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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

Japan's Steel Industry: Recent Trends and Prospects

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
March 1973

INTELLIGENCE MEMORANDUM

**JAPAN'S STEEL INDUSTRY:
RECENT TRENDS AND PROSPECTS**

SUMMARY

1. Japanese crude steel output rebounded to 97 million metric tons last year and reached an annual rate of 110 million tons in early 1973. Now the world's third largest producer, Japan has a good chance of becoming the leader by the mid-1970s.

2. Running counter to the production trend, Japan's export tonnage of rolled steel fell 10% in 1972, to about 22 million tons. The decline reflected the tightening supply situation at home, restrictions on shipments to the US and European Community markets, and a general settling down from the extraordinary 34% export gain in 1971. Japan continued to diversify its steel export market to offset "voluntary" restraint programs, but the United States remained by far the largest overseas market.

3. Domestic and foreign demand for Japanese steel is expected to remain strong during the next several years. The chief export thrust will be toward less developed countries - especially those in Asia, where the industry already has made major inroads. Japan's competitive edge in these markets will not be altered substantially as a result of the recent dollar devaluation and floating of the yen. By 1975, Japan probably will be producing about 100 million tons of steel for the home market and 35 million to 40 million tons (in crude steel equivalents) for export.

4. While continuing the export drive, Japan is expected to invest sizable sums in steel facilities abroad, especially in less developed countries. The industry sees these investments as a means of reducing local resistance to Japanese exports or offsetting restrictions on them. In some cases, the Japanese expect to use the plants to supply third markets - probably including the United States, where they also hope to set up a steel plant.

Note: Comments and queries regarding this publication are welcomed. They may be directed to [redacted] the Office of Economic Research,

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DISCUSSION

Background: Recent World Steel Trends

5. The world steel industry is rapidly emerging from its first recession in a decade. Overall production fell by 2% in 1971, when demand in the major consuming countries, including Japan and the European Community (EC), weakened because of sluggish economic activity. In Japan, a drop in output ended one of the longest periods of sustained, rapid growth of any major steel industry. The largest decline in output, however, occurred in the United States, where production fell for the second successive year. As a result, it lost its position as the world's leading producer to the Soviet Union (see Table 1).

Table 1

Growth in World Crude Steel Production

Million Metric Tons

<i>Year</i>	<i>Japan</i>	<i>United States</i>	<i>USSR</i>	<i>United Kingdom</i>	<i>European Community (of Six)</i>	<i>Other Countries</i>	<i>World Total</i>
1965	41	119	91	27	86	103	467
1966	48	122	97	25	85	106	483
1967	62	115	102	24	90	106	499
1968	67	119	107	26	99	113	531
1969	82	128	110	27	107	122	576
1970	93	119	116	28	109	130	595
1971	89	109	121	24	103	136	582
1972	97	120	126	25	113	148	629

6. In 1972, steel demand rose sharply, and all major producers except the USSR and the United Kingdom registered sharp output gains. Although world output rose by 8%, accelerating economic growth in the industrialized countries caused demand to begin outpacing supply late in the year. Steel supplies in the United States, for example, are rather tight now, and the EC steel industry reports having difficulty meeting demand. To cope with the situation, leading steel firms have been moving to expand capacity as well as activating facilities idled during the 1971 slowdown.

7. Despite the industry's widespread recovery last year, the trend toward restricting international trade in steel continued. In the late 1960s,

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the United States negotiated "voluntary" agreements limiting steel shipments from Japan and the EC to the US market. In 1972, controls on these shipments became much more restrictive, and the EC pressured Japan into placing tight limits on shipments to the Community. As a result, about one-third of Japan's steel exports now go to markets covered by restraint programs.

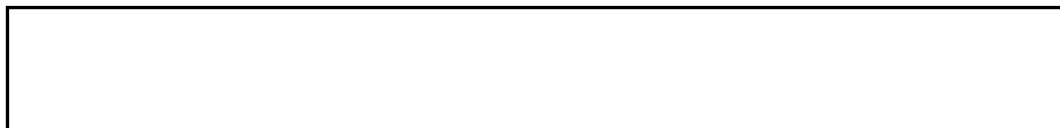
The Japanese Industry's Recent Performance

8. In 1971, Japan's steel industry experienced its first slump since 1962.¹ Production fell by about 5%, to 89 million tons, because of sharply reduced domestic consumption arising from the general economic slowdown. Domestic consumption, in terms of crude steel equivalent, fell by 12 million tons - or 18% - but more than one-half of this drop was offset by a large increase in exports.

9. With the decline in sales and production, Japanese steelmakers established an industrywide cartel to avoid price-cutting competition at home, sharply lowered their long-term production goals, and stretched out planned investment in new plant and equipment. Scheduled completion of the first stage of Nippon Steel's large Oita plant, for example, was delayed about a year - to 1972. Prior to the 1971 slump, the industry expected to produce around 150 million tons of steel by 1975, which would make Japan the world leader. In the midst of the slowdown, however, that goal dropped as low as 120 million tons.

10. The industry's pessimistic mood evaporated with the recovery of output in 1972. Production began speeding up early in the year, as economic growth accelerated; for the year as a whole it advanced by 9%, to an all-time high of 97 million tons. Although the industry is now producing at an annual rate of about 110 million tons, it still is having difficulty satisfying domestic demand. In fact, efforts have been made recently to meet a shortage of semifinished steel by importing from the United States.

11. With the strong rebound in demand, the industry has been trying to bring idle facilities into full operation as quickly as possible and has stepped up its investment program. Plant capacity approximated 124 million tons at the end of 1972, compared with 104 million at the end of 1970. Despite the stretch-out of investment spending in 1971, outlays for new plant and equipment during 1971-72 totaled about US \$4.7 billion, as against only \$2.7 billion in the United States and \$4.9 billion in the six EC countries.



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12. While output rose by 8 million tons in 1972, steel shipments to overseas markets declined by 2 million tons from the abnormally high 1971 level – mainly because strong domestic demand reduced the supplies available for export. Japan could not reasonably expect much, if any, expansion in foreign sales last year, given its 1971 export performance. In 1971, Japanese efforts to maintain output despite declining domestic sales led to an extraordinary 34% rise in export tonnage, to 24 million tons of rolled steel valued at \$3.7 billion. The feat was all the more remarkable, considering the decline in worldwide demand. As a result, Japan exported 34% of its rolled steel output in 1971 and accounted for 30% of world exports (including intra-EC trade), compared with a 25% average in 1969-70.

13. Export restraints, particularly for the EC market, also contributed to the drop in overseas shipments last year. Under the agreement with the Community for 1972, shipments were limited to 1.25 million tons, compared with 1.63 million tons the previous year – a 23% drop. In 1971, in contrast, shipments had risen by 73%. Although export tonnage to the Community did fall sharply in 1972, the Japanese probably overshipped by at least 100,000 tons. Controls on shipments to the UK market were initiated in 1972, but these were either not very restrictive or were largely disregarded, as export tonnage rose an estimated 20%.

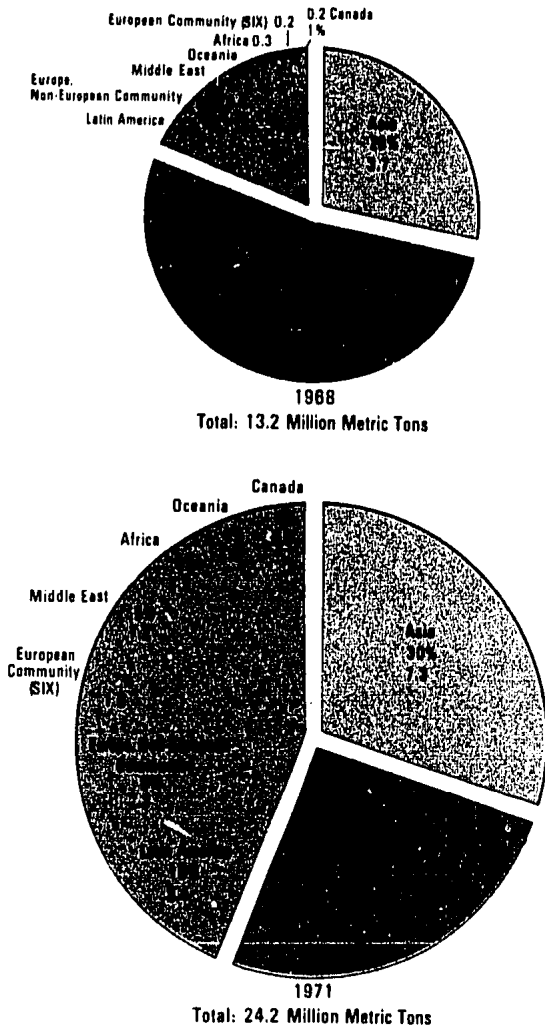
14. Japan failed to meet the terms of the US restraint agreement as well. Under the 1972 arrangement, quotas were set for all specialty steels – stainless, tool, other alloy steels, and cold finished bars – but Japan exceeded the limit in all categories except stainless. According to US data, steel imports from Japan were within the agreements' limit of 5.9 million tons. Japanese figures, however, show exports to the United States of 6.3 million tons, including some unusually large December shipments that did not arrive until 1973. In any event, this was not the first time Japanese data showed violations of the restraint program. Under the agreement covering 1969-71, exports exceeded the cumulative three-year limit by nearly one million tons. The restraint measures, nevertheless, have helped to reduce Japanese annual steel exports to the United States by more than one-half million tons since 1968.

15. Restricted in expanding sales to the United States and the EC, the Japanese have worked very successfully to develop alternative markets for their steel. Markets not covered by restraint programs have, in effect, accounted for all the growth in exports over the past several years. As a result, only about one-fourth of Japan's steel shipments went to the US market in 1971, compared with a little more than one-half in 1968 (see the chart).

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Japan: Distribution of Rolled Steel Exports



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16. Japan has made its greatest volume gains in nearby markets, which took 7.3 million tons of Japanese steel in 1971 – twice as much as in 1968 – and now absorb close to one-third of total shipments. The largest Asian market for Japanese steel is the People’s Republic of China, which now buys some two million tons a year – more than total shipments to the EC. The most rapidly growing Asian markets, however, have been South Korea, Taiwan, and Singapore, each of which bought in the neighborhood of one million tons in 1971, reflecting increases of 113%, 77%, and 212%, respectively, above the 1968 level. Since the mid-1960s, Asian countries as a group have constituted the world’s fastest growing market for steel, and the overwhelming share of their imports comes from Japan. Although exports to some Asian nations slipped last year, overall Japanese sales to the area probably changed little.

17. While concentrating on Asia, the Japanese have made large gains in other steel markets as well. Shipments to the EC, other European countries, Canada, the Middle East, Latin America, Africa, and Oceania all rose sharply between 1968 and 1971, as the following tabulation shows:

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CONFIDENTIAL*Percentage Change
1971 over 1968*

Total	84
Asia	99
United States	-9
Canada	351
European Community (of Six)	692
Other Europe (including USSR)	468
Middle East	179
Latin America	276
Africa	277
Oceania	154

Shipments to some of these markets slipped last year, mainly because Japan's supply situation tightened. Exports to Argentina, to take an extreme case, rose by 135% in 1971, to about one million tons, but fell back to 500,000 tons in 1972. Japan nonetheless nearly maintained its share of world exports at about 30%.

The 1971 Currency Revaluation and Japan's Competitive Position

18. Although tonnage in 1972 dropped by 10%, the value of Japan's steel exports rose by 4%, to \$3.8 billion. Earnings rose because Japanese steelmakers steadily raised their dollar prices following the December 1971 Smithsonian agreement. When the yen was floated in August 1971 and began to rise in value, the industry initially absorbed nearly all of the currency change out of concern about maintaining export volume. Early in 1972, with the supply situation changing, Japanese steel prices began mounting fairly steadily, and by August most of the 1971 revaluation had been passed forward in the form of higher dollar prices. The overall price rise from the first half of 1971 to the first half of 1972 amounted to about 12%, or roughly three-fourths of the revaluation.

19. Japan has not raised steel export prices uniformly for all markets. For sales to the United States, for example, dollar prices averaged about 9% higher during the first half of 1972 than in the same period of 1971. The below-average increase for the US market reflects the fact that prices being charged by Japanese exporters already had been pegged just below the US domestic level. There consequently was relatively little room to hike prices without weakening Japan's competitive position. In other markets, where Japan's prices had been kept relatively low, it was much easier to raise them sharply without seriously hurting sales. Prices for sales

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to several Southeast Asian countries, for example, were raised by 20% or more without significant loss in Japan's market share.

20. Price changes fluctuated from product to product as well. For US imports, the change in dollar prices varied from a 19% increase for cold rolled sheets and strip to a 26% cut for tool steels (see Table 2).

Table 2

Japan: Change in Prices for Steel Exports to the United States

<i>Type of Steel</i>	<i>US \$ per Metric Ton</i>				<i>Percentage Change</i>	
	<i>1970</i>	<i>1971</i>	<i>Jan-Jun 1971</i>	<i>Jan-Jun 1972</i>	<i>1971 over 1970</i>	<i>Jan-Jun 1972 over Jan-Jun 1971</i>
Flat rolled steel						
Hot rolled, uncoated	111	124	120	136	12	13
Hot rolled, coated	184	190	175	205	3	17
Cold rolled	133	146	142	169	10	19
Pipes and tubes	163	174	171	190	7	11
High-carbon rods and wire						
	197	203	200	204	3	2
Alloy steels						
Stainless steel	1,083	1,048	1,051	1,102	-3	5
Tool steel	851	1,486	1,885	1,400	75	-26
Other	249	260	243	269	4	11
Low-priced steels						
Wire and rods	124	133	132	135	7	2
Bars and structurals	132	134	127	140	2	10
Other shapes	208	339	89	97	63	9
Average	173	183	179	196	6	9

Japan's prices for individual products apparently were set at levels designed to keep them competitive not only with US prices but also with European export prices. In the case of tool steels, for instance, US prices increased by about 5% early in 1972, but Japanese prices were cut drastically because of lower prices being charged by some European suppliers.



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21. Japanese steelmakers still have a clear competitive edge over US and other major steel producers. Taking the December 1971 currency change into account, the Japanese industry's average hourly labor costs (including all fringe benefits and semi-annual cash bonuses) rose by 24%, to \$2.50,² from the first three quarters of 1971 to the same period in 1972. This figure still contrasts sharply with the US steel industry's average hourly labor cost of about \$7.70 at the end of 1972. Because average labor input per ton of steel is about the same in both industries, Japan's unit labor cost is only about one-third that of the United States. Japan's advantage in unit labor costs over major West European producers is smaller but remains substantial.

22. Initially at least, the 1971 currency revaluation reduced the cost in yen of the Japanese steel industry's huge imports of raw materials because suppliers generally were unable to renegotiate contracts stipulated in dollars. The savings were appreciable because Japan's revaluation was the largest and because Japan imports a much larger proportion of its raw materials requirements than do other leading steel producers. Reduced costs in yen for raw materials, fuel, and other inputs enabled Japanese producers to moderate the rise in their dollar export prices without a serious profit squeeze. In fact, industry profits increased by 38% in 1972, owing to much improved domestic sales.

The Industry's Interest in Investment Abroad

23. Despite the industry's strong competitive position, Japanese steelmakers see that the world steel market is changing and that their position in it must change. In the past, Japanese producers did well because of the booming domestic economy plus relatively easy access to the US market. When sales to the United States were curbed, they successfully turned to other markets. Export opportunities, however, are more limited now that Japan has captured a large share of many foreign markets. Also, more of the developing countries are establishing their own steel industries, and in some cases they hope to develop an export capability, which would mean competing with the Japanese. Meanwhile, Japan will continue to face restrictions on shipments to the United States as well as the EC markets, for which a new restraint agreement was recently negotiated.

24. Japanese producers are reacting to this situation by increasing their investment abroad. Several companies already have entered into joint ventures with foreign steel producers. Nissan Steel Company, for example, has built a stainless steel plant near Gibraltar jointly with Exdisa, Spain's leading producer. Nippon Kokan and C. Itoh currently are trying to

². Based on the exchange rate of 308 yen to US \$1; at the current rate for the floating yen, hourly costs equal about \$2.90.

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negotiate a joint venture with a Greek company to build a \$200-million integrated steel plant in Greece. Japanese companies have already entered or are negotiating joint ventures to build steel plants in Mexico, Brazil, Indonesia, Malaysia, and Thailand. In other instances the Japanese are supporting projects in which they will not have equity. Nippon Steel, for example, is providing financing and technical assistance for the Pohang complex, which is supposed to make South Korea self-sufficient in steel later in the 1970s. Under the arrangement, the South Koreans are buying large amounts of machinery and equipment from Nippon Steel, for which Japan has provided a \$164-million credit.



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Outlook

26. Tokyo's latest currency realignment will not seriously erode the steel industry's strong international competitive position. Because of its relatively low wage rates, the industry still has a large cost advantage over US producers. Moreover, its advantage over West German and Benelux producers, the main EC exporters, will not decline much, because these countries' currencies will be devalued only slightly relative to the yen. In the matter of the domestic cost of imported materials, Japan again will make out relatively better than the West European countries. Japanese steelmakers recognize their strong position and recently projected that, even with a substantial yen revaluation, steel export volume during the year ending in March 1974 would increase significantly. Export value will be up by a wide margin, as the companies pass forward part of the currency change. Only nominal price increases can be expected on shipments to the US market, however, since Japanese quotations generally are now only slightly below US producer prices.

27. Prospects for a substantial increase in Japan's steel exports through the mid-1970s are good in spite of continuing restrictions on sales

to the US and EC markets. As in recent years, the main growth probably will take place in Asian markets, where Japan has special advantages over US and European producers because of its location. A huge market still exists in this area despite expansion of domestic production facilities, and Japanese suppliers are aiming for sales of 10 million to 12 million tons annually by the mid-1970s. Japan also will certainly maintain, and may even increase, its share of imports by other less developed countries, where steel consumption will grow faster than the expected worldwide rate of 6% to 8% a year. Although Japan is likely to stay fairly close to the restricted limits, exports to the United States probably will increase by more than 5% and those to the EC by at least 25% by 1975. Total Japanese exports, in terms of crude steel equivalent, accordingly are likely to reach 35 million to 40 million tons by 1975, compared with 29 million tons in 1972.

28. With the domestic economy accelerating rapidly, Japanese steel consumption is expected to continue growing at a fast pace. As in the past, steel consumption probably will considerably outpace the growth of real gross national product, which probably will increase at least 10% annually during the next three years. As a result, steel consumption should reach at least 100 million tons of crude steel equivalent in 1975. This domestic demand plus the expected exports points to a 1975 output requirement of about 140 million tons, which can easily be met by plant expansion programs already on the books. Although such an output would fall somewhat below earlier projections, it probably would approximate the US and Soviet levels and might make Japan the world's leading producer.