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International Steel: Some Issues Ahead

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An Intelligence Assessment

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This paper was prepared by [redacted] Office of Global Issues. Comments and queries are welcome and may be directed to the Chief, Economics Division, [redacted]

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International Steel: Some Issues Ahead

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Key Judgments

The developed country steel producers face tough sledding in the decade ahead. Although a shake-out has occurred in the industry during the last several years, especially in the United States, the problem of massive excess capacity remains. With economic activity in the mature economies shifting away from steel intensive activities, there is little chance that developed country steel industries will regain adequate rates of profitability until at least the end of the decade.

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The USSR is the largest single OECD export market and appears to offer the greatest potential for expansion. The USSR currently accounts for 15 to 18 percent of EC and about 6 percent of Japanese steel exports. We believe that non-Communist steel producers, particularly in the EC where the need for new business is greatest, will continue to exploit this market by offering the lowest possible prices and subsidized credits. They obviously hope that Moscow will channel these savings—which could amount to several billion dollars over the 1981-85 period—into increased steel purchases. However, the Soviets may use the savings to increase hard currency imports of other commodities, such as grain, in equally high demand.

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Net steel exports to the LDCs have not increased since the mid-1970s and probably will remain stagnant. The LDCs are continuing to develop their own steel industries, and their level of self-sufficiency is steadily increasing. Moreover, some LDCs are beginning to compete with developed countries in the world steel market, and this competition will gradually increase.

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A fiercely competitive steel market will keep most OECD steel producers financially weak for years. The situation will be least serious in Japan and most severe in Europe. The EC does have a fair chance to carry out its planned termination of subsidies by the end of 1985 if closer cooperation among the steel producers continues to strengthen domestic steel prices. Nevertheless, EC steelmakers will still face a fragile situation and will remain heavily dependent upon the EC Commission to enforce steel production quotas and steel price guidelines and to restrain imports.

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Information available as of 30 June 1982 has been used in the preparation of this report.

[redacted]

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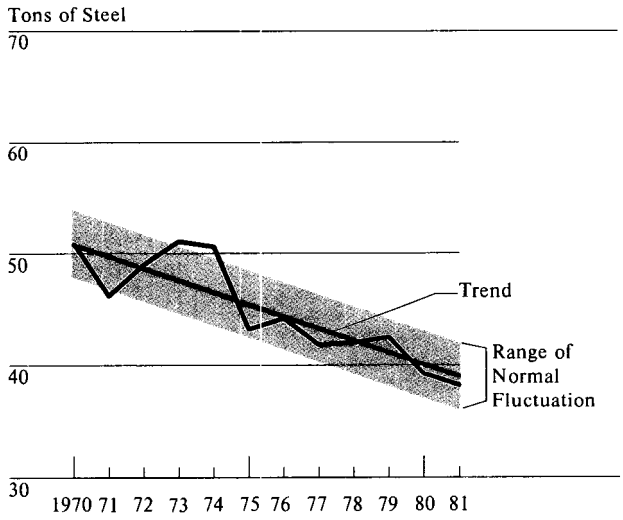
OECD: Steel Consumption Per Million Dollars of GNP at 1978 Prices



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International Steel: Some Issues Ahead

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The steel industry in the developed countries remains in deep recession. Crude steel production slumped to 388 million tons last year, leaving one-third of capacity idle. Output is now 15 percent below the 1974 peak. EC firms lost about $4 billion in 1981—most of which was covered by government subsidies—while profits for Japanese producers sagged to their lowest level in years. The industry shake-out has already led to some 600,000 steel-related job losses in the developed countries since 1974. The West European steel industry experienced the sharpest decline, and in many respects is struggling with more severe adjustment problems than either the Japanese or the US industry.

Table 1 Million Tons

OECD: Finished Steel Capacity

	1970	1975	1980	1985 [a]
Total	**319**	**398**	**444**	**444**
United States	99	101	101	100
Japan	75	117	135	154
EC	112	135	155	150
Others	33	45	53	54

[a] Projected.

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Demand Problems Ahead

Most industrial country steel firms expect demand within the developed countries to remain weak through the mid-1980s at least. The Japanese Iron and Steel Federation, for example, recently revised its 1985 production forecast downward to 110 million tons of finished steel—no higher than the 1973 record. A recent study by the EC Commission estimates that in 1985 steel consumption in the Community will reach only some 96 million tons of finished steel. If these assessments materialize, overall demand for developed country steel in the mid-1980s probably will be little or no higher than in the peak years 1973-74. Capacity has expanded substantially since then, and continuing heavy overcapacity appears likely through much of the decade.

Several factors contribute to the sluggish growth in demand. Economic growth has moderated, averaging only about 3 percent annually in the OECD during the last business cycle. Beyond this, however, the intensity of steel usage has fallen sharply in OECD countries since 1970 for a variety of reasons:

- A shift in economic activity toward services and consumer goods with little steel content.
- A slowdown in the construction of heavy industry.
- The downsizing of passenger automobiles and the substitution of lighter materials for steel.
- The depression in shipbuilding.

There are only a few bright spots in the demand outlook. Increased military spending in the United States will boost US demand for steel somewhat. Currently, military uses account for only 3 to 4 percent of US steel consumption, amounting to no more than 2 to 3 percent of total capacity. Industry experts believe that the pipe and tube market will recover from its current slump and strengthen as time passes; because the demand for tubular goods is heavily concentrated in the United States, US firms should benefit from strong demand for these products. In 1981, an exceptionally good year for the pipe and tube market, US consumption increased by about 3.5 million tons; American firms supplied about one-third of the increase.

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The LDC Problem

In contrast to the early 1970s, developed country steel firms can no longer count on the LDC market as an outlet for large quantities of their steel. During the last decade, the LDCs installed about 50 million tons of new capacity and are continuing to add new facilities fairly rapidly. As a result, LDCs will account for all of the net steel capacity expansion taking

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Table 2

Million Tons of Finished Steel

OECD: Steel Market in 1985

	1974	1979	1982 [b]	1985 Projections [a] (At Annual Average 1983-85 Economic Growth Rates of:)		
				3.0 Percent	4.0 Percent	5.0 Percent
Total	355	340	290	335	350	365
Domestic consumption	315	300	250	295	305	315
Net exports	40	40	40	40	45	50
Capacity utilization (percent)	89.0	79.0	68.0	75.5	78.8	82.2

[a] Projections assume continued decline in steel intensity matching that of the 1970s.
[b] Projected.

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place in non-Communist countries through the mid-1980s. Based on projects now under way, total LDC capacity probably will reach 110-115 million tons by the end of 1985, up from nearly 76 million tons in 1980. About half of the new development will be in Latin America; most of the rest will be in Asia.

Given this increase in capacity, we believe the LDCs' production growth should roughly match their consumption increases at least over the next five years. Consequently, developed country firms probably will be unable to boost exports to the group much, if at all. Between 1970 and 1975, by comparison, exports to the LDCs jumped by nearly 20 million tons. Indeed, as LDC production outstrips demand in several producing countries, exports to developed countries—particularly of basic grades of steel—will begin to rise.

LDC steel exports are already beginning to have an impact on the developed country steel industries. Most LDC steel exports are sold in other Third World countries, but 4-5 million tons are now shipped annually to the developed countries. LDCs export predominantly basic carbon steel products, but they also sell some of the more sophisticated products in the alloy and stainless steel categories. Until recently, no LDC was a consistent net steel exporter. Now, South Korea is establishing itself as a net exporter; most of its exports go to other LDCs, but significant amounts are shipped to Japan and to the United States.

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EC Steel Problems

The EC steel industry is facing a crisis. Problems of excess capacity, declining markets, and unemployment are more severe there than in either Japan or in the United States. Although the US industry is being hit hardest by the current recession, with capacity utilization falling below 45 percent at times, during most of the period since 1974 the United States has been able to occupy 75 to 90 percent of its steel industry. The Japanese, on the other hand, have never exceeded a 75-percent operating rate during this period while the EC industry has fallen below 70 percent of capacity. Since 1974 nearly 250,000 EC steelworkers have lost their jobs, a reduction in force of over 30 percent. In an attempt to bolster the industry, the EC Commission and member governments have:

- Pumped about $20 billion in financial aid to the industry over the past seven years.
- Established production quotas to restrict supply and shore up prices.
- Established minimum prices and price guidelines for both domestically produced and imported steel.
- Negotiated export restraint agreements with most of the countries exporting steel to the EC.

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Economics of the LDC Steel Industries

LDC governments promote steel industry development because it offers substantial economic benefits. Despite the large amounts of capital required, the steel industry is still fairly labor intensive and therefore provides sizable employment opportunities. In addition, steelmaking requires only medium- to low-level technology, which can be absorbed reasonably well by many LDCs. The profitability of new steel capacity in the LDCs, however, is difficult to assess because of the current depressed state of world steel prices and uncertainty concerning the outlook for their recovery. [redacted]

At today's steel prices, it is difficult to justify the construction of new capacity in most of the LDCs. In Brazil, the largest LDC producer and a good representative of the group, the estimated cost of producing basic flat rolled carbon steel in a new mill ready for initial production would be $500 to $550 per finished ton (1980 prices). This estimate calculates capital costs at full market value; at subsidized rates of return closer to those actually prevailing in LDCs, costs probably would be $20 to $30 lower. Even these lower costs could not be fully covered, however. In 1980, basic flat rolled carbon steel products could have been landed in Brazil for about $430 per ton. [redacted]

In terms of the steel industry's contribution to the balance of payments, however, substantial benefits would accrue to the LDCs, even at current steel prices. In the case of Brazil, we estimate that about half of a new mill's material, fuel, and miscellaneous supplies would be imported, while most of its interest payments (and possibly some of its profits) would be remitted abroad. Taking local currency costs into account, we estimate that the foreign exchange costs to produce steel domestically would be about half that required to import steel. [redacted] 25

In Far Eastern LDCs, however, steel production may be profitable even in today's market, largely because much lower wage rates reduce both mill construction and operating costs. We estimate that production costs in a new South Korean mill probably would be more than $100 per ton lower than in Brazil. Taking subsidized capital into account, total production costs (at 1980 prices) could be as low as $360 per ton, moderately below the cost of importing basic flat rolled products from Japan. [redacted] 25

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We estimate that about three-fourths of the direct financial assistance has been used to cover the industry's losses sustained since 1974. Substantial amounts also have been extended to support investment spending for modernization and reorganization and to support R&D. Additional aid, probably not included in the $20 billion total, has been given to unemployed steelworkers to finance retraining, relocation, and early retirement. EC financial aid has taken a variety of forms:

- Direct cash injections.
- Government loans both at subsidized and at market interest rates.
- Loan guarantees.
- The conversion of outstanding government loans to equity holdings to reduce steel company interest payments. [redacted] 25

Despite continuing squabbles, EC steel producers have put together a fairly effective cartel over the past year. Better cooperation between the major steel producers and the EC Commission has yielded closer adherence to production quotas and target prices. Consequently, list prices have been raised and price discounting has nearly ceased. Effective prices within

Table 3
LDCs: Steelmaking Capacity by Region and Major Producer

Million Tons of Crude Steel

	1980	1985 [a]
Total	**75.5**	**113.5**
Latin America	**36.5**	**56.5**
Brazil	16.5	27.0
Mexico	10.0	15.5
Argentina	4.7	5.0
Venezuela	2.8	4.5
Others	2.5	4.5
Africa	**2.5**	**8.0**
Algeria	0.9	3.0
Nigeria	0.2	2.5
Others	1.4	2.5
Middle East	**5.3**	**7.0**
Iran	2.3	2.3
Egypt	1.8	2.6
Saudi Arabia		0.9
Others	1.2	1.2
Asia	**31.2**	**41.0**
India	15.2	19.0
South Korea	8.5	12.0
Taiwan	4.4	5.0
Others	3.1	5.0

[a] Projected.

[redacted]

the Community have increased about 25 percent since mid-1981, and early financial results indicate that the EC industry as a whole may almost break even this year. If this happens, we expect that subsidy payments by EC governments will drop sharply. In 1981 subsidies may have equaled 10 percent of the EC steel industry's total sales. [redacted]

The EC has had less success in its efforts to force the scrapping of old, high-cost plants to achieve a better balance between capacity and demand. EC crude steel capacity in 1981 was estimated at 201 million tons, down only slightly from the peak level of 203.5 million in 1979. Although the EC Commission believes there is about 30 million tons of excess capacity in the Community's industry, recent surveys of company intentions indicate that capacity will decline only marginally by 1985. Since the surveys have regularly overestimated actual capacity levels we believe that crude capacity reductions will be somewhat greater but will not exceed 15 million tons. [redacted] 25X

The Situation in Japan

In Japan steel producers have not needed direct government financial aid because the industry has shown a profit in almost every year since the steel crisis began in 1975. The industry's efficiency and low hourly labor costs (only about half that of the United States) are the main reason for this achievement. In addition, yen appreciation since 1976 has helped reduce the cost of imported raw materials. Profits also have been helped by the strong price discipline the five major Japanese steelmakers maintain in their domestic market, thus avoiding the cutthroat pricing that at times has brought chaos to the EC market. [redacted] 25X

Because of its low costs, the Japanese steel industry traditionally has faced no threat from imports. This situation may now be changing as more steel from South Korea, Taiwan, and some other LDCs enters the Japanese market. Much of the Japanese steel industry, however, appears to recognize this as inevitable. Japanese steelmakers are shifting output toward higher value steel products in which they maintain a strong competitive advantage, and probably will gradually surrender an increasing share of their domestic market for the basic steel grades to LDC suppliers. [redacted] 25X 25X

Soviet Needs Ahead [1]

In sharp contrast to the West, the Soviet steel industry faces greater requirements than it is able to supply. Following declines in 1979 and 1980, production of crude steel and rolled steel products registered little improvement last year. Shortages of steel, especially high-quality products, are already holding back the growth of civilian machine building. Shortfalls in 25X

[1] For a detailed assessment of the Soviet steel industries, see DDI Intelligence Assessment SOV 82-10089 (Confidential NF), June 1982, *Sluggish Soviet Steel Industry Holds Down Economic Growth.* (U)

Keeping Costs in Line

Technological development in the steel industry is at best a gradual process and is slower still in bad times. Steel industry investments are and are likely to remain low for some time because there currently are relatively few opportunities for profitable investments. No new capacity is needed—except possibly new pipe and tube capacity. While many new cost-cutting technologies are available, few will reduce current inputs enough to justify the high capital cost of fitting them into existing plants.

With demand slack, OECD steelmakers face an uphill battle in their efforts to cut costs and buttress profits. In the past, most gains in productivity came from construction of integrated plants. Now steelmakers are trying to improve cost performance chiefly by:

- *Constructing electric furnace capacity to use scrap, thus eliminating the smelting of iron ore in blast furnaces.*
- *Installing continuous casting to avoid ingot casting, reheating, and primary rolling.*
- *Implementing operational modifications, including improved maintenance and increased computerization, and use of waste heat and gas.*

These measures have been most successful in saving energy. We estimate that average OECD energy consumption per ton of steel will fall from 27 million Btus in 1980 to 20 million or less by the end of the decade—representing a cost reduction of around $30 per ton at current energy prices. Japan will approach a rate of 16 million Btu/ton by 1990, while the US average will decline from 33 million Btu/ton to 26 million. Because of its higher fuel prices, however, Japan's energy costs per ton of output will remain close to those of the United States. 25 25

We believe the relative cost position of major OECD steel industries probably will not change much through the 1980s. As the construction of new mills has almost stopped, labor productivity gains throughout the OECD have slowed. Investment levels in the EC, Japan, and the United States have been roughly the same for several years, and we expect this to continue as long as there is no fundamental change in the market. In the United States, some further shakeout of old capacity, the retreat of the dollar to more normal levels, and completion in the adjustment of fuel costs to world market levels will all help the steel industry. Japan will keep pace, however, as it continues to lead the way in labor and energy productivity gains. 25 25

steel will eventually force cutbacks in investment in other key sectors of the economy such as electric power, transport, and nonferrous metals.

The root cause of the deteriorating performance of the Soviet steel industry is inadequate investment in all sectors—from mining to rolling and finishing steel products. Although the Soviets have invested over 45 billion rubles in the steel industry since 1960—7 percent of total industrial investment—these allocations have not been enough to support ambitious development plans. In addition, lagging production of coking coal and iron ore, and less-than-hoped-for gains in the supply of scrap metal, have emerged as major chokepoints, limiting gains in steel production. Tight supplies of these raw materials will substantially limit gains in steel production and undercut Soviet plans to modernize existing steelmaking capacity. 25 25

Table 4 Million Tons of Crude Steel

LDCs: Steel Production, Apparent Consumption, and Net Imports

	1960	1965	1970	1975	1980	1985 [a]
Apparent consumption	21.2	31.1	41.7	73.0	98.4	130.0
Production	8.7	16.1	22.3	33.0	57.7	90.0
Net imports	12.5	15.0	19.4	40.0	40.7	40.0

[a] Projected.

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The Soviet 11th Five-Year Plan (1981-85) calls for the production of crude steel and rolled steel products to increase to 168 million tons and 118 million tons, respectively, by 1985—roughly the same levels first planned for 1980. We doubt that even these modest goals are obtainable. Indeed, we estimate that output of crude steel will increase to about 155 million tons by 1985 and rolled steel output to about 108 million tons—roughly the same tonnage increase achieved during 1976-80. To meet even these goals, the Soviets will have to take tough steps to assure that the industry has adequate raw materials, labor, and fuel for relatively trouble-free operation and that increased investment allocations are forthcoming. We believe that it will be difficult for the Soviets to provide the needed investments. Recent statements by Brezhnev indicate that industrial investment will be cut back from the original goals of the 1981-85 plan, and we believe these reductions are likely to have at least some adverse impact on steel industry developments.

The Soviet steel industry's inability to meet the country's growing need for the more sophisticated steel products has resulted in a sharp jump in Soviet steel imports from the West—from an average of about $2.5 billion in 1975-79 to roughly $3.5 billion in 1980-81. Steel now ranks second only to grain in the Soviet import bill. Imports of large-diameter pipe will be especially important in view of Soviet plans for the construction of oil and gas pipelines, including the proposed Siberia-to-Europe line. This line will require about 3 million tons of high-quality steel pipe. We believe that the Soviets will not be able to produce this type of pipe in quantity during the 1980s. Until at least the mid-1980s, the Soviets will also need to buy large amounts of cold-rolled sheet for machine building, automobiles, and consumer durables; tin plate for canning and packaging; and various types of sheet products for transformers and electric motors. We estimate that total import needs to cover gaps in domestic production capabilities will total $17-20 billion in 1981-85. Soviet needs for Western steel could rise by an additional several billion dollars as a result of their projected inability to meet planned production goals. Actual import levels will depend on overall hard currency availability and how Moscow allocates its scarce cash resources.

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Western Reaction to Soviet Needs

Given the depressed outlook for non-Communist demand, West European and Japanese steel firms will compete fiercely for exports to the USSR. In recent years Soviet sales have accounted for 15 to 18 percent of EC steel exports to countries outside the Community. West Germany supplies more than half of these shipments, making it the most dependent on the Soviet market among non-Communist producers. Among other EC members, France and Italy each sell 5 to 9 percent of their non-EC steel exports to the Soviet Union. Japan is in roughly the same category; 6 percent of Japanese steel exports go to the USSR.

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Table 5 Million Tons of Crude Steel

USSR: Steel Production, 1970-81

1970	115.9
1971	120.6
1972	125.6
1973	131.5
1974	136.2
1975	141.3
1976	144.7
1977	146.7
1978	151.5
1979	149.0
1980	147.9
1981	149.0

Despite its pressing need for steel products, the USSR has extensive bargaining leverage in dealing with Western steel firms—particularly those in Western Europe. Individual firms beset with massive excess capacity are anxious to increase utilization rates. Steel plants have enormous fixed costs; lengthening production runs would cut average cost per unit of output by increasing capacity utilization rates. West European governments, for their part, are eager to see an improvement in this sector. With unemployment at record levels, West European leaders are anxious to stop further deterioration in steel industry employment. Although the Japanese industry faces less severe problems than its West European counterpart, we believe it too will focus sales efforts on the Soviet Union. With prospects for increasing exports to other markets bleak and domestic demand still depressed, the Soviet market is one of the few alternatives for increasing sales.

Competitive pressures in Japan and Western Europe are likely to result in bargain prices and credit terms for Soviet steel purchases.

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The impact of easy credit terms on the volume of Soviet steel import is problematical. Total hard currency savings to the USSR from subsidized credits and low steel prices could amount to several billion dollars, particularly if market interest rates remain high and the apparent trend toward increased credit subsidies for nontubular steel continues. The USSR, however, probably will not channel all these savings into increased purchases. The leadership may decide to allocate these funds to other areas, such as grain, rather than increase the volume of imported steel.

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Other Issues Ahead

The shake-out in the industrial country steel industry has a long way to go. OECD-wide there will still be substantial excess capacity in place at the peak of the next business cycle. Even if a vigorous recovery begins next year, the capacity overhang would still be in the 75- to 100-million-ton range by 1985. In this environment, firms and governments will be under intense pressure to push exports in an attempt to maintain output and employment.

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Given the pressure to export, the US ruling that seven EC countries have illegally subsidized their steel exports is drawing strong condemnations from Western Europe. The EC Commission has already announced that it believes the ruling violates the US

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Table 6

Thousands of Workers

Major OECD Steel Industries: Total Steel Employment as a Share of Industrial Employment

	1974		1980		1982 [a]	
	Steel	Percent of Total	Steel	Percent of Total	Steel	Percent of Total
United States	512	2.1	399	1.5	353	NA
EC	792	2.0	597	1.6	548	NA
Japan	454	2.9	380	2.4	371	NA

[a] As of January.

[redacted] 25X

pledge made at the Versailles Summit to promote free trade. West German officials have warned that the ruling will make it more difficult for Bonn to resist pressure from those EC countries that have longed for an excuse to restrict imports of US agricultural goods. The Italians have complained that the ruling not only will result in loss of an important export market, but also will intensify competition within the Community and jeopardize the EC steel restructuring program. Most of the 5 percent of EC steel output once directed to the United States may now be targeted to the EC internal market, putting additional downward pressure on prices and increasing calls for government support. Production quotas—recently extended through June 1983—may have to be revised downward. [redacted]

Growing exports of steel from the LDCs pose further adjustment problems for industrial country steel producers. Because of their cost advantages, the LDCs probably will capture a growing share of developed country markets for basic grades of steel. Indeed, some German steelmen suggest that the future of the European industry may lie in the rolling and finishing of imported feedstock. In the United States this shift may already be taking shape. Kaiser Steel, the ninth-ranking US producer, has announced the closing of its blast furnaces and steelmaking shop at its mill in Fontana, California. In the future, the mill will operate only as a reroller, using imported semifinished steels. [redacted] 25X

Semifinished steel is already an important part of LDC steel exports. One new mill in Tubarao, Brazil, is being built exclusively for the production of semifinished steel for export to the world market. Looking even further ahead, if LDC producers manage to maintain a substantial cost advantage over OECD producers, they probably will begin to add new capacity beyond domestic needs. Expansion plans for the late 1980s will show whether some LDCs, such as Brazil and South Korea, plan to make the leap to major export capability much as Japan did in the 1960s. [redacted] 25X 25X