calculations of constructed value which underlay the distinction between fair and unfair trade rely on debatable distinctions between labor and capital as an input to steelmaking costs. For instance, Latin American and Korean steel imports are competitive in U.S. markets in large part because wages are low there. Many European exports are, however, competitive in U.S. markets only because operating profits are low. Only the former exports are considered fair; the latter are often cited as being sold at less-than-fair-value. Furthermore, if it is a country's policy to subsidize steel exports, this can be as much of an advantage to American steel consumers as, say, their having an accessible resource base. 12/

We believe that these alternative forms of protection should be evaluated not on how they distinguish between supposedly fair and unfair trade, but on how well they meet various practical criteria:

--predictability of their first-order effects on the amounts and price of steel imports,

--acceptability to trade partners,

--administrative feasibility, and

--optimal duration.

Summary

Any regime of trade protection has costs and benefits. Under current capacity conditions, import restrictions make domestic use of steel more expensive, make domestic steel-using industries somewhat less competitive in world trade, promote imports of steel products as a way of circumventing restrictions on steel, and could tempt industry to postpone attitudinal and modernization decisions. Conversely, experience indicates that even with incentives for capital formation, without import controls the domestic steel industry may not be able to retain the market share and prices necessary to make the profits to finance capital needs. Specialty steel producers did respond to the modernization opportunity provided by quotas (1976-1979) with sharply increased capital investment that made their segment of the industry more competitive. 13/

We believe that the steel trade policy issue is inextricably related to the potential capital needs and resources of the domestic steel industry. Once a sufficient analysis of the former is established, any import restraint program should be designed to best support a performance objective as established for the steel industry.

POLICY ADMINISTRATION

As we noted toward the close of chapter 6, another major lesson to be drawn from experience under the Solomon Plan is that the method of administering a necessarily multi-faceted steel policy to achieve industrial revitalization must be as much a matter of concern as policy content. It is by no means clear that existing Executive Branch authorities or organizational structure are adequate for the administrative task at hand.

We have been striving to generate broad public awareness that the Nation has entered a new era with regard to basic materials availability. The steel situation typifies the type of problems we are beginning to encounter with a number of materials that are important to America's industrial health and performance. But because materials-related problems vary so much--between the industries that produce and process them, between the materials commodities themselves, and even between different periods of time--we have stressed the need for establishment of a materials policy planning process for identifying and dealing with materials problems of national consequence, rather than a focus on any one policy per se. (For a fuller explanation of these concepts, see "Learning To Look Ahead: The Need For A National Materials Policy and Planning Process," EMD-79-30, April 19, 1979).

Commerce Department could launch a product-specific dumping investigation whenever imports claim over 15.2 percent of domestic demand and domestic capacity utilization lies below 87 percent. Trade partners have expressed concern that this program might translate into quantitative restrictions. Even so, the fact that several European steelmakers had suggested orderly marketing arrangements (e.g., voluntary quotas) as a compromise to U.S. Steel's anti-dumping suit indicates that quantitative restrictions of some type are at least partially acceptable. Making quotas mandatory, however, would probably further reduce acceptability. Higher tariffs on steel imports under GATT would require the United States to offer equivalent trade concessions such as lower tariffs on other imports. Finally, some of the possible outcomes from trying to control imports through anti-dumping suits such as U.S. Steel's risked antagonizing major trade partners into retaliation.

Administrative Feasibility

Higher tariffs are probably easiest to administer within the context of existing trade laws. Quotas and orderly marketing arrangements would require customs officials to police quantities by country of origin while they assign the proper tariffs. Dumping duties, once determined, are also easy to administer but their determination can be difficult--how difficult is evident from the fact that TPM, in theory, was to be a short-cut to anti-dumping enforcement. Finally, the difficulties of enforcing TPM (or any minimum border prices) can be gauged by their ineffective administration to date. Future administration, even if improved, can be confounded by such marketing tactics as

--meeting trigger prices on imports at the border and then subsidizing domestic distribution in order to underbid domestic prices,

--selling to a foreign branch of a domestic firm,

--mislabeling particular steel products, or

--selling unmonitored but closely related steel products in lieu of steel itself.

Set Duration

Any of the possibilities could be given a set duration. Preferably, trade restraint should last long enough to plan and complete investments, but not so long as to underwrite a cost structure geared to permanent protection.

NOTES TO CHAPTER 7

1/ Fifty billion dollars is 115 million tons annual domestic demand times the Iron Age composite price of $435/ton for carbon steel. Adding in the higher prices for alloy and specialty steel together with steel castings and directly produced products such as wire (from wire bar), corregated pipe and tubing (from tubular goods), structural members (from I-beams and plates), etc., and the figure approaches $70 billion. However, several billion dollars flow the other way as material and energy inputs to steel.

2/ American Metals Market, June 5, 1980, p. 11.

3/ Sixty-four billion dollars is the total steel, steel-related, and non-steel sales of the domestic steelmaking companies or their divisions as measured by the AISI. AISI's financial data covers 88.4 percent of all steel production with a measurable sales total of $56.7 billion. Our figure of $64 billion results from a scale-up to 100 percent.

4/ Problems in the Steel Market, Field Hearings before the Subcommittee on Trade of the House Committee on Ways and Means (Serial 96-68), 1979, p. 3.

5/ As defined by the GNP deflator.

6/ If the growth of the real private business sector compensation is what it was between 1957 and 1973 (2.4%) it will take 12 years. If it is what it has been between 1973 and 1979 it will take 25 years. This assumes that real compensation levels in manufacturing rise with earnings in the private business sectors as well as productivity.

7/ Stock transfers under an employee-stock-ownership plan are tax deductable.

8/ The steel industry pays its workforce around $16 billion now. If compensation levels rose at a rate 2 percent less than inflation, the prior ratios of steel compensation to the manufacturing average would be restored in 6 1/2 to 9 years. At the same time, if the difference (after taxes at a 40 percent rate) were converted to equity, $4.7 billion would be accumulated after 6 1/2 years and approximately $8 billion at the end of 9 years.

9/ OTA, op. cit p. 18.

Were there existing an institutional element responsible for exercising foresight and alerting responsible officials, including Congress, with regard to prospective materials availability problems warranting concerted Federal response, such an organization might also be charged with overseeing implementation of multi-agency action plans such as is required for steel industry revitalization.

In the absence of a designated institutional element, however, and as an interim measure, the Secretary of Commerce could be given primary responsibility for developing a comprehensive steel policy, subject to the approval of the President, and taking the lead in its implementation. The Department of Commerce has many responsibilities which could allow it to serve as a focal point for steel policy. The Steel Tripartite Committee, already involving Commerce, provides a high level forum for identifying and discussing the industry's problems. Commerce has recently reorganized to consolidate the Government's trade policy functions. The Department also has primary responsibility within Government to develop a new program to promote American industrial productivity, especially from the standpoint of technological innovation, a key element in revitalizing the domestic industry. The Economic Development Administration (EDA) within the Department has programs to aid these communities which would be affected by steel plant closings, and it also has programs to help diversify the economic basis of communities that are now overly dependent upon a particular industry or industrial sector. Further, the Assistant Secretary for Science and Technology and the National Bureau of Standards are in a position to provide scientific and research assistance that may be needed to develop and implement a new policy for steel. Finally, the newly created Deputy Assistant Secretary for Industrial Policy could serve as a link between a policy for steel, and broader efforts to articulate a program to increase the overall competitiveness of American industry.

Conversely, the Commerce Department might be judged as being too long associated with the development of problems now plaguing the steel industry to be capable of formulating an adequate revitalization strategy. Further, it might not possess sufficient authority to forge an effective interdepartmental program, taking proper account of diverse requirements such as taxation depreciation schedules and pollution abatement expenditure levels. Such considerations may require the establishment of steel policy administration responsibilities within the Executive Office of the President.

The matter of policy administration, particularly when several agencies and departments are involved, is a difficult but vital concern. The Congress must be prepared to give it explicit attention.

CHAPTER 8

CONCLUSIONS, RECOMMENDATIONS AND AGENCY COMMENTS

CONCLUSIONS

Steel is important to any industrialized country. Access to reliable, low-cost sources of steel is essential to the competitive health of the many industries such as machinery, vehicles, and construction, which are the essence of a production economy.

America's domestic steel industry is in poor economic health and an extension of current trends indicates that it will become disturbingly worse. It is possible to envision a future of heavy dependence on steel imports, possible shortages of steel, and growing disadvantages to the Nation's steel buyers. Notwithstanding the presence of an active international system of global steel production, we conclude that a serious effort to modernize the domestic steel industry is warranted.

Any Government efforts directed toward revitalization of the steel industry should be clearly related to an overall materials policy and planning process. In earlier reports, we have argued that there is no focal point for making decisions to assure materials availability to the economy, particularly the industrial sector. There is a need for a materials policy process and structure within the Executive Branch which can take the lead in identifying critical materials issues and problems and developing the information necessary to provide a basis for action. While the general issue is drawing increased congressional attention, we believe that the steel problem deserves specific, immediate action.

Our overall conclusions parallel those of both the Office of Technology Assessment (Technology and Steel Industry Competitiveness: 1980) and the Steel Tripartite Committee, which served as the basis for the Administration's latest program proposals.

We also agree on priority policy action areas for industry revitalization. These include

--assistance with capital formation to promote modernization investment,

--an effective trade policy to insure reasonable control of steel imports, and

10/ Forty percent reduction in equipment and structure lives however, would have a less dramatic effect on the industry's long-run cashflow. Assuming an annual nominal growth rate of investment outlays of 10 percent (of which 8 percent is inflation) and a $3 billion real budget (90 percent equipment), the industry's cash savings from depreciation would rise only $150 million/year (from $900 million to $1.05 billion) in the long run. Similarly the Capital Cost Recovery Act would increase this cash-flow by another $125 million a year.

11/ American Metals Market. April 4, 1980.

12/ A country may choose to support sales and capacity during downturns so as to allow it to survive and take advantage of shortage-fed high export prices during upturns. However, anti-subsidy provisions do not distinguish between permanent and predatory support very well.

13/ Specialty steel producers have recently petitioned the President for orderly market agreements with key exporting countries.

(approximately) annually for the first 5 ("catch-up") years of a revitalization program, following which it ought to be able to fund the replacement cycle from retained earnings.

Our estimate for the entire set of capital formation assistance measures included in the latest Administration program is as follows:

Faster depreciation	$ 564 million
Depressed area tax credit	270
Limited-life environmental extension	300
Operating and maintenance savings on retrofit	130
Higher prices from new TPM	425
Greater sales from new TPM	54
	$1,743 million (1981-1985), or around $350 million a year maximum

Even if Congress accepted all the proposals, the $350 million annual capital assistance would fall far short of the $2 billion which the Tripartite Committee identified as the industry's capital requirement for modernization. We do not even attempt to estimate how long a period would be required to achieve modernization with the proposed level of capital assistance, but it would likely exceed the industry's 25 year objective and most certainly exceed the 3-5 year period proposed for import protection.

These points are noted not simply to fault the Administration's steel program nor to endorse in any way the specific industry objectives defined for revitalization. They are rather intended to show that in the absence of a generally agreed upon performance objective for the industry it is just not possible to judge the adequacy of the set of proposals for industry revitalization, nor be able to suggest how they might be usefully amended.

We realize that efforts to establish a performance objective must be accomplished carefully so as to avoid any commitment to preserving obsolete plant, operations or attitudes. But if the task is not carried out, and revitalization policies structured accordingly, then the inconsistent and inefficient policy "drift" and conflict of recent years is almost certain to continue. We believe the steel sector is too important to allow that to happen. Consequently, we strongly endorse a flexible performance goal system which

--increased flexibility in administering environmental laws.

But despite the extensive attention given to the steel industry's situation, we believe there is still a fundamental problem with the prescriptions that have been offered. The prescriptions have not included a useful performance objective, as illustrated by the recently announced "Program for the American Steel Industry, Its Workers and Communities."

We critiqued in some detail the predecessor Solomon plan and concluded that its strategy failed for at least three reasons:

--The plan contained only a very general statement of objectives, "to assist the steel industry in a manner which will stimulate efficiency and enable the industry to compete fairly." Thus, the plan lacked specific national objectives for the industry, and there was no way of determining whether the solutions proposed could accomplish the task at hand.

--The Administration did not make a meaningful attempt to coordinate the various components recommended in the Solomon report and the agencies whose policies affect steel.

--The plan did not recognize the need for a counter-commitment from the industry and its work force.

These basic deficiencies must be avoided in future attempts to consider Government initiatives and policies toward the steel industry. Yet the Administration's newly announced program, like the Solomon plan, states only a broad objective--"to assist the American steel industry in its efforts to modernize and regain competitive strength". It defines no time period for achieving the stated goal, makes no provision for coordinating component policy proposals, and calls for no specific counter-commitment from management or labor.

With regard to an industrial performance objective, our report discusses various criteria which might be employed in establishing a useful one. Another set of criteria comes from the industry itself and is reflected in the Steel Tripartite Advisory Committee report. The industry contemplates a long-term (25-year) investment program to achieve an efficient raw steelmaking capacity of 155 million tons per year through a 4 percent annual replacement rate for steelmaking equipment. The industry estimates a need for an additional $2 billion

a. Assistance on near-term (5-year) capital formation and investment needs.

b. The adequacy of proposed import controls to jointly satisfy the earnings-investment needs of producers, the inflation protection needs of domestic consumers, and trade access opportunities for low-cost foreign suppliers.

c. Proposed amendments to environmental laws to insure that they reflect both a commitment to reasonable administrative flexibility and industry achievement of environmental protection standards.

4. The Congress should consider the kind of labor and management commitments to industry revitalization which presently exist and/or which may be needed. Meaningful labor and management commitments could include:

a. Continuing labor's helpful attitude towards adopting efficient new technology.

b. Restraining wage, salary, and dividend levels and devising innovative methods as needed to redress compensation premium problems.

c. New initiatives to minimize adverse job dislocation effects arising from plant closings, adoption of new technology, or business cycle fluctuations.

AGENCY COMMENTS

We provided draft copies of this report to the following agencies for review and comment.

Department of Commerce
Department of Defense
Department of the Interior
Department of Justice
Department of Labor
Department of the Treasury
Department of State
Environmental Protection Agency

--would provide a framework for judging the size and type of Government initiatives needed to improve the steel industry's competitiveness,

--can be used over time as a benchmark to measure the success or failure of initiatives, and

--over time would itself be subject to reevaluation.

RECOMMENDATIONS

Revitalizing the U.S. steel industry will require careful and continuing attention. The Congress has an important role to play in formulating an effective strategy for revitalizing the domestic steel industry. Therefore, we recommend the following:

1. The Congress should enact legislation requiring the Executive Office of the President or other appropriate Executive Branch agencies to undertake a bi-annual assessment of steel capacity conditions. The assessment should cover both domestic and foreign suppliers and the plausible range of supply-demand conditions which might be encountered over the coming 5 to 10 years. These recurring assessments ought to provide the basis for judging the present and prospective capability of the domestic steel industry, and for identifying policy initiatives to avoid undue risk from foreign supply sources.

2. The Congress should enact legislation to define a performance objective for the domestic steel industry. This objective, defined in terms of industry-wide, efficient capacity goals and a timeframe for their realization, should serve as a benchmark against which the realism of industry revitalization activity and related Government policy can be assessed. Such legislation may have to be subsequently amended in light of periodic re-evaluation of mandated capacity assessment studies. The objective should also be sufficiently stable to give confidence to investors and policy administrators.

3. As part of its consideration of a performance objective for the domestic steel industry, the Congress should review the Administration's latest steel program. Such a review should relate alternative performance objectives to specific program proposals such as

that a performance objective would be rigid and cause a profound shift in the locus of economic (investment) decisionmaking.

We believe the "linkage" between our analyses and our basic conclusions is clear. We have pointed out explicitly that the major reason that the Solomon plan failed was the lack of any specific goals for the steel industry. We also explained that the same deficiency is present in the President's September 1980 program. We believe that CEA and the other agencies that disagreed with our recommendation misinterpreted its intention. We revised Chapter 7 to further clarify our rationale for wanting a performance objective for the steel industry.

In recommending a legislatively established performance objective, we are not calling on Congress to mandate a rigid goal that would be imposed on the industry; nor are we suggesting a shift in steel sector investment decisionmaking. Rather, we are saying that the prospects for success of a program to aid the steel industry can be greatly enhanced if some benchmark or measurable objective is established. An objective is necessary to clearly establish the kind of steel industry the program seeks to aid or create, to develop program provisions adequate to do the job, and to provide a benchmark against which the program's effectiveness can be measured. While we believe that the objective should be re-evaluated periodically, it needs to be stable enough to maintain the confidence of investors and policy administrators.

CEA further states that we are recommending legislation in four specific areas to define performance goals. As discussed in chapter 7 (see p. 7-12), we do not recommend such legislation. We suggest that the Congress consider certain critical factors in developing a performance objective. We also point out that there are other criteria which might be used to develop the performance objective, and note specifically those employed by the industry itself, and used by the Steel Tripartite Committee, to formulate a long-term objective for industry revitalization.

Administration of antitrust laws

Both the Department of Justice and the Federal Trade Commission criticized our draft report's discussion of Federal anti-trust enforcement activities. Neither our draft report nor our final report make recommendations concerning U.S. antitrust policy, and we limit our antitrust discussion to the Solomon report and the Canadian experience. However, these agencies' comments merit careful analysis that could not be fully addressed in this report. We are considering

Federal Emergency Management Agency
Federal Trade Commission
International Trade Commission
Council of Economic Advisers
Council on Wage and Price Stability

In addition, we asked the Export-Import Bank and the Overseas Private Investment Corporation to review and comment on Chapter 5.

We asked the agencies to expedite their review and furnish their comments within a limited time-frame so that we could include their views in tentatively scheduled congressional testimony. Because of the shorter than usual time allowed for comment, the Departments of Defense and the Treasury and the Federal Emergency Management Agency provided only oral comments. Written comments which were submitted by other reviewing agencies are reproduced in Appendix III. Neither the Departments of State or Commerce nor the Council on Wage and Price Stability provided any individual oral or written comments.

Agency suggestions for specific revisions to either clarify or improve the accuracy of various sections were incorporated, where appropriate, in the final report. Review comments dealing with major policy aspects are summarized in the following sections.

Industry performance objective

The most significant comments on the report involved basic disagreement with our recommendation that Congress define a policy guidance performance objective for the domestic steel industry. This disagreement was expressed most fully by the Council of Economic Advisers (CEA), speaking for the Administration generally and specifically for the Departments of Commerce and Labor, and the Council on Wage and Price Stability. The comments of the Federal Trade Commission and the Departments of the Interior, Justice and the Treasury also questioned our recommendation. It is worthy of note, however, that the Environmental Protection Agency, the Department of Defense, and the Federal Emergency Management Agency endorsed the concept and expressed their belief that establishing an industry performance objective would be a beneficial step towards revitalizing the domestic steel industry.

CEA's comments involve a critique of the report's structure and analysis. CEA stated it could not discern an adequate linkage between our analysis and our basic conclusions. CEA also stated that goal setting, particularly congressional goal setting, would be an ineffective and unproven means for trying to revitalize a distressed industry. In addition, CEA assumed

reviewing the issue of antitrust policies as an impediment to the materials sector in future GAO work. This would provide a more effective vehicle to examine such an important question. Industrial criticism of the antitrust laws is supported by several leading antitrust experts.

Steel sector labor costs

The third policy aspect of the review comments deals with our treatment of the steel industry wage premium problem. The Department of Labor said that the report does not provide support for its suggestion that wage rates of American steelworkers are too high.

We do not state, as the Labor Department letter implies, that steel wage rates are too high in an absolute sense. We do believe, however, that the report demonstrates the effect of wage levels on the domestic industry's international competitiveness. We also note that the Steel Tripartite Committee report, to which the unions were contributors, acknowledges the significance of the wage premium issue.

APPENDIX I

INVESTMENT ASSUMPTIONS AND CALCULATIONS

FOR A NEW STEEL MILL

Our calculations indicate that a greenfield mill could achieve a 10 percent after-tax real rate of return provided that the investing firm has

- enough capital--Conneaut's first stage, for example, would cost $4 billion,
- enough earnings to take full advantage of accompanying tax credits and deductions, and
- enough of a market share to keep the plant running at full capacity through the business cycle, by displacing high-cost production.

Our calculations show that if the industry as a whole makes an operating profit (profit before depreciation, taxes and interest) of 9.3 percent then a greenfield mill can yield a 10 percent real return on equity after taxes. Actual operating profits for the industry has been in this range--9.2 percent average from 1975 to 1978. Nevertheless a prudent investor may reasonably ask for some greater margin to compensate for the possible delays, and probable high risks involved in constructing a multi-billion dollar complex. Accordingly, accelerated depreciation or Government support to underwrite higher debt financing could reduce the minimum profitability level which the industry must achieve before investors will make such commitments.

Table I-1

Minimum Industry Profitability Necessary to Justify Greenfield Mills

	Percent
Current tax law and assumptions	9.3
Administration tax proposals	7.9
9 year statutory steel guideline life	5.9
Canada's depreciation/tax credit laws	2.9
Jones-Conable	2.2
Shift from 60:40 to 50:50 equity debt financing	4.4

(For example, under current assumptions and the Jones-Conable tax bill, a greenfield venture could earn 10 percent a year on equity even if the industry as a whole made an operating profit of 2.2 percent on sales).

Our calculations assume the following under legal and economic conditions prevalent in mid-1980.

a. $1,340 per capacity ton shipped ($1,072 per net ton at an 80 percent conversion ratio of raw steel shipments).

b. 5 percent of total invested in year -3, 10 percent in year -2, 40 percent in year -1, 45 percent in year 0. Payback at a constant real rate in years 1 through 18.

c. A 12-year double-declining/sum-of-years digits writeoff period for steel-making equipment. (78 percent of the total); 7 1/2 years for chemical process equipment (8 percent of the total); and 22 years for utility equipment (4 percent of the total). A 35-year, 150-percent declining-balance writeoff for buildings (10 percent of the total).

d. A 10-percent investment tax credit for equipment, (80 percent of the total), escept 20 percent for coke ovens (10 percent of the total).

e. 60 percent equity with a 10 percent after-tax rate of return. 40 percent debt at 12 percent nominal interest, repaid in year 18.

f. 10 percent inflation.

g. 46 percent corporate tax rate.

The purpose of these calculations is to find a pre-tax level of operating profit necessary to yield this 10 percent real rate of return on equity.

The present value (year zero basis) of the various cost components per ton are:

Outlays:	1.	Equity cost	$866.35	Equity outlays of $30.20 in year -3, $66.45 in year -2, $292.36 in year -1 and $361.80 in year 0.
	2.	Debt repayment	$ 16.19	(Repayment of $500.54 in year 18.)

3.	Interest	$319.76	($20.13 in year -3, $44.30 in year -2, $194.91 in year -1, $241.20 in year 0 multiplied by $.12 from year after borrowing to year 18.)

Tax credits:

4. Tax credit:

Equipment	-$115.51	($1072 x 10% at present value)
Coke ovens	-$ 28.88	($134 x 20% at present value)

Cash-flow value of tax deductions:

5.	Interest	-$147.09	($319.76 x 46 percent)
6.	Depreciation:		
	Equipment	-$299.09	
	Buildings	-$ 11.85	
7.	Undepreciated value		
	Buildings	-$ 7.28	
Total Cash flow cost		$592.60	(1+2+3-4-5-6-7)

This present value of discounted cost of $592.60 requires an after-tax cash flow of $72.26 (or pre-tax operating profits of $133.81 per ton) to yield a 10-percent real rate of return.

Can a greenfield plant yield such operating profits? We believe that it can at least come close. There are two ways of calculating a greenfield mill's operating profit.

One way is to calculate the difference between greenfield and average costs and then add current operating profit. In early 1977, U.S. Steel estimated its Conneaut works would save $40 in labor and $20 in materials (mostly energy) compared with its average plants. In the 3-1/4 years from April 1977 to July 1980, labor costs have risen about 46 percent and materials costs by 65 percent. Total mid-1980 savings would

be $92 per ton. The remaining $42 would have to be made up in operating profits--9.3 percent of the Iron Age tonnage reference price. This 9.3 percent figure is near what the industry averaged from 1975 to 1979.

The other way is to compare greenfield operating costs with the costs of the capacity it would replace. Data from (updated to 1980) the Council and Crandall suggest:

--Greenfield would save $45 per ton over current best practice.

--Current best practice saves $40 to $50 per ton over average practice.

--Average practice saves $40 to $55 per ton over breakeven worst.

Hence operating savings would be in the neighborhood of $125 to $150 per ton.

These calculations are conservative in another sense. If the real costs of labor and materials increase at rates of two percent per year--as they did in the 1960-1980 era, then expenditures to reduce such costs are correspondingly more valuable. If so then the average mill need earn only 6.4 percent operating profits on sales before a greenfield mill returns ten percent a year on invested equity.

Inflation per se has had little effect on the profitability of greenfield mills. From 1951 to 1953 U.S. Steel spent $550 million to buy 1.8 million raw tons of new steelmaking capacity near Philadelphia--or $435 per shipping ton. In real terms that is $1,360 per shipping ton in 1980. Finally, using the less inflationary assumptions of 4% inflation, 6% interest, (and prepayment at rates to yield a declining real value of debt of 10 percent a year), make little difference in the real rate of return. Higher real depreciation deductions are offset by lower real interest rate deductions.

APPENDIX II

ASSESSMENT OF THE EFFECTS OF THE ADMINISTRATION'S SEPTEMBER 30, 1980 PROPOSALS ON THE STEEL INDUSTRY'S INVESTMENT ABILITY

We estimated the effects of the Administration's proposals on the steel industry's ability to make modernization investments by calculating how much each individual element would add to cash flow. In so doing, we made the following generous assumptions:

--Congress passes the necessary legislation.

--The program is administered in a manner condusive to new investment.

--The industry raises its investment rate to $3 billion a year, plus environmental expenditures.

Our calculations are in constant 1978 dollars so that they can be compared with the calculations used by the Steel Tripartite Committee.

Our estimates of the effects of the major program elements of the Administration proposal are summarized below:

Tax Changes

Changes in the two provisions of the tax laws could save the industry $834 million in taxes during the five years 1981 through 1985.

Faster depreciation, intended to apply to all industries, would net the steel industry $564 million in tax savings, assuming that the industry invests $3.0 billion in equipment ($2.5 billion in modernization investment and $500 million in pollution control) and that the industry is in a position to capture all the tax benefits.

Tax savings from the 10 percent tax credit for investment in distressed areas would be $270 million maximum. At $3 billion a year steel would make 2.4 percent of all equipment investment. The most favorable general criteria for judging depressed communities (unemployment in July 1980) would cover 15 percent of the labor force, and 45 percent of all steel capacity. Thus steel could pick up three times its proration share from the billion dollar a year earmarked total. Therefore, the value of this devise is: $1 billion x 2.4 percent x 3 (likely steel ratio) x 5 years, -- $360 million in 1981 dollars, or $270 million in 1978 dollars.

Environmental Regulation

Postponing the 1982 deadline for meeting air quality standards to 1985 for the steel industry would yield approximately $430 million in savings from 1981 to 1985 inclusive. These savings come from two sources.

Limited life equipment could be used longer. If the industry turns over three percent of its capacity every year, then nine percent (10 million tons) would normally be retired in the 1983-1985 period. Approximately two-thirds of this old capacity does not comply with air quality standards and would have to be retired in 1982 if the deadline were enforced. Postponing air quality requirements would yield some residual value to the industry from their extra lifetime (0-3 years with an average of 1 1/2 years of this equipment). If one assumes that the value of limited life equipment is proportional to its replacement cost multiplied by the percentage remaining in its normal lifetime, the value of the extension is: 10 million tons x 2/3 not in compliance x average 5 percent value remaining (e.g. 1 1/2 divided by 30 years) x $900/ton replacement cost or $300 million over a five year period. Another category of savings are the operating and maintenance costs for retrofit requirements which are postponed. Of the $1.2 billion that the steel industry would have to spend on air quality in 1981 and 1982, around two thirds represent retrofits and one third represent new capacity. Saving three years of operating and maintenance costs, which run 10 percent of capital costs annually, would have an after-tax (e.g. less 46%) value of $800 million x 3 years x 10 percent a year x 54% or $130 million.

The New Trigger Price Mechanism

In one sense, the restoration of the trigger price mechanism represents no more than a continuation of the old trigger price mechanism. Even the announced twelve percent increase is in line with what the old rules would have generated with the yen having risen in value this year. Nevertheless, if these trigger prices are administered better, the net effect will be to raise the effective price of imports in domestic markets by curtailing the very low-price products. We assume that the five percent of imports which came in 10 to 20 percent below trigger, as well as the 15 percent which came in at 0 to 10 percent below trigger would both have their prices raised to the trigger level. Average import prices would thus rise by 1.5 percent (.05 of imports times a 15 percent gain, plus .15 of imports times a 5 percent gain).

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THE CHAIRMAN OF THE
COUNCIL OF ECONOMIC ADVISERS
WASHINGTON

October 15, 1980

Mr. J. Dexter Peach
Director, Energy and
Minerals Division
U.S. General Accounting Office
Room 5120
441 G Street, N.W.
Washington, D. C. 20548

Dear Mr. Peach:

This letter is in response to your request for written comments on the GAO proposed report to the Congress entitled, "An Overall Framework Is Needed For Evaluating Steel Industry Related Government Initiatives." I understand that your staff has met with my staff and the staffs of other Administration officials.

The comments contained in this letter reflect the concerns of my colleagues. Thus, this letter will be the single written Administration response to the report's policy conclusions.

I have chosen not to review in detail the substantive findings of the report on current industry performance (although others in the Administration may choose to do so). The lack of commentary on the report's detailed findings is neither an endorsement nor a criticism of these aspects of the study. Rather I wish to focus on this report's overriding deficiency -- the absence of any linkage between the analysis contained in the report and the conclusions.

To be specific, the report recommends that Congress enact legislation to define performance goals for the steel industry in four areas:

(1) a minimum level of domestic capacity necessary for purposes of national security;

(2) a target market share for domestic firms;

(3) a target ratio of capacity to peak domestic needs; and

(4) the extent to which steel's capital needs can be met without government assistance.

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This could raise domestic prices by .4 percent (25 to 30 percent response ratio of domestic prices relative to import prices). The value would be $40 billion (1978 sales), x .4 percent x 54 percent (after-tax) x 5 years or $425 million in higher after-tax profits.

It would also raise domestic shipments by 500,000 tons (1.1% price differential x elasticity of 3 times 15,000,000 tons of imports). This would have the value of 500,000 tons x $400 ton (revenue) x 10 percent operating profit x 54 percent (after tax) x 5 years or 54 million dollars in higher prices.

Hence the total value of the package to the industry, under generous assumptions is (1981-1985 in 1978 dollars):

Faster depreciation	$ 564 million
Depressed area tax credit	270
Limited-life environmental extension	300
Operating and maintenance savings on retrofit	130
Higher prices from new TPM	425
Greater sales from new TPM	54

$1,743 million (1981-85), or around $350 million a year maximum

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Moreover, apart from the merits of specific goals in these four areas, there is also no consideration in the report of the economic, political or administrative implications of establishing these goals legislatively. Justifying such a route would require the analysis of several critically important issues. First, it would be necessary to demonstrate not only that the existence of specific goals would contribute to the steel industry's revitalization, but also that the establishment of such goals legislatively would contribute an essential ingredient to the proposed policy. Perhaps the authors believed that a congressional expression of industry goals would impart a constancy of purpose and specificity of objective that would be beneficial to the industry and the nation, but this issue is not directly discussed.

Second, it would be necessary to demonstrate that legislative goal specification is workable and effective within the nation's present institutional structure or to identify the necessary institutional changes to make it so. The present report offers a specific institutional recommendation -- Congress must legislate goals -- but provides no institutional analysis to justify this recommendation.

Third, given the precedent-setting nature of any legislative action in this area, it is essential that any study calling for such action carefully examine the implications of such a precedent for other industrial sectors. The present study focuses only on the steel sector -- and even within that only on the problems of large, usually integrated, producers.

In sum, the present report cannot sustain the conclusion that legislated goals would facilitate the revitalization of the domestic steel industry. It does not even make the case that the appropriate goals for a national policy toward this industry have even been specified. Indeed, the four goals identified represent very narrow and potentially dysfunctional evaluation criteria. The specification of a minimum level of domestic capacity consistent with U.S. defense needs prejudges any evaluation of alternative policy options to achieve national security goals such as raw material and finished goods stockpiles, accelerated construction in wartime, temporary diversion from non-defense needs, etc.

The market-share goal adds predictability to steel industry planning but effectively precludes proper consideration of questions of comparative resource efficiency and productivity.

The target ratio of capacity to peak demand implicitly rejects traditional market solutions to such problems -- long-term contracts, inventories, futures markets, etc. -- without adequate analytical justification.

Even if the wisdom of legislative prescription of the previous three goals were conceded, the last goal is potentially quite dangerous. Why is the Federal government particularly equipped to set

Apart from the first goal the report mentions -- insuring essential national security needs -- the study nowhere documents why we should set rigid goals with respect to other aspects of the industry. Traditionally, the market place has determined these results, within constraints imposed by regulation and by laws designed to insure that domestic and international competition is conducted on a fair basis. The study nowhere contains the analysis which supports the case for abandoning this approach. The analysis is designed only to identify general characteristics of the industry's current condition; it is not designed to demonstrate specifically that the lack of publicly prescribed goals shaped these characteristics in important ways. The analysis is intended to be comprehensive in its description of industry problems; but this descriptive methodology does not allow -- nor do the analysts attempt -- an assessment of the effectiveness of goal-setting in remedying the problems the report identifies.

After calling for legislatively-specified goals, the report does not identify or evaluate the necessary public policy measures necessary to realize the goals if they were not achieved by the market mechanism. If the domestic market share falls below the goal, should the nation directly limit or penalize imports, declare a moratorium on price increases, or on wage increases, or on new regulatory burdens? While I cannot be certain, in the absence of specific suggestions in the report, many of the usually suggested measures to enforce the goals would add substantially to consumer or to Federal budget costs. Moreover, without an analysis of the various policy options to achieve the specified goals, it is impossible even to begin an assessment of whether any benefits from enforcement of such goals would be worth the costs.

The absence of analytical support for the report's conclusions are especially distressing because the policy you recommend (always assuming the report means the goals to be enforced) would represent a profound shift in the locus of strategic economic decisionmaking in this nation from its traditional repository in the private sector to the public sector. So basic a change -- whether desirable or not -- simply cannot be supported by the analysis contained in the present GAO document because little analytical attention is addressed to basic questions of private sector strategic decisionmaking in this industry.

If the recommendations of the report are meant to imply that goals should be set but not enforced, then I foresee absolutely no benefits and substantial harm should those recommendations be adopted, since they invite an erosion of governmental credibility.

Not only is the report's conclusion unsubstantiated by analysis, it is unsubstantiated by inference. In the report's brief discussions of the policies of other nations vis-a-vis their domestic industries, there is no evidence that publicly-specified goals have helped revitalize an otherwise distressed industry.

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United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

SEP 15 1980

Mr. J. Dexter Peach
Director, Energy and Minerals Division
U.S. General Accounting Office, Room 5120
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Peach:

Thank you for your letter of August 29, 1980, to Secretary Andrus requesting review of the draft report, "An Overall Framework is Needed For Evaluating Steel Industry Related Government Initiatives."

In general, the report is well written and, for the most part, comprehensive. A particularly credible part of the report is its lucid presentation of the many complex problems which have plagued the steel industry for more than a decade. As requested in your letter, our review gave special attention to chapters 4 and 6 of the draft report. Several statements in chapter 4 were misleading. For example, on page 61, table 4-1 shows that the United States paid more per ton for iron ore imports than did its competitors. However, the text and table are misleading because they fail to note that the United States imported higher-graded products (i.e. pellets). Additionally, the table, in showing import dependence, uses a year (1977) which was abnormal for the United States because of a long steel strike.

In chapter 6 (page 125), the authors do not fulfill their stated intent to examine "...the adequacy of Federal R&D funding in the steel industry." The chapter should, but does not, contain analyses of the importance of R&D to the health of the domestic steel industry as well as the current and possible future roles of the Federal Government in this area.

Specific comments with regard to the conclusion and recommendations made in the report are noted as follows:

Government Steel Initiatives Should be Related to an Overall Materials Policy and Planning Process

Comment: We agree that initiatives affecting one industry should be evaluated in the context of an overall materials or industrial policy. As you know, the Administration is working on a program to increase incentives

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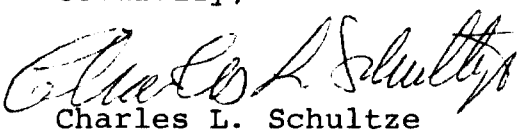
the steel industry's capital requirements and forecast whether the private capital markets can meet those requirements? Is this likely to be done well and without outside pressures intruding on the decision? Moreover, the notion that steel's capital needs cannot be met without government assistance implies numerous other goals regarding pricing, investment and financing behavior that the report fails to articulate. In other words, the imprecision of this goal introduces the very ambiguity of purpose that goal specification is presumably intended to resolve in the first place.

And finally, I would note that there are many other very important criteria for judging the health of the domestic steel industry and how well it is serving the country as a whole, apart from the criteria implicit in the goals the report recommends. If goal-setting is the route to follow, why not establish as goals other criteria which explicitly reflect the interests of consumers, steel users, industry employees, or numerous other constituencies with a legitimate stake in steel industry policy?

In summary, whatever the merits of the report's substantive analysis, the present document, by virtue of its methodological design, simply cannot be used to support a recommendation for the government's establishment of performance goals for the domestic steel industry; it cannot sustain the call for legislation in this area; nor can it support the choice of specific performance criteria for evaluating the nation's steel industry policy.

Cordially,



Charles L. Schultze

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U.S. Department of Justice

SEP 16 1980

Washington, D.C. 20530

Mr. William J. Anderson
Director
General Government Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Anderson:

This letter is in response to your request to the Attorney General for the comments of the Department of Justice (Department) on your draft report entitled "An Overall Framework Is Needed For Evaluating Steel Industry Related Government Initiatives."

The draft report concludes that the U.S. steel industry faces serious problems--many of its plants are obsolete, its technological lead has disappeared, its production capacity is shrinking and, as a result, imports are capturing an increasing share of the domestic market. No single factor is identified as causing the industry's problems. Rather, high labor costs, lack of desire to compete, inefficiently sized plants and restrictive government policies--especially tax, environmental and to a lesser extent, antitrust policies--have all contributed to the decline. Two options for increasing industry efficiency and competitive position are examined. The first option is to eliminate import barriers, thereby increasing competition, which would hasten the retirement of obsolete capacity and act as an incentive for cost-reduction changes by labor and management. This initiative could be coupled with changes in Government tax and environmental policies. The second option, which is the one recommended by GAO, involves the establishment of performance goals for the domestic industry concerning such factors as the amount of domestic capacity required for national defense and a target ratio of capacity to peak domestic needs. Government initiatives would be developed to promote these goals.

In the Department's view, the draft report is an impressive and thoughtful effort. Its factual analysis appears generally accurate. However, we disagree with certain aspects of the treatment of antitrust policy therein.

The draft report suggests that the antitrust laws have prevented the development of a more efficient steel industry by discouraging mergers and joint ventures. Specifically, pages 137-138 and 171 suggest that the Antitrust Division abandon its "case-by-case" approach to these matters and place less emphasis on industry structure in evaluating such transactions. Such an enforcement policy, however, would not be consistent with the antitrust laws as enacted by Congress and would not, in the Department's view, result in improvement in the industry's performance.

and productivity in our industries, and the President has already announced several measures which will significantly enhance the competitive position of U.S. industries in the future.

Government Initiatives Cannot Revitalize the Industry Alone: Management and Labor Involvement Essential

Comment: Concur in principle.

Develop a Quantified Performance Goal and Define a Timetable for Achievement for an Adequately-sized Domestic Steel Industry

Comment: The report appears to question the ability of market solutions to stabilize the U.S. steel industry. While short-term dislocations and capacity losses may be harmful and require some assistance from the Government, closer examination of the potential net long-term benefits to the economy of permitting free market forces to operate should be made.

The recommendation to define a "performance goal" for the U.S. steel industry could unnecessarily conflict with market forces and is unrealistic in our system of government. With regard to other recommendations, we feel that the future health of the domestic steel industry is dependent on the growth of efficient, profitable firms. The Government can most effectively assist by developing creative tax incentives and more flexible environmental regulations--both of which the report recommends. With these improvements, steel managers will be encouraged to invest in the long-term capital improvements necessary to revitalize the industry.

With respect to national security, steel imports are available from many politically stable sources and our vulnerability to steel supply cutoffs should not be compared to that of such critical minerals as cobalt, chromium, platinum, or petroleum.

In addition to these general review comments, we recommend that close attention be given to the specific comments written on the margins of the enclosed copy of the draft report.

The Department of the Interior is prepared to work closely with the General Accounting Office concerning the review comments we have made. Thank you again for giving us the opportunity to review the study.

Sincerely,

/s/ Larry E. Meierotto

Assistant Secretary of the Interior

Enclosure

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report. In fact, the Task Force recognized that "the Department of Justice cannot limit or completely clarify the scope of the antitrust laws."[1] The final report of the Task Force recommended only that the Department of Justice expedite its evaluation of requests by steel companies for the Department's enforcement intentions as to specific joint ventures or mergers. Since that time, no steel company has approached the Antitrust Division with such a request.

The Antitrust Division does not believe that lessening competition by allowing anticompetitive mergers or joint ventures is in the interest of consumers, the economy as a whole, or, in the long run, the steel industry itself. GAO has concluded that a "root cause" of the steel industry's problems is its noncompetitive attitude, which is discussed on pages 40, 45-47, 56, 59, 151 and 178-179. Anticompetitive mergers and joint ventures would encourage and entrench this "root cause" of the industry's current problems.

Finally, with respect to the draft report's ultimate recommendation, the Department notes that the first proposal, unrestrained free trade and competition, is more compatible with this nation's economic philosophy than is the second proposal, which includes elements of centralized planning. In any event, the report recognizes the need to stimulate competition in the industry regardless of which alternative is chosen. This can be accomplished more effectively by eliminating undue restraints on imports. Indeed, as the draft report emphasizes, imports currently represent the most significant competitive force in the industry. On the other hand, we recognize that special government assistance may also be indicated, especially if, as the draft report indicates, steel industries in other nations receive such favorable considerations.

We appreciate the opportunity to comment on the draft report. Should you desire any additional information, plese feel free to contact me.

Sincerely,

Kevin D. Rooney

Kevin D. Rooney
Assistant Attorney General
for Administration

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[1]The Antitrust Division published Merger Guidelines in 1968 and is completing work on an "Antitrust Guide for Research Joint Ventures."

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First, the Department notes that the antitrust laws do not contain a blanket prohibition of mergers or joint ventures in any industry, including steel. Only those mergers the effect of which "may be substantially to lessen competition, or to tend to create a monopoly" are prohibited. Thus, most mergers and joint ventures are legal under existing laws. The Antitrust Division challenges only a very few of the many transactions of this kind that come to its attention.

There has been a general recognition by both the economic community and Congress that competitive markets provide businessmen with the strongest incentives to improve their products and production methods and update their physical plants. There is also general agreement that industry performance is directly influenced by market structure. Section 7 of the Clayton Act, as a recognition of these principles, seeks to protect and preserve market structures conducive to competition. Thus, the Antitrust Division, in its enforcement activities, attempts to identify and prevent "those mergers which alter market structure in ways likely now or eventually to encourage or permit non-competitive conduct." (Antitrust Division Merger Guidelines). Joint ventures are subject to a similar analysis because they can also have substantial anticompetitive effects. The need for careful, individual analysis of both joint ventures and mergers in the steel industry was recognized by the Solomon Task Force in its final report:

> Joint ventures and mergers. Some recent studies suggest that certain kinds of joint ventures in the steel industry (e.g., furnace melt capacity, coke ovens, research and development) could reduce costs, lower energy consumption and make it easier to meet environmental standards. In addition, it is possible that mergers of small firms could lead to increased efficiency as a result of scale economies. On the other hand, both joint ventures and mergers between actual or potential competitors can reduce competition, increase prices, and lower incentives for individual firm innovation.
>
> There is some interest in the industry in both joint ventures and mergers, but the application of the antitrust laws to such activity must be considered in the light of the specific facts and circumstances of each proposal.

The draft report states on page 137 that the Antitrust Division failed to carry out a Solomon Report recommendation that joint venture and merger policy be clarified. Such a recommendation was not made. While a recommendation to that effect was included in a draft of the Solomon Report, it was finally rejected by the Task Force and does not appear in the final

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U.S. Department of Labor's Response to the
Draft General Accounting Office Report Entitled--

An Overall Framework is Needed for Evaluating
Steel Industry Related Government Initiatives

Comments:

The Department agrees with the comments of Charles Schultze concerning the report's recommendations of Congressional legislation defining steel industry performance goals. The report examines neither the possible advantages nor the disadvantages of such actions.

The Department of Labor was asked for its views on the report's treatment of steel wage levels in particular and has brief comments on that subject.

The report does not provide credible support for its suggestion that wage rates of American steelworkers are too high. The report cites increases in the ratio of average hourly earnings of steelworkers to average hourly earnings in total manufacturing as what it calls increases in the "differential." Students of wage rate determination would object to such methodology because of its failure to take into account changes in the mix of employment represented both in the numerator and the denominator. The report points out that (when translated by exchange rates) average hourly earnings of American steelworkers exceed those abroad. In addition to failure to account for possible differences in employment mix, such analysis leaves unanswered the question of why some American firms that pay American wage rates are able to compete successfully with foreign firms. Careful and detailed study might well show that the suggested return of the ratio of average hourly earnings in steel to average hourly earnings in total manufacturing to its level of twenty years ago would be inefficient if not impossible.

The report describes the Experimental Negotiating Agreement that took effect in 1974 as costly, but it provides no supporting evidence for this conclusion. It is noteworthy that the Agreement eliminates the costly triennial boom-bust cycle that had occurred in earlier years as the result of user inventory building and reduction before and after contract negotiations whether or not a strike occurred.

U. S. Department of Labor
Inspector General

APPENDIX III

OCT 3 1 1986

Mr. J. Dexter Peach
Director, Energy and Minerals Division
U.S. General Accounting Office
Room 5120
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Peach:

This is in reply to your letter to Secretary Marshall requesting comments on the draft GAO report entitled, "An Overall Framework is Needed for Evaluating Steel Industry Related Government Initiatives." The Department's response is enclosed.

Sincerely,

RONALD GOLDSTOCK
Acting Inspector General

Enclosure

APPENDIX III

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 2 1980

OFFICE OF
PLANNING AND MANAGEMENT

Mr. Henry Eschwege
Director, Community & Economic Development Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

The Environmental Protection Agency (EPA) has reviewed the General Accounting Office (GAO) draft report entitled "An Overall Framework Is Needed for Evaluating Steel Industry Related Government Initiatives," EMD 80-117. We appreciate the opportunity to comment on this report before it goes to Congress.

After reviewing the report, EPA staff members met with members of GAO's report project staff on September 15, 1980. That meeting was very useful; as a result we have provided GAO with additional research material on the section of the report concerning EPA's regulation of the steel industry. Included in this was material on EPA's participation in the Administration's plan for an industrial policy for steel, which is still being formulated.

The general and specific comments in this letter synthesize EPA's comments. Although our staff members discussed some of the comments with GAO at the September 15 meeting, we have included them here because we would like them to appear in the formal record.

General Comments

1. As a first step toward an industrial policy for the steel industry, the report recommends that Congress establish a set of performance goals for the industry. EPA commends GAO on this recommendation. To our knowledge, no such goals have been established to date. These goals are essential to a meaningful government/steel industry policy because they provide the requisite benchmark.

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Finally, the Department does not believe that the report properly handles the role of steelworkers in productivity gains achieved in the steel industry. The Department is not aware of any significant resistance on the part of steelworkers to the introduction of new technology or of any extraordinary work preservation practices that would delay the utilization of modern steelmaking methods. Given the state of the capital stock of the American steel industry described in the report itself, moreover, the proximity of American output per hour to, say, Japanese output per hour is perhaps a testimonial to the skills of American workers.

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Specific Comments

1. P. 76: a. In discussing a claim made by an official of a steel firm that the company had financial problems because of irrational environmental regulations, the report is unbalanced because it makes no attempt to critically evaluate the claim.

   b. In mentioning the difficulties that U.S. environmental regulations impose on coke ovens, the report does not discuss foreign environmental control costs, despite the fact that this chapter would be appropriate for such a discussion. In the following chapter, the report admits that the Japanese steel industry's pollution expenditures to date have exceeded those in the United States.

2. P. 77: a. In response to a complaint made by an industry official that EPA should extend its compliance deadlines from 1983 to 1987, we must reply that the Clean Air Act Amendments of 1977 require compliance by December 31, 1982. Only Congress can extend the deadline.

   b. The report states that "although the regulations did not mandate such equipment, it was included in the EPA-approved State Implementation Plan." The states have the primary responsibility for devising strategies to comply with EPA's regulations. They are free to set requirements more stringent than necessary to meet Federal Standards. The Clean Air Act requires EPA to approve plans submitted by states, as long as those plans will attain national ambient air quality standards.

   c. Reference to dust discharges being "less hazardous" is unfounded. It is also misleading since it implies these discharges are acceptable.

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2. The report demonstrates little understanding of environmental legislation and programs and uncritically reflects the industry's perspective. The tone of the report is set by such words and phrases as:

   - o "the costs of complying with rigidly administered environmental regulations,"
   - o "environmental policy was revised only to a limited degree" following the Solomon report, and
   - o environmental regulation has made it "needlessly" difficult for the steel industry to replace old plants with new plants.

   The report fails to substantiate these statements and others that appear in the specific comments section. It also does not discuss EPA's regulatory responsibilities, which include ensuring the attainment of environmental goals by congressionally established dates.

3. Both in words and actions, EPA Administrator Douglas M. Costle has strongly expressed his willingness to work with the steel industry to attempt to alleviate the economic burden resulting from EPA's policies and programs. The report should mention this cooperative spirit. In fact, at a meeting of the Steel Tripartite Committee on July 21, 1980, Secretary of Commerce Phillip M. Klutznick, co-chairperson of the Committee, commended Mr. Costle for his initiative in this respect. A transcript of this meeting has been provided to GAO's project staff.

4. The report would be easier to follow if it explained, in context, applicable EPA legislation and regulations, such as the bubble concept, the State implementations plans (SIPs), and pollution control requirements for attainment and nonattainment areas. Examples of where such explanation is needed appear in the specific comments below.

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9. P. 137: EPA's Deputy Assistant Administrator should be identified, at least by title.

10. P. 138: The subject of government research and development for pollution control is treated in only two sentences. There is no mention of EPA's involvement in the Steel Tripartite Committee's Working Group on Technology Research and Development or of our formcoke activities that we are pursuing in conjunction with the Department of Energy. Since Congress initiated the formcoke project, a reference to this activity would be appropriate. Finally, there is no reference at all to the ongoing EPA research and development program that focuses on controlling pollution in the iron and steel industry.

11. P. 187: a. Under current law, EPA cannot allow steel companies to "sum all facilities together" under an "area-wide bubble" because:

(1) The Clean Air Act requires that national ambient air quality standards must be attained everywhere. EPA cannot allow emissions from one plant to violate an ambient air quality standard because emissions from another plant in another area are lower than necessary for the standard in its area to be attained. Consequently, it is not legally possible to "bubble" plants separated by a number of miles for emissions whose effects are localized or for which the area of effect varies with the sources location. This is the case with the emissions of greatest concern from steel plants.

(2) The Clean Air Act does not allow a firm to trade off "one pollutant" for "another pollutant." The national ambient air quality standards are pollutant-specific.

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3. P. 81: What is the basis for saying "rigidly administered environmental regulations"?

4. P. 98: When stating that U.S. annual environmental expenditures are beginning to overtake those in Japan, the report should point out that this increase is partly due to the U.S. industry's earlier delays in compliance which have caused the expenditures to bunch up in the later years.

5. P. 112: The reference to Canadian tax law as contrasted with U.S. tax law for dividends is ambiguous and perhaps inaccurate. U.S. tax law allows partial exclusions of dividends from personal income.

6. P. 113: On the basis of discussion with U.S. and Canadian regulatory and industry officials, the report observes that "environmental regulations have been applied more flexibly in Canada in order to better balance economic and social tradeoffs. The costly court litigation over environmental standards experienced in the U.S. has been avoided to date in Canada. Further, the proportion of capital investment diverted to nonproductive investment also appears to be substantially less." These claims are not substantiated in the report. At a minimum, a balanced viewpoint should be sought by discussing these statements with U.S. EPA officials. One discussion point would be whether the Canadian Environmental Impact Statement adequately satisfied U.S. law.

7. P. 118: What is the basis for the concern over providing capital funds for Third World steel projects? This whole issue needs elaboration.

8. P. 136: "Current environmental policy" does allow banking of emission decreases (not increases) in nonattainment areas. However, it is up to the states to develop and implement banking registers, etc. EPA will approve the banking plans as long as they are adequate to ensure attainment and maintenance of the national ambient air quality standards.

APPENDIX III

EXPORT-IMPORT BANK OF THE UNITED STATES
WASHINGTON, D.C. 20571

PRESIDENT
AND
CHAIRMAN

CABLE ADDRESS "EXIMBANK"
TELEX 89-461

September 10, 1980

Mr. J. Dexter Peach
Director, Energy and Minerals Division
U.S. General Accounting Office
Room 5120
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Peach:

This is in response to the request of the General Accounting Office for comments by the Export-Import Bank on Chapter 5 of a proposed report to the Congress entitled, "An Overall Framework Is Needed For Evaluating Steel Industry Related Government Initiatives."

The Board of Directors of the Export-Import Bank is directed by law to "...take into account any serious adverse effect of such loan or guarantee on the competitive position of United States industry...and employment in the United States, and shall give particular emphasis to the objective of strengthening the competitive position of United States exporters and thereby of expanding total United States exports...." Accordingly, on any credit application where there is potential adverse effect on an industry in the United States, an analysis is performed to determine the net effect of approving the transaction. As Chapter 5 of your report points out, greater damage might be done to other industries and employment by withholding a credit than the help the steel industry would receive.

The Bank has no objection to Chapter 5 which appears to be an accurate description of the steel industry and its competitive situation in the world markets. Also, we agree with the statement on page 121, "...that having Export-Import (Bank) refuse to consider steel projects will not help the steel industry much, although it may cost other U.S. companies substantial business." The very high level of competition from other countries for the export sales of steel-making equipment in third countries is evidenced by the small percentage of such equipment sold by United States manufacturers in the '70's.

Sincerely,

John L. Moore, Jr.

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b. The discussion of how to "streamline" the permitting process totally ignores many complex issues. For example, is the report referring to PSD or nonattainment areas? The statutory requirements for the two areas are different. Most steel facilities are in nonattainment areas. In these areas, the Clean Air Act requires that major new sources of pollution be equipped with control technology that will achieve the lowest achievable emission rate. Moreover, constructing such facilities is only allowed either within the context of a SIP that demonstrates attainment or with an offsetting reduction of emissions from existing facilities.

Sincerely yours,

William Drayton, Jr.
Assistant Administrator for
Planning and Management

predictions of numerous experts as to the likely future worldwide demand and production capacity for steel, and concludes that there will be future shortages.[2] As the draft report acknowledges in citing the glut predictions made in a recent CIA report, experts disagree on the likelihood of future shortages.[3] In fact, many of the arguments of those who favor protection for the steel industry, as well as some of the draft report's arguments, are dependent upon the existence of a glut. Our own assessment is that the market will induce the necessary capacity adjustments, so that something between the glut predictions of the CIA and the shortage predictions will occur. If a glut actually exists now or comes about in the near future, however, it should take a number of years before that excess capacity is eliminated. Consequently, a shortage is unlikely to occur in the near future and the industry should be able to adjust to any perceived increases in demand.

The draft report correctly observes that investment in the steel industry is dependent on its profitability. Since the development of a serious scarcity of steel by 1985 would dramatically raise prices and profitability in the industry, we would expect the industry to be investing at this time in order to reap the increased profits that would accompany such increased demand for steel. As the draft report notes, however, the industry is currently diversifying its investments, rather than building significant new steelmaking capacity. That suggests that the industry does not now anticipate shortages in the middle of this decade. If the industry is wrong, though, and the draft report is correct, investment should nonetheless take place as the shortage unfolds or becomes more likely to occur.[4]

2. National Interest Needs

The report argues that increasing reliance on foreign steel will threaten national security and cause U.S. consumers to pay premium prices during the predicted shortage. With respect to the fear of excessive prices, when a domestic purchasing agent buys foreign steel, the cost savings or premiums of foreign

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2 The draft report appears to use the term "shortages" to refer both to traditional economic shortages and to scarcity situations. We will continue that convention in our comments.

3 Indeed, many past predictions of steel shortages have been wrong.

4 The economy would suffer higher short term costs in this eventuality, but in a cyclical industry such as steel, it may not be optimal to anticipate all potential peaks in demand, since an excessive amount of capacity might remain idle in off-peak periods.

FEDERAL TRADE COMMISSION
WASHINGTON, D. C. 20580

September 19, 1980

Mr. J. Dexter Peach
Director, Energy and Minerals Division
U.S. General Accounting Office
Room 5120
441 G Street, NW
Washington, DC 20548

Dear Mr. Peach:

We appreciate the opportunity to present the views of the Bureau of Economics and Bureau of Competition on a draft of the proposed U.S. General Accounting Office's report on the steel industry, "An Overall Framework is Needed for Evaluating Steel Industry Related Government Initiatives."[1] The draft report provides a useful review of the state of the domestic and international steel industry. By recognizing and identifying the relevant issues and presenting the important policy questions in a convenient and straightforward manner, the report provides a good framework for discussion and analysis of the need for and components of a national policy toward the steel industry.

To make these brief comments as useful as possible, we will concentrate on areas where we feel additional analysis, documentation or explanation would be helpful. We will also indicate where our own analyses or conclusions differ from those of the report. Our comments are presented here under four main headings: (1) future shortages; (2) national interest needs; (3) type of import protection, and (4) the desirability of special antitrust treatment of steel. Some specific comments on individual findings will then follow.

1. Future Shortages

To assess the potential risks arising from reliance on foreign steelmaking capacity to supply a significant part of the needs of American steel users, the draft report examines the effects imports have had and are likely to have on the availability of steel in the U.S. market. The report reviews the

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1 These comments represent only the views of staff members of the Federal Trade Commission. They do not necessarily represent the views of the Commission or any individual Commissioner.

APPENDIX III

Moreover, according to the analysis in the proposed report, the argument that national defense requires a strategically sized domestic steel industry assumes that a conflict would be protracted and conventional (and remain conventional) and that the sea lanes to Japan and Western Europe would be blocked. These assumptions should be fully assessed, before the government acts to intervene. Moreover, even if it is determined that such a scenario is sufficiently likely to occur to warrant addressing the issue of a wartime steel shortage, the arguments of the previous paragraph need to be assessed to determine if a domestic steel industry reduced in size due to imports could still realistically meet the nation's needs.

3. Type of Market Intervention

The draft GAO report observes that, in addition to trigger prices, orderly marketing agreements (OMA's) appear to be acceptable to our trading partners. The report implies that OMA's are therefore preferable to tariffs or other forms of intervention. This is inconsistent with the extensive literature comparing tariffs and quotas.[8] Quotas and tariffs are called "equivalent" if the same level of domestic production occurs. Compared with "equivalent" tariffs, quotas and OMA's result in monopoly profits accruing to the exporters at the expense of the domestic economy; i.e., they are much more damaging to the domestic economy, since the extra profits from the higher prices that buy off the exporters are a transfer from the domestic economy to the exporters. These profits are in addition to and often larger than the inefficiency losses of the "equivalent" tariff. In contrast, the price premium from a tariff goes into the U.S. Treasury, not into foreign corporate or governmental treasuries.

Moreover, and more importantly, a full analysis requires consideration of least cost alternatives. In particular, stockpiling of steel for national defense as an alternative to protection of the steel industry was not mentioned in the report. If stockpiling is not feasible, another line of research indicates that direct subsidies to the industry is the least costly way to achieve a domestic industry of a given size.[9]

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8 See M. Morkre and D. Tarr, "Effects of Restrictions on United States Imports: Five Case Studies and Theory," FTC Staff Report, June 1980, Chapter 3 for summary.

9 See J. Bhagwati, "The Generalized Theory of Distortions and Welfare," in Trade, Balance of Payments and Growth: Papers in International Economics in Honor of Charles P. Kindleberger, edited by J. Bhagwati, Amsterdam: North Holland, 1971; see also Morkre and Tarr, Chapter 3.

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purchases accrue to his firm. If, by committing his firm to foreign steel, a purchasing agent causes his firm's costs to rise, or causes the probable future availability of steel to decrease, the company's profits will decline.[5] The private market,therefore, has adequate incentives to insure efficient decisions regarding the purchase of foreign steel.[6] The policy implication of the argument in the draft report is that the government should decide when it is in the interest of a domestic buyer of steel to purchase foreign steel. But, there is no reason to believe that government decision makers understand more fully than purchasing agents the gains, losses, and risks of buying foreign versus domestic steel.

With respect to any threat to national security from reliance on imports, it is important, as the draft report properly indicates, to determine how much domestic steel capacity is necessary for military and essential civilian needs. The report observes that defense needs now only require a few percentage points of current steel production, but that the share can reach twenty percent or possibly higher in a full scale conflict. The domestic industry, however, currently supplies over eighty percent of U.S. apparent carbon steel consumption and has outdated plants that are currently unused.[7] Although we have no direct expertise on this subject, based on facts such as these, it appears likely that military and essential civilian requirements can be met with our present capacity or somewhat less.

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5 As the GAO report indicates, purchasing agents regard security of supply as an important factor in selecting a steel supplier.

6 In fact, the sum of all individual company gains or losses from purchasing foreign steel is equal to the total U.S. economy's gain or loss; i.e., all gains and losses are "internalized". Purchasing agents have the free option of buying foreign steel or domestic steel. If they do what is best for their companies individually, they do what is best for the economy collectively. See Duke, Johnson, Mueller, Qualls, Roush and Tarr, The United States Steel Industry and Its International Rivals: Trends and Factors Determining International Competitiveness, Staff Report to the FTC, November 1977, pp. 541-548 (hereinafter "FTC Staff Report on Steel").

7 In the event of an emergency or a period of high prices, much of this used capacity can be brought into production, as it was in 1973. Moreover, new capacity can be brought on stream in an emergency situation after a couple of years.

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4. The Impact of Antitrust on the Steel Industry

The draft GAO report suggests that "progress to a more competitive and efficient structure" for the American steel industry is hindered by the antitrust laws and the attitudes of U.S. antitrust enforcement officials (see pages 171, 92, 137-38, 153). One implication is that a perceived conflict between antitrust and the achievement of scale economies and other efficiencies has kept the industry from giving "serious attention" to mergers and joint ventures that would make the industry more competitive (at 171). The report therefore offers as a policy alternative the "relaxation of anti-trust policy and encouragement of joint ventures." No explanation is given, however, as to how antitrust stymies modernization or how additional mergers or joint ventures would aid modernization. While the draft report presents important information that should be weighed by antitrust enforcement officials when considering the lawfulness of steel industry activity, it gives no information that would make a relaxation of antitrust enforcement appropriate with respect to the steel industry.

At the root of the draft report's recommendations may lie a misconception of antitrust. Because antitrust law takes into account the marketplace realities of each industry, it is rare that special rules are needed for the treatment of a particular industry.[12] Antitrust measures most business practices by a "rule of reason" standard that considers the facts peculiar to the particular business and industry, past and future trends in the industry, and the purpose and effect of the actions. The rule of reason does not validate conduct that has significant anticompetitive effects, but it does allow a firm to demonstrate that actions that might be deemed anticompetitive in other contexts are pro-competitive or competitively neutral because of the peculiar circumstances of the particular firm or industry.

The merger (and joint venture) area that is highlighted in the report is a good example of the flexibility of the antitrust law and the inappropriateness of a blanket policy of relaxing antitrust standards with regard to a particular industry. No special merger rules are needed because current merger law takes into account an industry's competitive realities, looks beyond the analytically important market share figures to gauge the current and future competitive significance of the merging firms, and offers a truly failing company a defense against an otherwise anticompetitive acquisition.

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12 Indeed, such special antitrust rules or exemptions have traditionally been granted only when market forces are supplanted by pervasive government regulation of an industry, including limitations on entry, exit and pricing. The trend of the last decade, of course, has been away from such regulation, toward greater reliance on market mechanisms.

Although production inefficiencies still exist with subsidies, prices do not rise and the consumption inefficiencies inherent in tariffs and quotas are therefore avoided.

The draft GAO report observes that many of the arguments made for government intervention in steel can be made for other materials industries.[10] Indeed, they can be made for many non-materials industries as well. The implication of that approach is that the government should decide which industries should be encouraged to expand through tax breaks or protection and which should be discouraged by default. In proposing such government action, the draft report has contrasted a model planning process with the imperfect market process of the real world. We agree there are instances when national interests make it important to plan for an industry of adequate size. We believe, however, that the government should move cautiously before supplanting the free market system--which we normally trust to make resource allocation decisions in an optimal and efficient manner--with some form of government intervention. While planning can achieve some societal goals effectively, the ability of the planning process to address the particular problem at issue and to achieve particular national goals in an efficient manner, and without unacceptable side effects, needs to be fully examined when proposing significant government intervention in an industry. Some of the factors to be considered are: (a) whether centralized decisionmaking is likely to be as efficient as the thousands of independent decisionmakers of the private market in determining whether scarce investment resources should be allocated to a particular industry; (b) whether changing the investment or pricing patterns in one industry will have unintended side effects in another industry; and (c) whether sufficient and objective information is available to allow the government to make the well-reasoned and unbiased decisions necessary for successful planning.[11]

It is important, then, that any proposal for planning be well documented. Before acting to assure that a particular industry attains a strategic size, policymakers need sufficient information to conclude (1) that the market is incapable of serving the national interests sufficiently; (2) that government action is likely to be effective at an acceptable cost; and (3) that the means that least restrict market forces are chosen to achieve the desired goal.

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10 GAO, "Learning to Look Ahead: The Need for a National Materials Policy and Planning Process," EMD-79-30, April 19, 1979.

11 The more complex the problem or the industry is, the less likely the government is to have sufficient, independent and reliable sources of information.

enforcement have somehow altered that tradition. Indeed, the report states that American steel purchasers frequently turn to foreign suppliers, not only because of better prices, but because foreign mills often offer better supply protection, superior quality, more reliability or better marketing services and attitude (at 59). Therefore, there would appear to be no basis to conclude either that antitrust is even partially to blame for the increase in imports or that a relaxation of antitrust enforcement is the remedy for an industry that does not now appear to compete vigorously in order to retain or expand its market share.

While antitrust officials should take into account the market conditions faced by domestic firms, they should not countenance conduct that offers no competitive advantages for the American public and is plainly anticompetitive. The report is surely correct that the public has much to gain from vigorous competition in the steel industry--competition with foreign firms and among domestic ones. Those benefits can best be achieved if antitrust is allowed to police against undue competitive restraints.[17] And other important national goals--such as sufficient capacity to serve the nation's defense needs--can be served without hampering antitrust's ability to preserve and promote competition in the industry.

* * *

Some specific comments on individual findings in the report now follow.

On page 150 the draft report argues that the U.S. steel industry has an inefficient capital stock, since much of its equipment is of the type abandoned by other more "progressive" steelmakers. The conclusion seems to contradict the good work of the report in Chapter 4 on costs. There the report concluded that the U.S. is competitive in the area of labor productivity. The data it presents (on page 69) show the U.S. 5 percent behind Japan in labor productivity, but 22 percent and 114 percent ahead of West Germany and the U.K. respectively. Thus, American steelworkers are able to achieve high productivity while using the current capital stock. The report also concludes that the U.S. is competitive in raw material costs and identifies the

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17 In this regard, the Japanese Fair Trade Commission appears to be changing its earlier lax merger enforcement position (as described at 92 of the GAO report). The Japanese FTC now plans to scrutinize mergers involving large firms in concentrated markets more closely. See, "FTC Plans to Tighten Criteria on Mergers Involving Powerful Firms," The Japanese Economic Journal, July 22, 1980, at 2.

We agree that antitrust officials should take into account the competitive ramifications of the domestic steel industry's modernization needs and the effects of international competition when reviewing a proposed merger or joint venture. But that does not mean that all steel industry mergers should be immune from antitrust prosecution or ignored by enforcement officials. For example, the draft report suggests that the minimum economic size for an integrated steel mill in North America is four million tons of raw steel (at 71). It appears that firms with as little as 3% of domestic production and sales produce four million tons of raw steel annually.[13] Even relatively small American firms, then, have the market base necessary to modernize on a scale sufficient to achieve plant size economies. It is therefore not advisable, where cost savings are not present, to establish a general policy of allowing large domestic firms to combine with their smaller rivals solely because some small companies cannot alone achieve plant size economies. While a particular merger or joint venture between large and small firms may create significant pro-competitive efficiencies that are otherwise unobtainable, such conclusions can only be made on a case-by-case basis.

Likewise, the capital formation needs of the industry do not seem to warrant a weakening of merger enforcement. The report offers no reason to believe that merging two competitors with low profitability would increase the ability of the merged firm to find internal or external sources of funds for modernization. We do not believe that the public should be asked to accept the loss of viable competitors through mergers unless real competitive benefits are likely to result.[14]

The record of antitrust enforcement in the domestic steel industry fails to support the assertion that antitrust conflicts with the international competitiveness of America's steel companies. As to mergers, the Government has challenged only two of the fifty-five mergers that have taken place in the industry since World War II.[15] Likewise, the steel industry has traditionally made frequent use of joint ventures,[16] and the draft GAO report does not indicate that antitrust laws or their

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13 See FTC Staff Report on Steel, supra, at 51.

14 While capital formation needs do not appear relevant to most mergers between competing firms, such needs could be a factor when a firm outside the industry proposes to acquire a steel firm and has the capacity and intent to modernize it.

15 See FTC Staff Report on Steel, supra, at 56-61; FTC Report on Mergers and Acquisitions (Dec. 1978).

16 See Fusfeld, Joint Subsidiaries in the Iron and Steel Industry, 48 Am Econ. Rev. (Papers & Proceedings) 578 (1958).

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We hope the above comments will be useful to your staff in finalizing the GAO steel report. If you have any further questions or would like to discuss the comments further with our staff, please contact staff economist David Tarr at 254-7680 or staff attorney David Giacalone at 523-3795.

Respectfully submitted,

Michael Lynch

Michael Lynch
Director
Bureau of Economics

E. Perry Johnson

E. Perry Johnson
Director
Bureau of Competition

APPENDIX III

hourly compensation of U.S. steelworkers as the source of U.S. non-competitiveness. Thus, further explanation would be helpful to resolve this apparent contradiction.

On page 122, the draft report expresses a fear of a debilitating glut of steel imports because of a very large expansion from the developing nations combined with Japanese and European participation. This fear of a glut is offered, even though the fundamental message of the report is based on a shortage scenario. It further states that foreign steel industries are strongly supported by their governments and presumably this is part of the reason for the glut. In making this analysis, though, the draft report relies on many of the calculations of the FTC Staff Report on Steel,[18] making no calculations of its own. The conclusion of the draft report, however, disregards the earlier report's conclusion: "None of the subsidies appears to be really large. With the single exception of the estimate for British Steel, none amounts to as much as one percent of the selling price of steel in the U.S.[19]

On page 179 and 180, the report calls for an expansion of mini-mills and scrap export controls. Since mini-mills use ferrous scrap as their almost exclusive feedstock and the basic oxygen furnace generates scrap, there is a balance which limits the types of furnaces that a region can support. As the share of mini-mills rises, the price of scrap is bid up, precluding new mini-mills from developing economically. Recognizing this balance, the draft report recommends scrap export controls. Such controls would, however, limit the profitability of the scrap industry and probably prevent its further expansion. Since the U.S. appears to have a comparative advantage in scrap, controls appear to be counterproductive. On the other hand, permitting unrestricted exports of scrap would result in foreign exchange earnings that would raise the real income of the U.S. economy.

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18 See FTC Staff Report on Steel, supra, Chapter 6.

19 Id., at 368.

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COMMENTS OF THE INTERNATIONAL TRADE COMMISSION

ON

DRAFT GAO Report

ENTITLED

"An Overall Framework is Needed for Evaluating Steel Industry Related Government Initiatives"

APPENDIX III

UNITED STATES
INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C. 20436

THE CHAIRMAN

25 SEP 1980

Mr. J. Dexter Peach
Director, Energy and Minerals Division
U.S. General Accounting Office
Room 5120
441 G Street, N.W.
Washington, D. C. 20548

Dear Mr. Peach:

This is in reply to the draft report on "An Overall Framework Is Needed For Evaluating Steel Industry Related Government Initiatives" submitted by the General Accounting Office for our review and comment.

The enclosed comments note several areas where additional information would enhance the accuracy of the report as well as provide areas for consideration in evaluating government options for addressing problems in steel.

I hope our comments will be beneficial to you and your staff in preparing the final report.

Sincerely,

Bill Alberger
Chairman

Enclosure

APPENDIX III

upon limited investment capital and an individual firm's cost-benefit evaluation -- on a plant-by-plant basis -- of conversion to more efficient techniques. This evaluation has often led to the conclusion that the benefits do not justify the expenditures. Obviously, if more efficient operating facilities were in place the operating efficiency of the domestic industry would be materially enhanced. Any assessment of the methods and economic incentives enabling the Japanese and EEC producers to facilitate the more rapid conversion identified in the report would be useful.

The report (p. 36) suggests the hypothesis that the steel industry is diversifying due to requirements for increasing expenditures in nonproductive investments. The data indicate that investment in steel versus investment in other operations has remained relatively unchanged at an 80 to 20 percent ratio during the period 1974-80. During this same period, the percentage of steel investment to "nonproductive" operations was constantly increasing. Thus, it appears that the industry's required commitment to "nonproductive" steel expenditures does not necessarily encourage diversification. The report notes an increasing portion of steelmaking budgets for "nonproductive" investments -- presently estimated at 30 percent. It should also be noted that these investments are largely mandated expenditures while the balance of capital budgets will vary depending on the cash flow position of each firm.

The Emergence of Federal Steel Policy (Chapter 6)

The chapter (p. 125) discusses the ineffectiveness of the voluntary restraint arrangements (1969-1974) and the trigger price mechanism (TPM) in allegedly failing to significantly reduce steel imports and to spur investment in new capacity. The TMP was not necessarily established to achieve these two objectives, but rather as a mechanism to identify imports of steel at prices which appeared to be below "fair value" under the Trade Act -- according to the Secretary of the Treasury.

The chapter also cites the apparent success of domestic specialty steel producers in increasing investment and becoming more competitive during a 3-year quota period recently concluded. A closer examination of the unique character of each industry sector (carbon v. specialty) and each structural adjustment mechanism (VRA, TPM, v. quotas) may provide additional insights into areas where greater emphasis might be placed in developing policy options for addressing problems in steel. For example, the relative financial strength of specialty steel firms and their ability to more readily adjust product mix in order to capitalize on individual company technical strengths contributed to a positive structural adjustment and an increased competitiveness of this industry during an interim period of protection. Any structural adjustment measures proposed by the government which would also recognize the need to contribute to the overall financial stability of the steel industry could enhance the success of a revitalization strategy. Further, the degree to which the government and industry could coordinate efforts to identify market niches where service, quality, product breadth, and price are strongly

APPENDIX III

GAO Draft Report "An Overall Framework is Needed for Evaluating Steel Industry Related Government Initiatives"

This is in reply to the subject draft report submitted by the General Accounting Office for our review and comment. The following comments note several areas where additional information would enhance the accuracy of the report as well as provide areas for consideration in evaluating government options for addressing problems in steel.

Risks Associated with Trends in Steel-Making Capacity (Chapter 2)

This chapter identifies the unfavorable trends in steel-making capacity which pose a significant problem to the industry's ability to improve its international competitive position and to offset the risks of potential future global shortages that are forecasted for the mid to late 1980's by a variety of steel experts.

It is not difficult to understand the chapter's ultimate prediction of the risks associated with the steel industry's declining production capacity. However, the report attributes the lagging production -- in exceptionally broad terms -- to the domestic steel industry's obsolete and inefficient equipment and its inability to generate sufficient investment capital, without an accompanying in-depth assessment and discussion of the key factors which may have contributed to these rather symptomatic problems. An insight into a few of these factors could be provided, for example, by looking at the Canadian steel industry which -- similar to the current level of U.S. steel mill product imports at 15-20 percent of total domestic consumption -- imported 30 percent of its steel only 25 years ago, and now is regarded as one of the most efficient steel producers in the world.

Canadian steel companies have a better cash flow than U.S. companies, attributable in part to faster depreciation schedules, which allows reinvestment more quickly into machinery and equipment and which provides an edge during inflationary periods. In the context of the U.S. steel industry's evolving difficulties related to (1) attracting outside investments, (2) generating sufficient profit to reduce its debt load, and (3) making required high nonproductive (i.e. pollution control) investments, the lack of such operating incentives may be a much greater factor in lagging domestic capacity than the symptoms cited in the chapter.

The report states (p. 25) that the U.S. steel industry lags behind both Japanese and the EEC industries in the installation of basic oxygen furnaces (BOF) and continuous casters. It is unquestionably true that the BOF is more efficient than the open hearth and that continuous casting is more efficient than conventional casting techniques. Although the industry does "rely" on these less efficient methods as the report implies, such reliance is based

APPENDIX III

comprehensive product line and one producer may be more competitive in one line of steel production than another. Improved market information on foreign trade patterns might assist each steel producer to better focus on a market niche (product groups) best suited in the short-run to its production facilities and its available resources to improve operating efficiency. Such an effort to concentrate resources in the more productive and competitive areas of the domestic industry could lead to the development of more realistic "performance goals" for industry capacity levels, product mix, plant efficiency, and capital investment, as well as government policy initiatives to facilitate an improved competitive position for the industry. The government could facilitate this process by coordinating with industry to develop foreign trade data and analysis useful to the entire industry.

The discussion on wage settlements (p. 152) suggests that the steel industry's management is not responsive to market situations in negotiating union contracts. Steel industry executives contend that government intervention, or the threat thereof, has directly affected wage settlements and has virtually eliminated management's leverage in the collective bargaining process. A worthwhile addition to this discussion would be an assessment of the impact of the government's role in this significant aspect of the industry's cost structure.

The chapter (p. 153) discusses the benefits and advantages of using the international market to achieve industry efficiency. In terms of quality, delivery time, and services rendered, the USITC has found that domestically produced steel is generally comparable to imported steel. With respect to delivery and service, domestic producers in most instances are better equipped to serve the domestic market than are importers. A market increasingly served by importers does not guarantee that U.S. consumers would pay less on the premise that domestic producers would further discount to meet import prices. As the competition provided by domestic producers diminishes, importers could be in a better position to charge whatever the traffic will bear. U.S. market conditions are but one determinant of the prices charged by importers. Other significant factors include conditions in the international market, conditions in the foreign suppliers home market, and such aspects of their government's economic policies as maintaining output during periods of reduced demand.

The chapter (p. 156) suggests that foreign capacity may not expand sufficiently to compensate for the loss of retired obsolete domestic capacity. In 1979, unutilized foreign capacity in Japan and in EEC countries amounted to more than the total shipments of the United States industry.

The chapter (p. 197) discusses factors to be considered in developing the government's approach to steel problems. Another significant factor which should be addressed is the international competitive environment. No matter how efficient the U.S. steel industry becomes it must compete against other economic systems with competitive advantages not available to U.S. producers. Although references to these advantages are made in various sections of the report, it seems appropriate to fully explore their implications toward developing a viable government approach to steel problems.

competitive, then individual domestic producers would be better able to improve manufacturing efficiency and allocate limited resources to areas providing the greatest return.

The loan guarantee program (p. 131) could be expanded as an integral part of a revitilization strategy to help provide a necessary investment boost to the steel industry, although it is recognized that the scope of this program is limited. Several initiatives requiring special legislative authority under the Trade Act could be considered, including (1) lowering interest rates to eligible firms to the government's average cost of borrowing (about 1.75 percent lower than regular SBA loans); (2) increasing loan guarantee limits from $1 million direct plus $3 million guaranteed to $3 million direct and $10 million guaranteed; (3) providing special temporary guarantee provisions with less stringent loan requirements, in consideration of unique circumstances of a trade-impacted industry; (4) providing an industry-wide assistance benefit for trade impacted industries of up to $2 million per industry per year; and (5) eliminating the "excess capacity" Catch 22 from Federal lending programs which prevent lending to individual firms in industries in which there is excess capacity. "Excess capacity" is a consideration in an import injury finding. The elimination of the "Section 702 Restraint" would open up Federal lending programs to the more successful firms in an import impacted industry which cannot obtain loans in private commercial markets due to unfavorable developments in their industry, and may avoid legal challenges encountered to date.

The concluding statement is made (p. 131) that "it is difficult to see what good the trigger price mechanism has done the steel industry, and the economy in general." In order to adequately assess the effect of the Trigger Price Mechanism, factors other than level of imports, investment, and import penetration in specific regions must be discussed since a multitude of ordinary market variables were operating and require consideration. Such factors as levels of demand, inflation, currency fluctuations, long-range investment decisions, and decisions of importing countries regarding levels of exports to the United States market, all contributed to mask the effect of the TPM on the domestic steel market. Contrary to the concluding statement in the chapter, it is likely that the TPM enabled domestic steel producers to recover costs that they might not otherwise have been able to, thus contributing to the industry's financial stability, and provided a positive impact on the world steel market.

Evaluation of Goverment Policy Operations for Addressing Problems in Steel (Chapter 7)

In the context of the two basic strategies proposed for addressing problems in steel (p. 148), a special coordinated effort on the part of industry and government could make a significant contribution in formulating an "efficiency-oriented strategy" in pursuit of domestic potential. Toward this end government might consult with industry associations to develop aggregate foreign trade data that would assist individual firms to better target limited resources to those product groups where a clear competitive opportunity exists. Domestic integrated steel producers manufacture a

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A Ramseyer version (words in brackets to be omitted, proposed new language underlined) of page 119 reflecting these suggested changes is enclosed.

Sincerely yours,

J. Bruce Llewellyn

Enclosure

APPENDIX III

OVERSEAS
PRIVATE
INVESTMENT
CORPORATION

1129 20th Street, N.W.
Washington, D.C. 20527
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Office of the President

SEP 17 1980

Mr. J. Dexter Peach
Director
Energy and Minerals Division
General Accounting Office
441 G Street, N. W.
Washington, D. C. 20548

Dear Mr. Peach:

Thank you for sending OPIC a copy of Chapter 5 of a proposed GAO report to Congress entitled "An Overall Framework Is Needed for Evaluating Steel Industry Related Government Initiatives." Based on a review of Chapter 5, it will be an excellent report.

With respect to the section on OPIC, I would like to suggest changes on page 119 in order that the report more accurately reflect OPIC operations.

1. The end of the sentence at the top of page 119 should be deleted and replaced with the following:

   secondly, it finances the investigation and development of projects of U. S. investors in the less developed countries.

2. The second sentence of the first full paragraph should be modified to read:

   In regard to their steel investment profile, OPIC has neither financed nor insured raw steel production capability.

3. The third sentence of that paragraph should be modified to read:

   Only five OPIC insurance projects relate to investments in the steel industry (forgings, castings, etc.), amounting to insured investments of about $19 million.

4. In the fifth sentence of that paragraph, the word "loans" should be replaced by the word "investments".

secondly, it finances the investigation and development of projects of U. S. investors in the less developed countries./negotiations concerning the proposed projects, e.g., it acts as a liaison between an interested U.S. company that has export services to sell and the customer nation's government and business community./

OPIC's policy is to not participate in any investment which is not developmental in nature or which might have the effect of being injurious to the U.S. In regard to their steel investment profile, OPIC has neither /not/ financed nor insured raw steel production capability. Only five OPIC insurance projects /loans/ relate to investments in the steel industry (forgings, castings, etc.), amounting to insured investments of about $19 /$15/ million. Less than 1 percent of their outstanding insurance coverage is related to steel. An OPIC official told us that all of these investments /loans/ were reviewed at the time of consideration and later in response to congressional concern. Their analysis disclosed no adverse effects to the U.S. steel industry. OPIC also noted the positive value of their agency's program in making U.S. exports possible.

Secondly, the Export-Import Bank of the United States was created in 1934 to aid in the financing of and to facilitate U.S. export sales. It offers a variety of programs to accomplish these results; however, in all its activities it is guided by these overall practices.

1. It is not intended to compete with the private capital market but to supplement and encourage it.

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