

constantly upgrading them to meet demand (Schorsch 1984). More recently, however, steel demand has begun to slow in other mature economies, including Japan. From 1969 to 1981 (the latest year for which data are available) steel demand grew at a compound annual rate of only 1.3 percent in Japan, 1.6 percent in Canada, and fell 0.9 percent in EEC nations, excluding the United Kingdom (CBO 1984, p. 33). While steel demand has slowed in more advanced countries, new capacity has been built in the Third World, adding to competitive pressures.

Analysts cite the shift of steel production away from advanced industrial nations to the less developed world as another major factor contributing to the long-term financial difficulties of U.S. steel producers. In 1961, the Third World accounted for 4.1 percent of the Western World's steel production and 9.6 percent of its consumption; in 1980 this had increased to 12.4 percent and 21.2 percent, respectively (CBO 1984, p. 34). Domestic steel producers contend that many Third World steel plants were built to enhance national prestige and that they are competitive only because they receive government subsidies (Roderick 1984, p. 51). Some Third World nations, however, are considered legitimate low-cost producers and formidable competitors. South Korea, for example, was the second largest source of steel imports (after Japan) to the United States in 1983.

A third factor affecting the competitive position of domestic integrated firms is the loss of technological pre-eminence to foreign producers and domestic minimills (CBO 1984, p. 33). Foreign steel producers have led the United States in the adoption of ad-

vanced technologies, such as continuous casting, that have enabled them to match or surpass U.S. standards of technological performance (Barnett and Schorsch 1984, p. 57). Furthermore, the development of the electric furnace for melting steel scrap has permitted the construction of steel plants (minimills) that do not use capital-intensive integrated processes. The electric furnace offers an alternative to expensive coke ovens and blast furnaces that are required to reduce iron ore.

Domestic minimills have competed successfully with imports, and have not had the difficulty raising capital that older, integrated firms have experienced (CBO 1984, p. 49). Although minimills produce a more limited range of steel products than integrated facilities and cannot be viewed as a replacement for them, they are currently expanding product lines. Estimates show that even new integrated facilities would not be competitive with minimills in the production of certain products, largely because of minimills' lower capital costs (Schorsch 1984, p. 36).

Conclusion

For the past 25 years, foreign steel producers have steadily increased their share of the U.S. market. Imports are now at record levels, while the domestic steel industry faces one of its most severe economic downturns. The world is currently plagued with excess capacity because of plant construction in Third World nations and a slower rate of growth in steel consumption in many of the more developed countries. These two trends have resulted in vigorous price competition. Since the United States has relatively few trade barriers, domestic steel firms have been particularly vulnerable. Temporary import

restraints could therefore prevent bankruptcies, unemployment, and the loss of some capacity that might be needed for the long term.

Nevertheless, the financial difficulties facing U.S. producers and the events in the world's steel markets are largely a result of long-term trends. If the domestic industry is to become more competitive, its investment strategies must be geared toward streamlining operations and perhaps adopting minimill techniques on a wider scale. Spending massive sums for modernizing old, capital-intensive plants, while the U.S. market is shrinking may only lead to more overcapacity and perpetuate current problems.

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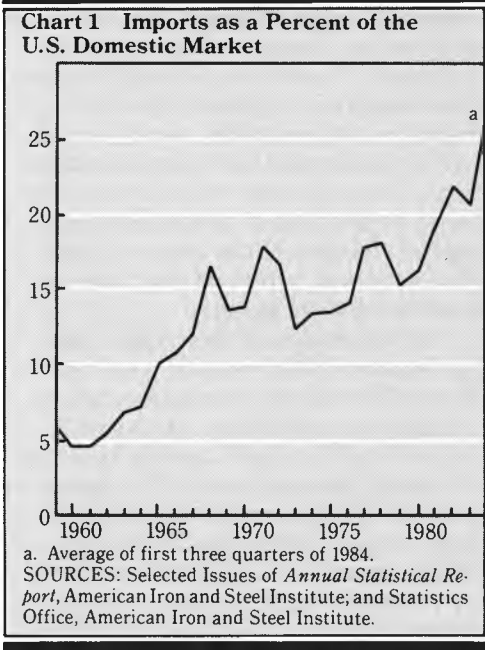
Federal Reserve Bank of Cleveland

ECONOMIC COMMENTARY

For U.S. steel manufacturers, 1983 was not a banner year; one-third of U.S. steelworkers were on layoff, it was the industry's second consecutive unprofitable year, and the market share of imports set a record high. Domestic steel manufacturers responded by appealing to the U.S. Congress to set global limits on imported steel and in November 1983, the Fair Trade in Steel Act was introduced. This act calls for setting import quotas at 15 percent of the domestic market supply for five years. (The foreign market share was 26.2 percent in the first three quarters of 1984). In September 1984, President Reagan announced he would push for voluntary restraints on foreign steel producers to limit imports of finished steel products to around 18.5 percent of the American market, and by December 1984, some major foreign steel producers had agreed to a five-year-long limit on exports to the United States.

Global limits on imported steel are, in a sense, the culmination of a 25-year effort by domestic integrated steel producers to curtail the importation of goods that are allegedly dumped or government subsidized. Domestic producers have charged that such "unfair" trade practices are largely to blame for their losing ground.¹ From the industry's point of view, no previous restraint program has dealt adequately with this problem. A review of events over the past 25 years reveals that in a number of cases foreign producers have been

guilty of trade violations in the context of U.S. legislation. Nevertheless, it is difficult to attribute all of the increase in imports to "unfair" competition. For example, a significant portion of imports has come from Japan, which is



widely recognized as having a comparative advantage over the United States in the production of steel. More recently, steel imports from Japan have been eclipsed by imports from other low-cost suppliers. Many analysts would cite such trends as the fundamental cause for the current difficulties of older, established U.S. firms. In this context, temporary import restraints without recognition of the underlying trends would only protect the steel industry at the expense of consumers.

Imports and Domestic Steel

by Amy Kerka

Legal Tug-of-War

Imports gained their first foothold in the United States in 1959, when foreign steel was purchased during a 116-day steelworkers strike. This was the first year since 1900 that the United States was a net steel importer. Imports in 1959 accounted for 6.1 percent of domestic steel consumption. (The share fell to 4.7 percent in 1960 and 1961.) Thereafter, imports grew both in tonnage and as a percentage of steel supply consumed (see chart 1). By 1967 imports accounted for 12.2 percent of domestic consumption. Importers increased their share of the market by selling at substantially lower prices than U.S. manufacturers; they were aided by the threat of strikes during steel-labor contract negotiations in 1965 and 1968 (Hogan 1971, pp. 2037-8). Foreigners could cut prices because of declines in raw material and shipping costs and significant productivity increases due to the introduction of new technology. This was particularly true of Japan. In the decade after 1958, Japanese unit labor costs (a measure of both productivity and labor compensation) declined by more than 30 percent; material and shipping costs also fell; meanwhile, unit labor and material costs in the United States remained constant, and surface transportation costs rose (Crandall 1981, pp. 22, 27).

or open hearth furnaces, rolling semifinished shapes, and producing final steel-mill products. All references to steel producers in this *Economic Commentary* refer to the integrated sector.

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1. See, for example, *Steel Comments*, July 15, 1984, American Iron and Steel Institute; and *Steel News*, June 8, 1984, American Iron and Steel Institute. Most steel in the United States is produced by integrated steel firms, which combine all steps in the steelmaking process at one site. These steps include reducing iron ore in coke ovens and blast furnaces, producing steel in basic oxygen

In September 1962, six domestic steel manufacturers charged wire rod producers in Japan, West Germany, France, Belgium, and Luxembourg with dumping goods and requested that special duties be imposed on these goods. The Treasury Department ruled that while Japan was selling wire rods at a very low price, it was not dumping them; the department did determine that European wire rod producers were selling wire rods at less than fair value. However, the Tariff Commission concluded that these dumped goods did not injure domestic firms, and it did not impose special duties (Lee 1963).

In response to these rulings, industry leaders petitioned the Congress to strengthen antidumping laws, and in 1967, began a major drive in Congress to enact a temporary tariff on imports of steel and pig iron. Such a tariff, it was argued, would allow the U.S. industry to modernize and compete (Hogan 1983, p. 197). When a bill to limit imports to 9.6 percent of the U.S. market was introduced in the Senate late in 1967, domestic steel switched its support from the levy to quotas.

Exercising Restraint

Rather than accept legislated quotas, the Japanese adopted a three-year voluntary export quota plan that went into effect in 1969. This arrangement allotted European Economic Community (EEC) and Japanese producers each 41 percent of total U.S. imports (set at 12.7 million tons for 1969) and permitted import levels to rise 5 percent a year for the next two years. Legislative action to limit imports was postponed, and voluntary export restraints (VERs) lasted through 1974. During the 1969-74 period imports averaged 14.6 percent of domestic consumption. Domestic steel manufacturers were dissatisfied with the VER program for two primary reasons. First, the voluntary nature of the program defeated its purpose; imports in 1971, for example, were 2.5 million tons above the

quota. Second, VERs restricted tonnage rather than import value. This spurred foreign producers to import more expensive products so that profitability of U.S. firms was lower than if restrictions had been product-specific (CBO, *see* Congressional Budget Office 1984, pp. 7-8).

Voluntary export restraints expired in 1974, and between 1975 and 1978 no specific limits were in effect for carbon-steel imports. A world steel boom, which had begun in 1973, ended abruptly in 1975. By 1977 foreign producers had cut their steel prices sharply in the United States, and foreign imports rose to 17.8 percent of domestic consumption. Partly because of the severe import competition, domestic producers closed some facilities, and profits that year were negligible (Hogan 1983, pp. 199, 201, 202). In response to this crisis, the Carter administration established a system of *reference prices* that would be used by the Treasury Department to determine if goods were being dumped. Steel imported at prices below the reference, or *trigger prices*, would be subject to accelerated dumping investigations. The reference prices were to be based on the cost of production, plus capital charges, of the most efficient steel producer, which at the time was considered to be Japan.

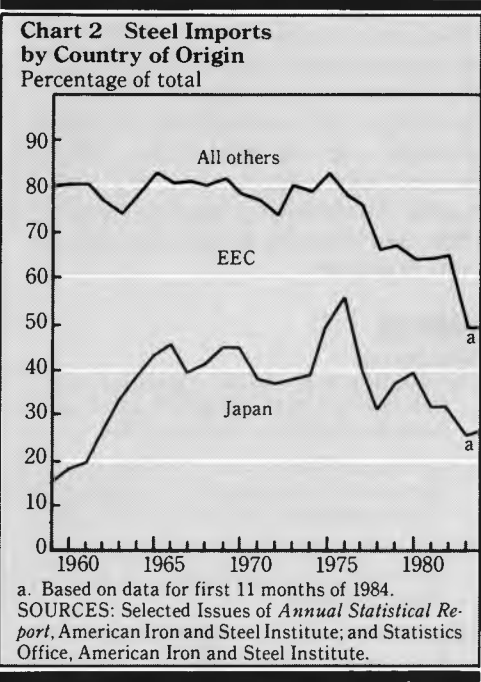
The imposition of the trigger price mechanism (TPM) was delayed until May 1978 to allow the processing and shipping of steel orders. As a result, imports in those four months rose significantly, helping boost 1978 imports to a record 18.1 percent of domestic steel consumption. After the TPM went into effect, import levels fell and profitability returned to the industry. Nevertheless, domestic producers were generally dissatisfied with the program and questioned Japanese industry cost data as well as the effectiveness of the program (CBO 1984, p. 9). In March 1980, U.S. Steel Corporation filed an antidumping suit against seven European nations, and the TPM was suspended. The suit was later dropped when the Carter administration proposed a new trigger price 12 percent above suspended prices. The new TPM went into effect in October 1980.

Recent Feints and Parries

Despite the new TPM, imports in 1981 rose from 1980 levels in tonnage and as a percent of supply consumed. Continued weakness in world steel demand led to substantial price cutting by overseas producers, and some steel was imported into the United States at prices below the TPM (Hogan 1971, p. 204). Foreign producers justified the price cuts by arguing that an appreciation in the dollar reduced their relative costs. In November 1981, the Commerce Department charged Brazil, Romania, France, Belgium, and South Africa with trade violations. These charges were later withdrawn when the Commerce Department agreed to process 38 of 92 antidumping suits filed by U.S. companies. The TPM was later suspended, because the U.S. government maintained it could not enforce the TPM and prosecute dumping complaints at the same time. In its June 1982 preliminary report on the antidumping cases, the Commerce Department found that foreign government subsidies ranged from nothing or a small fraction for some West German firms to 40.4 percent for British Steel (Hogan 1983, p. 205). Stiff penalties would have been levied against subsidized imports, but the charges were dropped in fall 1982 when the Reagan administration reached an agreement with the EEC to reduce steel exports to the United States for the next three years.

In 1982 and 1983, import tonnage fell from 1981 levels. Nevertheless, as a percentage of domestic consumption imports were higher (21.8 percent and 20.5 percent, respectively, compared with 18.9 percent in 1981) because of a decline in purchases of domestic steel. Based on data for the first three quarters of 1984, it appears that imports for the year will reach a new record in both tonnage and as a percentage of domestic consumption. Much of the increase in 1983-84 has come from outside the EEC and Japan (see chart 2). The recent surge can be traced to a Third World steel-expansion program undertaken in the second half of the 1970s to

develop capacity for domestic needs and for export. Latin America, China, India, South Korea, and Taiwan have significantly increased production.² Most steel plants in the Third World are government-owned, and some are competitive only because they are subsidized. However, some Third World



nations, particularly Taiwan and South Korea, have a legitimate cost advantage because of extremely low wages and modern equipment.

Long-Term Trends

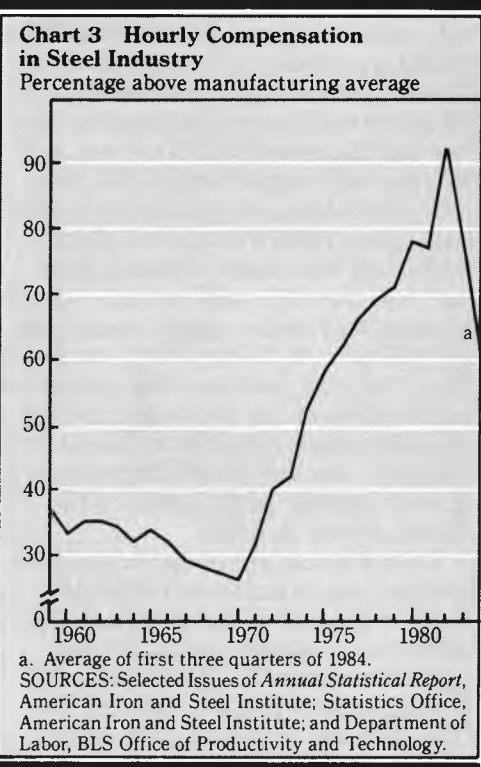
Although investigations by the U.S. government have found foreign steel-makers guilty of "unfair" trade practices in a number of cases, it is not certain that dumping has been the chief cause of the decline in U.S. producers' market share. Significantly, the cost advantage traditionally enjoyed by U.S. firms has gradually been eroded. Energy, raw materials, and labor costs together make up roughly 90 percent of the total cost per ton of steel produced domestically.³ Over the past 25 years, the United States has lost its comparative advantage in raw materials costs due in part to the discovery of inexpensive sources overseas. U.S. firms have also failed to contain labor costs. Since 1968,

labor contract settlements have been quite expensive, with the Steelworker's Union winning most of its demands. In 1968 steel compensation per hour was 28 percent above the manufacturing average. In 1982, it was 92 percent above the average (see chart 3). Hourly steel compensation in the U.S. is also about twice as much as in Japan. This differential could be offset, if productivity were high enough. In the 1950s the U.S. labor productivity rate for steel was three times that of the Japanese, which offset higher U.S. wages, but by the 1970s, Japanese productivity had met or exceeded the U.S. level. Such productivity improvements have occurred in other nations to a lesser extent. Furthermore, the growth rate of U.S. labor productivity in steel has been slowing. From 1953-83 productivity rose at an average annual rate of 1.6 percent; from 1973 to 1983 the rate was 0.6 percent.⁴

Domestic steel firms have made attempts to improve productivity. The long-held view of U.S. integrated firms is that this is best achieved by building new, large scale integrated facilities that produce a wide range of products with the latest technology.⁵ The Japanese have successfully used this so-called greenfield strategy, but it requires massive funds that U.S. firms have lacked for constructing new plants. Moreover, estimates show that the cost of building completely new facilities outweighs the expected productivity gains. Because of these constraints, U.S. firms have instead chosen the "brownfield" investment strategy in which older facilities are gradually replaced by larger, more modern units. During the 1960s, large sums were spent to install new equipment, particularly basic oxygen furnaces and hot strip mills. While this helped boost productivity of some manufacturing stages, productivity by product area was only marginally improved because old, inefficient equipment tended to offset productivity gains from new equipment. Low profitability has hampered further modernization efforts, and currently one-third of capacity is not considered competitive on a world-wide basis (Roderick 1984, p. 53). Domestic steel producers argue that unfair competition is

the primary reason for their poor performance record, while many analysts attribute it to long-term trends.

Stagnating domestic demand for steel, which is a consequence of the maturation of the U.S. economy is one such major trend (CBO 1984, p. 32). In mature economies, investments in steel-intensive infrastructure have already been made, technological progress introduces materials that replace steel, and the service sector, which uses comparatively little steel, grows in relation to manufacturing. From 1950 to 1981, for example, U.S. steel consumption grew at a compound annual rate of 1.0 percent, compared with 9.8 percent for Japan, 3.1 percent for Canada, and 3.6 percent for the EEC



(excluding the United Kingdom). Between 1969 and 1981, U.S. demand fell 0.9 percent a.r. (CBO 1984, p. 33). A major result of low domestic demand has been that U.S. firms have had less incentive to streamline operations, close inefficient facilities, and use technological innovations. In contrast, nations such as Japan have maintained high rates of investment in steel plants,

2. See William T. Hogan (1983, pp. 153-4 and 178-9) for a more detailed account of Third World steel producers.

3. For a more complete picture of U.S. productivity data cited here and below, see CBO (1984).

4. See table 9, 1983 *Annual Statistical Report*, American Iron and Steel Institute, Washington, DC, 1984.

5. For a full description of the modernization efforts outlined here, see Barnett and Schorsch (1983, pp. 53, 72, 138, 170, and 180).