ANNUAL SURVEY CONCERNING COMPETITIVE CONDITIONS IN THE STEEL INDUSTRY AND INDUSTRY EFFORTS TO ADJUST AND MODERNIZE

Report to the President on Investigation No. 332–209 Under Section 332 of the Tariff Act of 1930

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UNITED STATES INTERNATIONAL TRADE COMMISSION

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Address all communications to Kenneth R. Mason, Secretary to the Commission United States International Trade Commission Washington, DC 20436 <u>Note</u>.--The whole of the Commission's report to the President may not be made public since it contains certain information that has been classified by the United States Trade Representative or would result in the disclosure of the operations of individual concerns. This published report is the same as the report to the President, except that the above-mentioned information has been omitted (as indicated by asterisks) or combined with data from related product categories to ensure confidentiality.

PREFACE

On March 8, 1985, the United States International Trade Commission instituted investigation No. 332-209, Annual Surveys Concerning Competitive Conditions in the Steel Industry and Industry Efforts to Adjust and Modernize. The investigation, conducted under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), is in response to a request from the United States Trade Representative, at the direction of the President (app. A).

This report is the fourth in a 5-year annual series that reports on competitive conditions in the steel industry and industry efforts to adjust and modernize. The survey compares the period July 1, 1987-June 30, 1988, with the 12-month period ending June 30, 1987. The data in the report cover U.S. producers' capacity, production, and shipments, as well as certain financial and employment information for 22 carbon and specialty steel products. Also presented in the report are data on U.S. producers' and importers' prices, as well as data on unfilled orders and inventories of the subject products.

In addition to the reported data, the report provides certain information for the 12-month period ending September 30, 1988 on: (1) the extent to which the major companies of the industry have committed, or will have committed, their net cash flow from steel product operations for purposes of reinvestment in, and modernization of, the steel industry; (2) actions taken by the major companies to maintain international competitiveness, and (3) the extent to which each of the major companies has committed, or will have committed, not less than one percent of net cash flow to the retraining of workers. Information on world steel pricing, labor issues, and financial developments is also provided. Notice of the investigation was given by posting copies of the notice of investigation at the Office of the Secretary, U.S. International Trade Commission, and by publication of the notice in the <u>Federal Register</u> of March 20, 1985 (app. B).

The Commission collected data and information from questionnaires sent to raw steel producers and selected importers of the carbon and alloy steel products subject to the investigation. Producers accounting for approximately 94 percent of U.S. raw steel production during July 1, 1987-June 30, 1988, and importers accounting for approximately 40 percent of imports of the subject products submitted data to the Commission. The producers which responded to the Commission's questionnaire are, with few exceptions, the same companies which responded to the previous survey; data are therefore generally comparable. Tables from the third survey which contain revised data appear in Appendix H.

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EXECUTIVE SUMMARY

Industry Conditions

During July 1, 1987-June 30, 1988 (as compared to the previous 12-month period: $\underline{1}/$

- o <u>Shipments</u> of the carbon steel products subject to the Commission's investigation increased by 18 percent, while shipments of specialty steel products increased by 24 percent. The <u>unit values</u> of these shipments increased by 8 and 16 percent, respectively.
- <u>Net Profits</u> as a percent of sales were 7 percent in the carbon steel sector, reversing the losses of 7 percent last period. Profits as a percent of sales in the specialty steel sector increased from 9 percent to 12 percent.
- <u>Debt ratings</u> for the industry generally increased, after several years of declines. On average bond ratings for the companies were still, however, B1/B2, indicating some level of speculative risk. No companies filed for bankruptcy during the period, a marked change from the previous three periods.
- <u>Prices</u> for virtually all domestically produced carbon and alloy steel products increased during the current reporting period. Survey data revealed increases ranging from 5 to 31 percent for carbon and certain alloy steel products, with the largest increases coming in reinforcing bar (21 percent) and structurals (31 percent). Changes in import prices generally followed similar trends, although increases were to a lesser degree. Import prices actually declined for two products, plates (9 percent) and hot finished bars (11 percent). In the specialty steel area, survey results indicated even greater increases, ranging from 11 to 69 percent, with import price increases ranging from 13 to 56 percent. These increases were driven primarily by escalating raw material costs.
- o Employment in the industry, after declining for three consecutive years, increased by 8.1 percent, with the largest relative increases occurring in pipe and tube (49 percent) and blast furnaces operations (19 percent). Labor productivity in the industry increased by 15 percent as the ratio of man-hours per ton shipped in the carbon steel sector (adjusted for changes in inventories) fell from 4.8 to 4.2. Employee ownership of companies in the steel industry increased during the period, as two more companies instituted Employee Stock Ownership Plans. In both cases bargaining unit employees now hold majority ownership in their companies.

1/ A broader perspective, which compares current period information with base year data (i.e., July 1, 1984 - June 30, 1985), is provided in the "Industry Conditions" section of the report (see pages 1-3).

<u>Adjustment</u> in the industry slowed during the current reporting period, as raw steel capacity declined less than 1 percent in the carbon steel sector. Combined with the capacity reductions of recent years and strong markets for steel throughout the period, <u>capacity utilization</u> levels were the highest reported since the base year of the report (July 1, 1984 - June 30, 1985). Adjustment has included capacity increases continuous casting facilities (up 3 percent). <u>Capital expenditures</u> for the industry as a whole increased almost 25 percent, to over \$1.5 billion for the year.

Issues

<u>World prices</u>

Exchange rate changes among major steel-producing countries were reflected in wide variations in world steel prices in 1987. For example, the price of cold-rolled sheet in major producing countries varied from a low of \$408 per ton in Korea to \$670 per ton in Japan. In the U.S. market, the combined effects of the steel VRA's and a weaker dollar resulted in a narrowing of the difference between domestic and import prices. In January 1987, 20 percent of surveyed steel service centers in the United States reported that foreign mill steel prices for carbon steel products were 6 to 10 percent below U.S. delivered prices. During June 1988, however, 92 percent of the service centers reported that foreign mill carbon steel prices were equal to or no more than 5 percent below U.S. prices.

Minimills

- Examination of conditions in the minimill segment of the industry revealed that minimills accounted for 17 percent of total raw steel 1/ capacity in 1987/88 and 46 percent of steel produced in electric furnaces. Both the minimill segment and the industry as a whole operated at about 85 percent of steel-making capacity during 1987/88. While both segments were profitable during the period, the minimills experienced greater return on sales (7.0 percent) than the overall industry (6.7 percent).
- o In general, the minimill sector has fared better than the integrated mills in recent years, reflecting their favorable cost structures, high productivity, and modern technology. Despite their relatively strong competitive position, the minimills have not been particularly active in international markets. Relatively low exports reflect the minimill products' low value and competition from third-world countries whose output consists principally of similar low value products; high transportation costs relative to product value; and the minimill's general lack of experience regarding export transactions.

1/ Raw steel is steel in its first solid state after melting suitable for further processing or sale.

Semifinished steel

- Changes are occurring in the market for semifinished products, as industry restructuring generates new sources of demand and supply. Recent market imbalances are largely due to increasing demand (with both structural and transitory elements), limited domestic supply, and restraints on imported materials.
- Imports of semifinished steel from countries which have signed Voluntary Restraint Agreements (VRA's) increased 425 percent from 1983 to 1987 when they accounted for 77 percent of total semifinished imports. In both 1987 and 1988, numerous companies filed short supply requests for semifinished material. In both of these years, the Department of Commerce has permitted imports in excess of VRA limits.

Adjustment of major companies

Following is information relating to the cash flow, and cash flow commitments (including commitments for the retraining of workers) of the major steel companies for the 12-month period ending September 30, 1988. 3/

- o During the period October 1, 1987-June 30, 1988, major companies' cash flow totaled \$1.1 billion (\$466.2 million excluding prior period activities and net increases in debt and liabilities), while net steel-related expenditures equaled \$1.6 billion. Projections provided by companies for the remaining July 1-September 30, 1988 period indicate that the difference between cash flow and expenditures will widen. In addition to current period expenditures, companies indicated a substantial level of postperiod spending commitments.
- Almost all companies with positive earnings reported retraining expenditures in excess of 1 percent of net cash flow during October, 1987-June 30, 1988, a relationship which is projected to be maintained through September 30, 1988. The sole exception was ***, which is in a hiring position.

³/ Under section 806 of the Trade and Tariff Act of 1984 (P.L. 98-573), the President is required to make an annual determination to the Committee on Ways and Means of the House of Representatives and the Committee on Finance of the Senate as to whether the major companies of the steel industry have, taken as a whole, committed substantially all of their net cash flow from steel product operations for purposes of reinvestment in, and modernization of, the industry through investment in modern plant and equipment, research and development, and other appropriate projects, such as working capital for steel operations and programs for the retraining of workers. A determination must also be made as to whether each of the major companies committed not less than 1 percent of net cash flow to the retraining of workers.

CONDITIONS AND ADJUSTMENT IN THE STEEL INDUSTRY

Industry Conditions

<u>Highlights</u>

Following are tabulations which provide statistical highlights of the carbon steel industry (i.e., producers of carbon and certain alloy steel products), and certain segments of the specialty steel industry (i.e., producers of certain stainless and alloy steel products). 1/2/ The tabulations are based on information supplied by producers in response to Commission questionnaires and reflect data for the 12-month periods ending June 30, 1985 (1984/85), June 30, 1986 (1985/86), June 30, 1987 (1986/87), and June 30, 1988 (1987/88).

1/ See app. C for a description of the products subject to the investigation.

2/ On July 16, 1987, the President announced his decision to extend import relief to the specialty steel industry from July 20, 1987, through September 30, 1989. Modifications made to the relief as the result of the negotiation of voluntary restraint agreements are to remain in force. See Appendix M for details on the provisions of the current import relief. For a fuller discussion of the specialty steel industry's efforts to adjust and modernize, see the Commission's <u>Annual Survey on Certain Stainless Steel</u> and <u>Alloy Tool Steel</u> (Inv. 332-167, USITC Publication 2066, March 1988).

	Carbon an	<u>d certain</u>			Percentage change,	Average annual rate of change, 1987/88 from
Item	1984/85	1985/86	1986/87	1987/88	1986/87 2/	1984/85 3/
Raw steel:						
Productionthousand tons	79.967	83.176	73,560	91.534	24.4	4.6
Capacity	126.548	122.540	110.488	108.679	-1.6	-4.9
Capacity utilizationpercent	63	68	67	84	4/	4/
Shipments 5/thousand tons	61.244	65.171	61.771	72.844	17.9	6.0
Production and related workers:	•	•		•		
Average number	175	162	137	148	8.0	-5.4
Manhoursmillions	352	339	286	308	7.7	-4.4
Wagesmillions	\$5,241	\$5,275	\$4,421.	\$4,778	8.1	-3.0
Financial:		•			· · · ·	
Net salesmillions	\$27,542	***	\$25,803	34,979	35.6	8.3
Pre-tax profit or (loss)do	(\$1,027)	***	(\$1,748)	2,324	4/	4/
Return on salespercent	-3.7	-4.1	-6.8	6.6	4/	4/
Capital expendituresmillions Research and development	\$2,398	\$1,822	\$1,173	\$1,468	25.1	-15.1
expendituresdo	\$114	\$96	\$81	\$113	39.5	-0.3

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1/ Certain alloy steel refers to alloy steel other than stainless or alloy tool steel.

2/ Calculated from unrounded data.

3/ Compound annual growth rate, 1984/85 to 1987/88.

4/ Percent change not calculated.

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5/ Shipment figures are not directly comparable to raw steel production data, since a significant quantity of scrap is generated in processing raw steel into finished products. Moreover, shipment figures do not include certain cast products. .

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	<u>Certain</u> alloy too	stainless and ol steel 1/				Percentage change, 1987/88 from	Average rate of 1987/88	annual change, from
Item	1984/85	1985/86	1986/87	1987/88		1986/87 2/	1984/85	3/
Deve alternation					•	14 - 14 - 14 - 14 - 14 - 14 - 14 - 14 -	-	
Kaw steel:				1 100				
Productionthousand tons	1,567	1,448	1,606	1,723		1.3	.3.2	• "
Capacitydo	2,401	2,227	2,286	2,300		0.6	-1.4	· ·
Capacity utilizationpercent	65	65	70	. 75	-	. <u>4</u> / .	<u>4</u> /	
Shipments 5/thousand tons	1,076	1,033	1,155	1,430	•	23.8	9.9	••• .
Production and related workers:								
Average number1,000	13.2	12.8	11.5	12.2		5.5	-2.6	
Manhoursmillions	26	25	23	26		13.0	0.0	
Wagesmillions	\$418	\$378	\$376	\$437		16.2	1.5	
Financial:								
Net salesmillions	\$2,084	***	\$2,045	\$2,882		40.9	11.4	
Pre-tax profit or (loss)do	\$83	***	\$182	\$356		95.6	62.5	
Return on salespercent	4.0	2.7	8.9	12.4		4/	4/	
Capital expendituresmillions	\$132	\$80	\$57	\$67		18.5	-20.2	
Research and development			:				•	
expendituresdo	\$18	\$17	\$15	\$15		3.9	-5.9	.:

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 $\underline{1}$ / Certain stainless and alloy tool steel refers to semifinished stainless and alloy tool steel products, stainless steel plates, stainless steel sheets and strip, stainless steel wire, and stainless steel pipes and tubes. $\underline{2}$ / Calculated from unrounded data.

3/ Compound annual growth rate, 1984/85 to 1987/88.

4/ Percent change not calculated.

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5/ Shipment figures are not directly comparable to raw steel production data, since a significant quantity of scrap is generated in processing raw steel into finished products. Moreover, shipment figures do not include certain cast products, and, in the case of specialty steel, shipment figures exclude bars, rods, and most alloy tool steel products.

U.S. producers' capacity, production and capacity utilization 1/

Carbon and certain alloy steel.--After decreasing in 1986/87, U.S. production of carbon and alloy raw steel increased during the 1987/88 time period to its highest level in the past four years. U.S. production totaled 91.5 million tons during 1987/88 (app. D, table D-1), posting an increase of 24.4 percent from the level of 73.6 million tons produced during 1986/87. Capacity declined 1.6 percent during 1987/88, which when combined with increased production yielded a capacity utilization rate of 84 percent, compared with 67 percent in 1986/87 (table 1). Capacity declines occurred in cokemaking, ironmaking, and steelmaking facilities, with the greatest relative decline occuring in ironmaking facilities (down 9.2 percent). All product categories experienced production and capacity utilization increases.

Certain stainless and alloy tool steel.--U.S. stainless and alloy tool raw steel production increased 7.3 percent from about 1.6 million tons in 1986/87 to approximately 1.7 million tons in 1987/88 (app. D, table D-1). Capacity remained roughly the same at 2.3 million tons in 1987/88, leaving capacity 4.2 percent lower than it was during the 1984/85 period (table 1). As capacity remained unchanged while production increased, capacity utilization in the production of stainless and alloy tool steel grew 7.1 percent from 70 percent in 1986/87 to 75 percent in 1987/88. Capacity utilization grew in all product lines except stainless steel plates and alloy tool steel.

1/ Detailed data on U.S. producers' capacity, production, and capacity utilization during July 1, 1987-June 30, 1988 are presented in app. D.

Table 1Certain carbon and alloy steel: Unan capacity and production, and capacity utilization	ges in U.S. p tion, by sele	roducers rep cted operatio	orted N\$,	. <i>•</i>
July 1, 1986 - June 30, 1987 (1986/87) and Ju	ly 1, 1987 -	June 30, 1988	(1987/88)	
	•		· · ·	·
•••••••••••••••••••••••••••••••••••••••		* * * * * * * * * * * * * *	· · · Canacity	utilization
Itoa	Channe in	• • Chanom in	· capacity	
	ranarity	<pre>+ onenge in + oroduction</pre>	• 1986/97	1987/88
	cupacity .	i production	1 1700/07- 1	1
		n ar	rant	·····
Certain carbon and allow steel: 1/	1	1	4	
Cokemaking familities	-R.A	• 24.R	1 63	95
Tronmaking facilities	-9.2	2 21.2	: 59	1 78
Stepleaking facilities	-1.6	: 24.4	1 67	84
Continuous castino	2.5	: 17.6	1 76	. 87
Products		:	· · · ·	•
Sheets and strip 2/	-1.9	. 21.0	. 65	. 80
Plates.	3.4	1 75.1	: 35	. 59
Bars 2/	14.6	20.4	: 69	
Structural shapes and units	-5.8	19.7	: 63	. 80
Pipes and tubes 2/	-1.8	123.5	: 24	1 55
Rails and related products	-25.4	2 3.6	:	1 . 4/
Wire rod, wire, and wire products 3/	14.7	20.9	1 73	: 76
······································		1	• • • •	1 4.3
		2		1
Stainless and alloy tool steel:	1	:	1	
Steelsaking facilities	0.6	7.3	: 70	1 75
Continuous castino	10.0	19.1	1 83	1 89
Products		1	1	1911 - 71 1
Plates	31.7	26.3	1 73	1 70
Sheets and strip	-7.4	23.3	72	: 95
Wire	-3.4	-0.1	80	1 82
Pipes and tubes	-6.9	41.7	: 44	1 66

1/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

2/ Neighted average of subcategory products.

200.00

3/ Weighted average of wire rod, wire, and wire products.

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Source: Compiled from data submitted in response to questionnaires of the U.S. International

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U.S. producers' shipments 1/

<u>Carbon and certain alloy steel.</u>--After decreasing in 1986/87, U.S. producers' shipments of carbon and certain alloy steel increased by 17.9 percent from 61.8 million tons during 1986/87 to 72.8 million tons in 1987/88, about 18.9 percent above shipments of 61.2 million tons during 1984/85 (table 2). The unit value of these shipments increased by 7.5 percent during the period, from \$414 per ton during 1986/87 to \$445 per ton during 1987/88. By weight, shipments of all products in this category increased, the largest relative increase being 103 percent in shipments of pipes and tubes.

Certain stainless and alloy tool steel.--After increasing during 1986/87, U.S. producers' shipments of certain stainless and alloy tool steel again increased, by 23.9 percent, from 1.2 million tons during 1986/87 to 1.4 million tons in 1987/88, marking a 32.9 percent increase from the level of shipments in 1984/85. The unit value of such shipments registered an increase of 15.7 percent, growing from \$1,782 per ton during 1986/87 to \$2,062 per ton during 1987/88. By weight, shipments of all stainless steel products grew from 1986/87 to 1987/88, with shipments of pipes and tubes growing by 46.3 percent. Unit values increased for all stainless steel products except pipes and tubes, where the unit value decreased 6.9 percent from 1986/87 to 1987/88.

 $[\]frac{1}{1}$ Detailed data on U.S. producers' shipments during July 1, 1987-June 30, 1988 are presented in app. D.

Table 2.--Certain carbon and alloy steel: U.S. producers' shipments of selected products, and the unit value of those shipments, July 1, 1986 - June 30, 1987 (1986/87) and July 1, 1987 - June 30, 1988 (1987/88)

			•	· .	•	
······································	*******	Shipments		-Unit	value of st	ipments -
Iten	: 1986/87	: 1987/88	Change :	1986/87	. 1987/88 :	. Change
	• • • • • • • • • • • • • •	1			• • • • • • • • • • • • • • • • • • •	
	1.000 s	hort tans	: (percent):	Der	ton	(oercent)
Carbon and certain alloy stepl: 1/		1	· · · · · · · · · · · · · · · · · · ·			
Somilinichod	1 990	2 899	457.	\$275		52
Shoete and stein	. 74 175	1 39 554	. 05.	447	4R0	עד <u>ד</u> ו
Distant	· 30,133	· · · · · · · · · · · · · · · · · · ·	• 7.J. • 77.1.	405		
FidleS	i 4,/10	- 10 70K		. 4VJ. 784	i 40Ji . 7// .	i 14+0 50
	= 11 ₄ 4//	i 12,37J : . E 17E	i 7.7 i	540	i Jodi	. J.7
Structural snapes and units	• • • • • •	: 0,100	: 24.3 :	248	: 20 J/6*1	i, s.v.
Pipes and tubes	: 1,560	: 3,1/1	: 103.3 :	648	: /13 :	10.1
Rails and related products	: 480	: 557	: 16.0 :	476	: 502 :	5.5
Wire rod, wire, and wire products	: 3,4B1	: 4,318	: 24.0 :	369	: 377 :	2.2
Total	61,771	: 72,844	17.9 :	414	445 :	7.5
			. ; ;			1
Stainless and allow tool steel:	-	1 .1				
Semifinished	129	: 166	- 28.4 :	1,920		6.2
Stainlass stapl:				• • • •	• • • • • • •	
	• • 197	• • `??4	. 100.	1 770		
Chante and strin	. 107	. 000		1 105		
SHEELS AND STRIP		: 708	i 24.3 i	1,000	i, i,704 i 7 577	1/./
W172	27	1 32	1 - 9,91	. 3,014	: 3,5// :	18.7
Pipes and tubes	: 14	: 20	: 46.3 :	4,172	: 3,886 :	-6.9
Total	: 1,154	: 1,430	23.9 :	1,782	2,062	15.7
Grand total	: 62,925	: 74,273	: 18.0 :	439	: 476	8.4
•••••			••••••	•••••		
1/ Certain alloy refers to alloy steel	other than	stainless	and alloy to	ol steel.		
		•				
Courses Consiled from data subsidiated i	· · · · · · · · · · · · · · · · · · ·	h		5 - 2512 No. 81 (8 - 82)		
Source: compileo from data submitten i	in response	to question	nnaires of t	ne u.s. In	cernacional	ITade Lommis
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<u>U.S. producers' and U.S. importers' unfilled orders and inventories and U.S. importers' imports 1/</u>

<u>Carbon and certain alloy steel.</u>--U.S. producers' unfilled orders as of June 30, 1988 totaled 11.0 million tons and inventories, 6.9 million tons, with a ratio of inventories to unfilled orders of 0.63 (app. D, table D-2 and table 3). This ratio increased 3.1 percent from the 0.61 ratio posted on June 30, 1987. Large decreases in the ratio of inventories to unfilled orders occurred in bars (down 36.4 percent), structural shapes and units (down 44.3 percent), and rails and related products (down 62.5 percent). Increases in the ratio were posted in sheets and strip, plates, pipe and tube, and wire rod, wire, and wire products, with the largest increase being that of 37.8 percent for plates.

The U.S. importers who responded to the Commission's questionnaire reported imports of carbon and certain alloy steel products of 8.2 million tons (\$3.8 billion) during 1987/88.2/ Unfilled orders from importers were 1.1 million tons as of June 30, 1988, which compared with inventories of 410,000 tons. The ratio of inventories to unfilled orders rose form 0.29 as of June 30, 1987 to 0.37, as decreases in unfilled orders outpaced those in inventories.

Certain stainless and alloy tool steel.--U.S. producers' unfilled orders (principally sheets and strip) were 283,000 tons, compared with inventories of 165,000 tons (app. D, table D-2). The ratio of inventories to unfilled orders was 0.58, a figure 34.6 percent lower than the ratio 0.89 posted as of June 30, 1987 as inventories decreased while unfilled

1/ Detailed data on U.S. producers' and U.S. importers' unfilled orders and inventories as of June 30, 1987 and U.S. importers' imports during July 1, 1987-June 30, 1988 are presented in app. D. 2/ The 8.2 million tons represented approximately 40 percent of total U.S. imports (i.e., imports from surveyed and unsurveyed companies). See appendix D, table D-3.

: U.S. Producers : U.S. Importers : June 30, : June 30, : Change : June 30, : June 30, : Change Item : 1987 : 1988 : : 1987 : 1988 : : ł : (percent): : (percent) 1 : : Carbon and certain alloy steel: 1/ ... : 1 : : - ; 0.21 : 1.83 : 751.7 Semifinished.....t 1 0.62 : 0.75 : 21.5 : 0.22 : Sheets and strip..... 0.43 : 94.5 Plates..... 0.20 : 0.28 : 37.8 : 0.20 : 0.48 : 145.7 0.77 : 0.49 : -36.4 : 0.55 : Bars...... 0.74 : 33.1 Structural shapes and units..... 0.82 : 0.46 : -44.3 : 0.14 : 0.11 : -25.8 Pipe and tube....: 0.88 : 0.98 : 11.8 : 0.79 : 0.38 : -52.1 0.72 : Rails and related products.....: 0.27 : -62.5 : 0.03 : 0.00 : -90.2 0.70 : Wire rod, wire, and wire products....t 0.63 : 11.2 : 0.24 : 0.25 : 1.9 • 2 1 : : : 0.29 : Total 0.61 : 0.63 : 3.1 : 0.37 : 29.7 ---------!-........ i....i _____ Certain stainless and alloy tool steel: : ; . : . : Semifinished....: : : : : : Stainless steel: : : 1 : : 1 -71.7 : -57.5 Plates..... 1.62 1 0.46 : 0.37 : 0.16 : Sheets and strip..... 0.87 : 0.64 : -25.9 : 0.98 : 0.47 : -52.2 Wire..... 1.49 : 0.41 : -72.2 : 0.22 : 0.25 : 15.7 -47.2 : Pipes and tube..... 2.24 : 1.18 : 1.25 : 1.03 : -17.1 : 1 1 1 1 Total...... 0.89 : 0.58 : -34.6 : 1.15 : 0.65 : -43.6 0.63 : 2.9 : 0.30 : Grand total..... 0.61 : 0.38 : 28.1 1/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

Table 3.--Certain carbon and alloy steel: U.S. producers' and U.S. importers' ratios of inventories to unfilled orders as of June 30, 1987 and June 30, 1988

Source: Compiled from data submitted in response to guestionnaires of the U.S. International Trade Commission.

orders increased. The sharpest decrease occurred in the ratio for stainless steel wire which changed by 72.2 percent from 1.49 as of June 30, 1987 to 0.41 as of June 30, 1988.

The U.S. importers who responded to the Commission's questionnaire reported 73,000 tons of imports of the subject stainless and alloy tool steel products (\$783 million) during 1987/88. $\underline{1}$ / Unfilled orders were 49,000 tons as of June 30, 1988, which compares with inventories of 31,000 tons (app. D, table D-2). The ratio of inventories to unfilled orders of 0.65 was 43.6 percent lower than the ratio of 1.15 as of June 30, 1987. The ratio dropped for all products except wire.

Labor Conditions

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The review of labor conditions in the steel industry contains basic information about employment levels, labor costs, wage rates, and productivity in the United States, as well as comparisons with foreign steel producers in certain of these areas. In addition to the information collected through the Commission's surveys, other data sources have been used to help place recent developments in a broader perspective. Much of the information which is presented on labor issues is based on discussions with union and industry executives.

Survey results

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Responses to the Commission's survey indicate that employment of production and related workers, after declining for three consecutive years, increased by 8 percent to 160,518 workers during 1987/88 from

^{1/} The 73,000 tons of imports represented approximately 30 percent of total U.S. imports (i.e., imports from surveyed and nonsurveyed companies) during the period.

148,468 during 1986/87, but remained 15 percent below the employment level of 188,000 during 1984/85 (table 4 and app. D, table D-4). The greatest relative increases took place in carbon pipe and tube and ironmaking operations, which rose by 49 and 19 percent, respectively. Employment levels in the carbon steel sheet and strip product were the highest (34 percent of total employment), followed by basic carbon steelmaking (22 percent of the total).

Productivity levels rose significantly during 1986/87. In the carbon steel sector, for example, productivity rose by about 14 percent as the man-hours required per ton of shipments (adjusted for inventory changes) fell from 4.8 in 1986/87 to 4.2 in 1987/88. The greatest relative gains on a product-by-product basis occurred in the carbon steel plate, and pipe and tube product areas, where productivity increased by 48 percent and 68 percent, respectively.

Average wage levels in the steel industry increased by 0.7 percent to \$15.62 per hour. Average increases in carbon steel wages, however, were only one-third of the average increases in specialty steel wages.

Employment trends in the United States

Through 1987 steel industry employment continued its decline, falling from 175,000 in 1986 to 163,338 in 1987, (or by 7 percent) (figure 1). 1/By 1988 the declining trend was reversed, at least temporarily, as the number of workers rose to 169,562 in April, which represents a 4 percent increase over that reported for 1987. The increase largely reflects the effects of increased steel production, which was up 24 percent in the first four months of 1988 over the January-April 1987 level. Average hours

1/ As reported by 64 steel companies to the American Iron and Steel Institute, representing 87 percent of U.S. raw steel production.

Table 4.--Certain carbon and alloy steel: U.S. producers' employment, productivity, and wage costs, by sector, July 1, 1986 - June 30, 1987 (1986/87) and July 1, 1987 - June 30, 1988 (1987/88)

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······································	Average	Number Em	ploy	ed i	Produ	 icti	ivity Index	1/	: Hourly	Wage Costs	• • • • • • • • • •
1						••		•••••			
Itea	1986/87	tr., 1987/8	8:	Change :	1986/87	1	1987/88 :	Change	1986/87	1987/88 :	Change
		•••••••			••••	:			••••••		
Carbon and certain alloy steel: 2/	·	:	:	(percent):		1	1	(percent)	1	:	(percent)
Cokemaking facilities	9,165	: 10,03	5:	9.5 :	103	:	113 :	9.7	: \$15.48 :	\$15.26 :	-1.4
Ironmaking facilities	B,051	: 9,59	1:	19.1 :	103	:	102 :	-0.8	: 15.90 :	16.09 :	1.2
Steelmaking facilities 3/	31,602	: 35,90	3:	- 13.6 :	. 94	:	101 :	7.5	: 15.81 :	15.58 :	-1.5
Products:	1	:	;	:		:	:	:	: :	:	
Sheets and strip	54,071	: 54,01	3:	-0.1:	122	:	136 :	. 11.4	: 16.11 :	16.24 :	Ú.8
Plates	3,957	: 4,52	0 :	14.2 :	150	:	222 :	48.0	: 15.19 :	15.20 :	0.1
Bars	14,569	: 15,45	7:	6.1 :	130	:	136 :	5.0	: 13.38;:	13.73 :	2.6
Structural shapes and units	4,931	: 5,17	4 :	4.9 :	153	:	174 :	13.4	: 14.12 :	14.51 :	2.7
Pipe and tube	5,408	: 8,07	8:	49.4 :	135	:	. 227 :	68.2 :	: 14.30 :	14.23 :	-0.5
Rails and related products	749	: 68	7:	-8.3 :	89	:	89	-0.5	: 13.36 :	13.10 :	-1.9
Wire rod, wire, and wire products.	4,438	: 4,89	4:	10.3 :	104	:	130 :	24.6	: 13.58 :	15.79 :	16.3
Total	136,941	: 148,35	:- 2 :	8.3 :	4/	:	4/ 1	4/	15.43 :	15.52 :	0.6
Stainless and alloy tool steel:		:	:	1		1 2	•			;	
Steelmaking facilities 3/	4.602	: 4.84	6 ±	5.3 :	122	:	113 :	-7.0	15.89 :	16.27 :	2.4
Stainless steel products:	1,002	1	:	:		:					
Plates	1,191	: 1,37	9 :	15.8 :	140	:	135 :	-3.7	: 16.80 :	16.32 :	-2.8
Sheets and strip	4,603	: 4,96	7:	< 7.9/3	105	:	116 :	10.5	: 17.71 :	18.09 :	2.1
Wire	689	: 63	8:	-7.4 :	116	:	112 :	-3.8	: 14.21 :	14.46 :	1.8
Pipes and tube	442	: 33	6:	-24.0 :	102	•	146 :	42.9	: 12.24 :	12.20 :	-0.4
Total	11,527	: 12,16	:- 6 :	: 5.5-:	4/	:- :	4/	4/	16.50 :	16.78 :	<u>)</u> 1.7
Grand total	148,468	: 160,51	==;= 8 :	8.1	4/		<u>4</u> / 1 [°]	4/ :	15.51	15.62 :	0.7
	••••••			•••••••	********	1	•••••	••••••••••••••••••••••••••••••••••••••	•••••••••	•••••	••••••

1/ Calculated on the basis of production per manhour, except for the carbon and certain alloy sheets and strip, bars, and wire product categories, which are calculated on the basis of shipments per manhour. The 1984/85 period is used as a base (i.e., 1984/85=100). 2/ Certain alloy steel refers to alloy steel other than stainless and alloy tool steel.

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3/ Including semifinished steel.

4/ Not applicable.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

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Source: American Iron and Steel Institute

worked per week have risen consistently since 1981, when it averaged 37 hours per week. By April 1988, the average had risen to 42.0 hours per week, again reflecting the effects of increased steel production.

Total employment costs per unit of production are reported to have declined in the past several years, as has the share of labor costs to total costs (figure 2). The decline in costs reflects the fact that productivity gains have exceeded increases in compensation, which peaked in 1982 at \$24.67 per hour before declining to a low (in recent years) of \$22.36 in 1984. $\underline{1}$ / By 1987 compensation had risen to \$23.96 per hour, which is essentially unchanged from the 1986 level. $\underline{2}$ /

International comparisons

The effect of the depreciation of the U.S. dollar on relative wage rates helped continue to improve the relative position of the United States with certain of its global competitors during 1987. As shown in figure 3, the gap in compensation among Japan, Canada, West Germany and the United States narrowed during 1987; the rates in those countries, however, are considerably higher than those in industrializing countries such as Korea and Brazil. With respect to productivity, U.S. performance continued to improve and was at its highest level in 1987 (figure 4). Improvement was not limited to the United States. As shown below, man-hours per short ton shipped among principal producers averaged 6-7 during 1987, as compared to 8-13 in 1981.

<u>1</u>/ Compensation per hour includes wages plus benefits. Data from table 4, reflect wages only.
<u>2</u>/ World Steel Dynamics.



Source: World Steel Dynamics

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Figure 4 U.S. carbon steel industry: indexes of output, employee hours, and output per employee hour





	Actual Operating Rate			Standard Operating Rate 1/				
	1975	1981	1987	1975	1981	1987		
· · ·								
United States	11.13	8.86	5.97	10.58	8.71	5.79		
Japan	10.13	8.46	6.73	9.41	6.41	4.99		
Germany	11.64	9.06	6.31	8.65	6.94	6.14		
United Kingdom	22.23	12.66	6.46	17.29	8.90	5.66		
France	15.79	9.62	6.93	14.44	8.77	6.33		

Major mills' man-hours per short tons shipped

1/ Assumes an operating rate of 90 percent.

Source: World Steel Dynamics, Steel Strategist, No. 14, Table 5.

Labor Issues

The major issues that were significant during the 1986-87 labor negotiations between the United Steelworkers of America (USWA) and the major integrated steel companies were overtime, contracting-out of work, profit-sharing and stock distribution, pension benefit issues and legislation, labor/management relationships and employee stock ownership plans. <u>1</u>/

Overtime

With respect to overtime, the Bureau of Labor Statistics reports that the use of overtime hours increased from 1.5 hours per worker per week in 1982 to 3.8 hours per worker in 1986, and increased an additional 47 percent to 5.6 hours per worker by February 1988. According to USWA and industry sources, the principal reason for the increase in overtime hours during 1987-88 was the unexpectedly high demand for steel, especially flat rolled steel. Companies indicated a preference for using overtime to meet

^{1/} A discussion of these issues is contained in last year's report <u>Annual</u> <u>Survey Concerning Competitive Conditions in the Steel Industry and Industry</u> <u>Efforts to Adjust and Modernize</u>, Report to the President on Investigation No. 332-209, p. 20-21 and p. 25-36, USITC Publication 2019, September 1987.
manning needs (rather than adding employees) for what was thought to be a temporary increase in steel demand.

Contracting-out or subcontracting

Contracting-out or subcontracting was the single most important issue in the 1986-87 labor negotiations. World Steel Dynamics estimates that in 1986 the equivalent of 12,000 full time steel workers' jobs or 8 percent of the labor force was contracted out to contractors, which performed a variety of services, including repair and maintenance work. Because of the steelworkers' concern over lost jobs to outside contractors and their desire to regain a portion of the jobs already contracted out, the 1986-87 labor negotiations between the USWA and the major companies agreed to the principle that, "work capable of being performed by bargaining unit employees shall be performed by such employees." 1/ According to the USWA, while some companies implemented the negotiating principle on contracting out effectively, others complied only after issues were resolved through arbitration.

Profit-sharing and stock distribution

Profit-sharing and stock distribution made to USWA members in 1988, with respect to hours worked in 1987 by the major steel companies, was based on their 1986-87 collective bargaining agreements. These agreements included profit sharing, gain sharing 2/ and stock ownership plans. Benefits earned from these plans were determined by corporate profit levels, productivity improvements, and certain wage, payroll, and other fringe benefit concessions agreed to in negotiations.

^{1/} Ibid, p. 33.

^{2/} Gain sharing bonuses are based upon productivity improvements measured against a base period established during the 1986/87 labor negotiations.

In 1987, profit and gain sharing for USWA members covered under collective bargaining agreements at the six largest steel companies (USS, LTV, Bethlehem, National, Inland and Armco) amounted to an estimated 16 percent (\$145 million) $\underline{1}$ / of these companies' \$897 million in earnings. $\underline{2}$ / Profit and gain-sharing cash payments varied from \$0.05 per hour worked to \$1.84 per hour.

In addition to the cash payments, workers at LTV and Bethlehem were issued shares of preferred stocks, the value of which was based on earnings ranging from \$0.06 per hour to \$1.16 per hour. Workers can receive the full value of the stocks, which earn 5 percent in annual dividends, after retirement or other separation. Alternatively, the steelworkers can convert the preferred stock at any time to common stock for trading on the open market.

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Pension benefits

The most significant event of 1987 in pension benefits was the Pension Benefit Guaranty Corporation's (PBGC) successful effort to establish a sound financial basis for its outstanding liabilities of \$4 billion. This was accomplished on December 22, 1987, when the President signed the Omnibus Budget Reconciliation Act of 1987 which contained reforms to the Employee Retirement Income Security Act of 1974 (ERISA). The legislation reduces the opportunities for employers to jeopardize retirement benefits through systematic underfunding of liabilities and introduces a variable rate premium which will both increase the revenues of

1/ USWA and the respective major steel companies.

2/ Locker Associates, Inc.

the PBGC and increase the premiums of companies with underfunded pension programs.

Other changes include a provision whereby steel companies enjoy a five-year period beginning on January 1, 1989 during which they are subject to keep less stringent pension funding standards than other companies; they must, however, reduce their pension underfundings at least one percentage point per year.

A major pension liability issue, however, still remains unresolved for the PBGC. After the January 13, 1987 assumption of LTV's pensions, the PBGC returned these plans to the company on September 22, 1987. PBGC reasoned that a newly concluded bargaining agreement between LTV and the USWA violated the Employment Retirement Income Security Act of 1974 by using pension insurance to subsidize ongoing pension plans. The case went to court and on June 22, 1988 the U.S. District Court in New York ruled that while the PBGC had the authority to return plans to companies, the agency had to give more deliberate consideration to the issues involved.

Labor/management agreements

Innovative labor/management agreements such as concluded at the L-S Electrogalvanizing Company (L-SE) at Cleveland, Ohio, owned by LTV Steel Co. and by Sumitomo Metal Industries, Ltd., 1/ continue to be negotiated. The major innovation at L-SE was that a separate labor agreement was concluded between the company and the 60 USWA employees, combining multiple job classes into only three skill levels. According to USWA, the Union and

1/ See last year's report <u>Annual Survey Concerning Competitive Conditions</u> in the Steel Industry and Industry Efforts to Adjust and <u>Modernize</u>, report to the President on Investigation No. 332-209, p. 34, USITC Publication 2019, September 1987. LTV are currently negotiating to extend the L-SE labor/management concept

to five other small LTV plants and expect to conclude the agreements by early 1989. Inland Steel Co. and the USWA have also concluded a similar agreement to that in force at L-SE. The Inland-USWA agreement covers a new cold rolled steel mill, located at New Carlisle in northern Indiana, which is currently under construction. The new mill is expected to be operating

by December 1989.

1. 11

Employee stock ownership plans (ESOP)

 $_{1}$, where $_{2}$, $_{2}$ As the steel industry has restructured, labor has become a more the second second second and second the second s active partner through its increased equity in certain steel companies. As 1. 我们就是这个问题,我们们的问题,这些我们的问题,你们就是我们就是我们的问题,我们就是我们就能能。" part or majority owners, workers have developed a far more direct interest in the successful operation of these companies. Much of the increased equity has been achieved through a variety of stock ownership plans. · [1] During 1987-88 negotiated employee stock ownership plans with two steel 网络小学学校学校 化化学学 化化学学 化化学学 化化学学 化化学学 化化学学 网络小学学 化分子子 companies. USWA members have majority ownership in both companies, McLouth Reprint and interest of the second Steel Products Corporation and Northwestern Steel and Wire. On September

1, 1987, the 1,900 USWA members and the 500 clerical, administrative and managerial employees of McLouth achieved 80 percent ownership of the company, when they ratified a new 5 year labor contract and initiated a 10 percent cut in pay for the duration of the contract. The new Board of Directors has 3 USWA members (out of a total of 11). The merger agreement between Northwestern and a management group provides for a newly established ESOP covering approximately 2,000 USWA members and other salaried employees. The merger agreement also provides for 51 percent

stock ownership by union members and 1 USWA member to sit on the Board of Directors. Consummation of the merger is subject to approval by the company's shareholders at a July 28, 1988 meeting. The remaining 49 percent of the stock will be controlled by ten senior managers together with three outside investors.

In recent years labor negotiations included profit sharing-plans which can be converted by USWA members to stock ownership in a number major steel companies: union members could eventually own up to 5 to 40 percent of the various companies. Companies having such an ESOP feature include Bethlehem Steel Corporation, LTV Steel Company, Armco, Inc., CF&I (38 percent of which is owned by USWA members), and Wheeling-Pittsburgh Steel Corporation. Both CF&I and Wheeling-Pittsburgh have 1 USWA member on their Board of Directors. In addition Weirton Steel Corporation became the country's largest ESOP company, in January 1984 when 7,900 members of the Independent Steel Workers Union purchased the West Virginia facility from National Steel Corp.

U.S. producers' capital expenditures and research and development expenditures 1/

Carbon and certain allow steel. -- Capital expenditures for carbon and certain alloy steel operations rose during 1987/88 to \$1.5 billion, representing an increase of 25 percent over the expenditure level of \$1.2 billion during 1986/87 (table 5 and app. D, table D-5). Capital expenditures remained 17 percent below the level of \$1.8 billion reached during 1985/86, and 38 percent below the \$2.4 billion spent during 1984/85. The reversal of the declining trend is attributable to increased expenditures in all product areas except steelmaking, bars, and rails and related products, which experienced decreases of 10 percent, 13 percent,

1/ Detailed data on U.S. producers' capital expenditures and research and development expenditures during July 1, 1987-June 30, 1988 are presented in app. D.

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Table 5.--Certain carbon and alloy steel: U.S. producers' capital expenditures and research and developsent expenditures, July 1, 1986 - June 30, 1987 (1986/87) and July 1, 1987 - June 30, 1988 (1987/88)

	t Capi	tal Expendit	urëş	: Resear	ch and Develo	opment
	: 1986/87	: 1987/88	: Change	: 1986/87	: 1987/88 :	Change
		• 1 • • • • • • • • • • • • •	*********	**********		
	:1,000	dollars	: (percent)	:1,000	0011ars!	(percent)
bon and certain alloy steel: 17	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		:	:		
Cokemaking facilities	.: 27,399	: 39,271	: 43.5	: 2 ₁ 8/1	: 3,432 :	19.5
Ironmaking facilities	.1 168,572	1. 299;;078	1 . 1/14	1 2,204	: 2,615 :	18.4
Steeleaking facilities 2/	.1 594,079	: 537,407	: -9.5	: 27,656	: 44,323 :	60.3
Products:	• • • • • •	1 <u>1</u>	1	•	1. · · · · · · · · · · · · · · · · · · ·	·
Sheets and strip	.: 196,285	: 349,411	: 78.0	: 33,936	: 49,096 :	44.7
Plates	.: ***	:	1 159.6	: 4,509	: 4,693 :	. 4.1
Bars	.: 113,585	: 99,416	: -12.5	: 4,380	: 4,397 :	0.4
Structural shapes and units	.: 23,225	1 48,985	1. 110.9	: +++	1 70 <u>6 1</u>	. #0#
Pipe and tube	.: 8,455	: 31,721	: 275.2	: ***	: 2,401 :	+++
Rails and related products	11 ¹ 111 1	1	1 . ***	1 +++ -	: 520 :	
Wire rod, wire, and wire products	.: 28,070	: 40,799	: 45.3	: 1,075	: 909 :	-15.4
Total	.:1,173,093	:1,468,378	: 25.2	: 81,371	: 113,092 :	39.0
	1	1	1	∎	1 1	· · ·
inless and alloy tool steel:	1	1	1	:	:	
Stepimaking facilities 2/	.1 23,107	: 23,616	: 2.2	: /,055	: 6,203 :	-12.1
Products:	1	:	1	:	: :	
Plates	.1 2,663	: 3,905	: 46.6	1 359	: 384 :	7.0
Sheets and strip	.: 24,336	: 32,071	: 31.8	: 5,128	: 7,212 :	40.6
Wire	.: ***	3 6,245	: +++	; ***	: 1,421 :	+++
Pipes and tubes	• • • • • • • • • • •	: 1,387	: ***	1	121 :	***
Total	.: 56,721	1 67,224	: 18.5	14,772	: 15,341 :	3.9
	122222333	************			1	

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and ** percent, respectively, from 1986/87 to 1987/88. Increases in capital expenditures during the period ranged from 43 percent in cokemaking to 275 percent in pipe and tube. As in past time periods, primary steelmaking (including ironmaking, cokemaking, and semifinished steelmaking facilities) accounted for the largest share (60 percent) of total capital expenditures during 1987/88. Relative to sales, capital expenditures declined from a ratio of .09 in 1984/85 to .04 in 1987/88.

Producers' research and development expenditures rose for the first time in 4 years to \$113.1 million during 1987/88, an increase of about 39 percent over expenditures of \$81.4 million during 1986/87. Research and development expenditures rose in all areas except pipe and tube, and wire rod, wire, and wire products. As in previous time periods, projects in the sheet and strip product area accounted for the largest share of research and development expenditures (43 percent during 1987/88).

Certain stainless and alloy tool steel.--Total capital expenditures for the production of certain stainless and alloy tool steel products were \$67.2 million during 1987/88, an increase of 18.5 percent over expenditures of \$56.7 million during 1986/87, but not as high as the levels reached during 1984/85 (\$132.0 million) or 1985/86 (\$80.4 million) (table 5 and app. D, table D-5). Increases occurred in spending for steelmaking and all product areas. Increases in capital expenditures during the period ranged from 2.2 percent in steelmaking facilities to 46.6 percent in plates. Relative to sales, capital expenditures declined from a ratio of .06 in 1984/85 to .03 in 1987/88, remaining level with 1986/87.

Spending for research and development rose for the first time in 4 years, to \$15.3 million during 1987/88, an increase of 3.9 percent from spending of \$14.8 million during 1986/87. Declines, which occurred in

steelmaking facilities, wire, and pipes and tubes, were the most significant for pipes and tubes (** percent) and wire (** percent). Spending increased by 41 percent and 7 percent for sheets and strip, and plates, respectively.

Financial experience of U.S. producers

During the 12-month period ending June 30, 1988, sales of steel products totaled approximately \$37.9 billion, up 36 percent from sales in the preceeding 12-month period. Net profits occurred in most product categories, as overall profit as a percent of sales rose from -5.6 percent to 7.1 percent (table 6, and appendix D, tables D-6 and D-7).

The U.S. steel industry returned to profitability for the first time since 1981 as almost all measures of operations and liquidity showed improvement over the previous years 1982-86, and compare favorably with 1981 ratios. <u>1</u>/ Positive net income provided from operations, larger positions of cash and marketable securities, reduced levels of inventory in relation to other current assets and reduced levels of total debt are indicative of stronger balance sheets. Operating ratios show improvement as companies now operate above break-even rates, employment rates in the industry in 1987 are at an historic low, steelmaking capacity has been reduced and domestic production/shipments, prices, revenue and profits have risen.

^{1/} Improvement in the ratios of net short tons of steel shipped/employee, sales/net short ton steel shipped, profit/short ton steel shipped are indicative of the improvement in operations. Quick ratios were used to measure improvement in liquidity: Current assets less inventories/current liabilities; cash and marketable securities/current liabilities; and net working capital/total assets. Base data used for calculation purposes is from the American Iron and Steel Institute, Annual Statistical Report, 1987. Information on off-balance sheet financing was not readily available and could not be factored into the above.

Table 6.--Certain carbon and alloy steel: Total net sales and net profits and losses as a percentage of sales, by selected product, July 1, 1986 -- June 30, 1987, (1986/87) and July 1, 1987 -- June 30, 1988 (1987/88)

			Percent	Net profit	or loss as a	
* 1	Total net sa	les 17	change	percent of	sales: 2/	Net change
ltem	1986/8/	198//88	in sales	1986/8/	198//88	<u>in percentage</u>
	Thousands	of dollars				
Carbon and alloy steel: <u>3</u> /					•	
Semifinished	561,619	1,176,191	109.4	(25.2)	(4.9)	20.3
Plates	1,118,232	2,286,532	104.5	(4.3)	10.8	15.1
Sheets and strip	16,242,019	20,269,706	24.8	(6.1)	8.6	14.7
Bars	3,867,251	4,728,827	22.3	(8.3)	0.6	8.9
Wire, wire rod and wire						
products	1,349,569	1,674,126	24.1	1.7	2.0	0.3
Structural shapes and			•.			
units	1,432,577	1,982,866	38.4	1.5	8.1	66
Rails and related pro-						
ducts	227,633	282,875	24.3	(10.0)	(5.4)	4.6
Pipes and tubes	1,004,322	2,577,536	156.6	(27.2)	7.5	34.7
Subtotal, carbon and						
certain alloy steel	25,803,222	34,978,659	35.6	(6.8)	6.6	13.4
Certain stainless and tool steel:						
Semifinished	213,708	294,754	37.9	(3.8)	6.6	10.4
Stainless steel:						
Plates	320,520	392,863	22.6	.6.3	8.7	2.4
Sheets and strip	1,364,038	2,000,747	46.7	12.7	14.7	2.0
Wire	. 88,675	114,025	28.6	1.4	6.3	4.9
Pipes and tubes	57,606	79,612	38.2	(8.8)	1.3	10.1
Subtotal, certain						
stainless and			7			
alloy tool steel	2,044,547	2,882,001	41.0	8.9	12.4	3.5
Grand total	27,847,769	37,860,660	36.0	(5.6)	7.1	12.7

1/ Includes intracompany and intercompany transfers, less discounts, returns, and allowances.

 $\underline{2}$ / Net profit is defined as the total net sales, less the cost of goods sold, general, selling and administrative expenses, and other expenses (such as net interest expense for income).

3/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

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In terms of plant shutdowns and bankruptcies of companies discussed in previous reports, there has also been improvement in the market of operations which have led companies to continue to operate under bankruptcy or reopen under new management. LTV, Wheeling-Pittsburgh, and Sharon Steel continue to operate as debtors in possession under Chapter 11, with lower production costs. Phoenix Steel sold its plate mill at Claymont, DE to a foreign investor/management group composed of Wai Hing (30 percent ownership in the new company), a Hong Kong based trader of steel mill equipment and steel, and CiticSteel (70 percent ownership), an investment group backed by the PRC government. 1/ The company's Phoenixville, PA tube plant was sold to the Robert Serlin group. 2/ Judson Steel, a west coast rebar manufacturer, was acquired by Birmingham Steel to re-emerge as Barbary Coast Steel. 3/ In addition, a bankruptcy court has approved the sale of Eastmet Corporation's Eastern Stainless Steel sheet-making operation, closed since January 1986, to Cyclops Industries Inc. in July 1988. 4/ Only Roblin remains closed. In another development, USX closed its facility in Utah. With restructured debt and labor accords, the Geneva mill reopened as an independent company in September 1987 under the name Geneva Steel of Utah. The change in ownership is but one of a number of examples in which restructuring by major integrated steelmakers has resulted in the re-opening or combined operation of certain facilities under new management. In other actions the United Steelworkers of America (USWA) began negotiations in February 1988 to acquire LTV's Warren Works, and Republic Drainage Products. Subject to shareholder ratification on

- 2/ American Metal Market, November 12, 1987.
- 3/ Metal Bulletin, October 29, 1987.
- 4/ The Washington Post, July 13, 1988.

<u>1</u>/ American Metal Market, May 2, 1988.

July 28, 1988, 80 percent ownership in McLouth Steel will pass to the USWA, which is to provide additional financing and possibly avert a second bankruptcy for the plant.

Cautious optimism, a marked improvement over previous years, describes current investor perceptions of the financial health of the industry. Increased trading turnover on stock exchanges as well as the demonstrated ability of companies to issue new debt or equity despite the lack of high quality ratings (steel company bonds, or other senior debt, still do not enjoy the attributes of investment quality issues, and are considered to possess speculative elements), are measures of this. With the improved financial environment steel companies are showing increased interest in recourse to the securities markets, since access would enhance the industry's ability to obtain financing for investment, capital improvement or to reduce debt. A number of steel companies registered new securities for sale. Bayou Steel Corp. registered an initial public offering with the SEC for the issuance of 4.8 million shares of common stock to redeem outstanding preferred stock, finance a new ladle furnace and pourer and possible acquisitions; price per share was to be between \$13-15, resulting in a net to the company of approximately \$60-65 million. Chaparral Steel Co. has also registered an initial public offering with the purpose of debt retirement. Bethlehem sold 12 million shares of common stock in October 1987 realizing net proceeds of \$186 million which were used to redeem approximately \$260 million in outstanding debentures, 1/ thus reducing debt and annual interest expenses. Subsequently in March 1988, Bethlehem filed a registration certificate with the SEC for the issuance of

1/ Sée, Prospectus, 8,000,000 shares Bethlehem Steel Corp., common stock, filing by Salomon Brothers, Inc., 1988; also reported as prospective sale in Metal Bulletin, October 1, 1987.

a further 8 million shares of common stock (plus 1.2 million share option to the underwriter to cover over-allotment) with proceeds being allocated primarily to fund a portion of its pension fund and social insurance liabilities. Bethlehem was also able to obtain a new eight-year revolving credit facility providing loan commitments of approximately \$400 million. 1/2/ National Steel secured a two-year revolving line of credit and letters of credit from a U.S.-Japanese consortium of banks. 3/

Factors underlying investors' cautious optimism include the following: <u>4</u>/

(1) Improved market conditions and reaction: The major consuming industries (e.g., capital goods, automobiles, and construction) have improved from the low levels of 1983. While the industry remains cyclical, producers' reactions to changed market conditions and increased demand have been different from those in the mid 1970's when producers expanded capacity; in this period, producers have emphasized modernization of facilities and improving yields. The cost advantage of foreign producers (in steel, or products using steel) has been reduced by the decline of the dollar against European, Japanese and other currencies since 1985. Price increases due to increased raw material input prices, have been successfully passed on to consumers.

(2) <u>Cost reduction</u>: Cost structures of production have improved due to the reduction of inefficient production capacity, product line restructuring, installation of new equipment (such as continuous casters), and labor-wage accords. In general the operating expense ratio is improving as a result of production

3/ Metal Bulletin, October 1, 1987.

4/ See Moody's Investors Service, Moody's Special Comment, "Basic Industries: Reaping the Rewards of Restructuring", June 8, 1988; also Proceeds from Steel Survival Strategies III Conference, New York, N.Y., June 21, 1988.

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^{1/} Prospectus, 8,000,000 sharës Bethlehem Steel Corp., common stock, filing by Salomon Brothers, Inc. 1988

^{2/} Armco and Inland both sold shares to the public during 1987. Armco sold 2.3 million shares, realizing net proceeds of \$22 million; \$175 million worth of the shares the company had previously exchanged for Reserve and Eveleth were sold to the market; the company redeemed 15.25 percent notes due 1989 by issuing \$175 million of 13.5 percent senior notes due 1994. Inland sold 2 million shares series C cumulative convertible exchangeable preferred stock for \$97 million. USX utilized cash and credit facilities to repurchase common and preferred stock outstanding. See Annual Reports for 1987 of the three companies.

efficiencies (declining breakeven points) and higher shipments. Capacity has decreased from approximately 150 million short tons per annum in 1980 to 112.3 million short tons per annum in 1987; during the period 1982-87 productivity rose 4.3 percent annually while unit labor costs declined 1.3 percent annually. Bethlehem Steel estimates that it required less than six man-hours of labor to produce one ton of raw steel in 1987 versus more than ten man-hours in 1982; USX estimated that 1982 labor costs were 10 man-hours, while in second quarter 1987 costs fell to 3.8 man-hours per ton of raw steel. Restructuring has been accompanied by a more than 50 percent decline in the hourly labor force (400,000 workers in 1980 versus 160,000 workers in 1987). Moreover the share of steel produced using continuous casters has risen from 25 percent to 60 percent of total output; finished steel yields have risen from 72 percent to 86 percent.

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(3) <u>Debt and interest cost reduction</u>: Reduced borrowings and divestitures, and off-balance-sheet financing have helped to reduce fixed costs. The industry is still, however, affected by high levels of debt and large amounts of unfunded pension and group insurance obligations.

(4) <u>Tax refunds</u>: The integrated steel producers were a beneficiary of a provision in the Tax Reform Act of 1986 that allowed them to recapture unused investment tax credits with certain limitations during a transition period. The allowance netted the major companies about \$500 million in 1987-88.

Published reports issued by the rating companies are more optimistic now than in previous years. Moody's Investors Service, as an indicator of the financial community at-large, has become cautiously optimistic on U.S. basic industries, including the U.S. steel industry, over the medium term (three to five years). Moody's has raised the senior debt rating of Inland Steel as well as that of Bethlehem Steel and is currently reviewing the ratings of senior debt of two other companies in recognition of the significant actions taken by the integrated steel producers to improve their corporate positions (see table 7).

The improved outlook for the industry is not without qualification. Debt and equity issues are described as average to below average in safety, and steel is rated lower than any other basic industry (figure 5). The financial community's optimism does not extend beyond the 3-5 year time

,	1982	1983 <u>3</u>	/_1984	1985	1986	1987	1988
.rm		4.2		Pee2	Be?		20
mco thlohom	A	R4 Raa2	Daaz Baa2	Bad Bal	Daz Rel	DZ 122	D2 Bo3 4/
land	A	Baa2	Baa2	Bee2	Bal	DZ Bal	Daj <u>4</u> / Bal 4/
	n Ra	Ball	Bal	Bal	B3	Baa	
tional	∆a.	Real	Bal	he1	83	Reil	Rel
$\frac{1}{1}$	A A	Beel	Bel	Bal	83	Caa	Caa
	A A	. 73	Baa2	Baa2	Bee2	Beal	Ra1 7/
TV <u>5</u> /,	<u>8</u> /	<u>8</u> /	<u>8</u> /	B1	B1	Caa	Caa
'Moody's ra	atings	of comp	inv sen:	ior debt	are as	follows	······
Aaa:	Best	mality a	and car	ry small	est deg	ree of r	isk.
Aa:	High o	uality a	and tog	ether wi	th Aaa,	are kno	wn as high-grade
	bonds.		•		·		
A:	Posses	s many :	[avorab]	le inves	tment a	ttribute	s and are
	consid	lered up	per-med:	ium grad	e obliga	stions.	
Baa:	Medium	n-grade	bligat:	ions whi	ch are	neither	highly protected
	nor po	orly se	cured.				••••
Ba:	Obliga	itions w	nich hav	ve specu	lative (elements	; future cannot b
	consid	lered we	ll assur	red.			•
B:	Genera	illy lack	c charac	ct <mark>eris</mark> ti	cs of de	esirable	investment.
Caa:	In poo	or stand:	ing; may	y be in	default	or may	present elements
	danger	: with re	aspect 1	to princ	ipal or	interes	st.
Ca:	Specul	lative in	n a higl	h degree	•		
· C:	Lowest	: rated	onds.	-			
' Ratings a	are of	senior (lebt, tl	nose of	subordi	nated de	bt such as
debentur	es are	not show	m. Sul	bordinat	ed deber	ntures h	ave historically
been low	er than	the rat	tings sl	hown her	e.		•
' Moody's l	began a	ssigning	numer	ical mod	ifiers (to its a	lphabetic ratings
in 1983.	la is	preferi	ble to	2, whic	h is pro	eferable	to 3.
Moody's 1	upgrade	d the ra	tings i	for Inla	nd Stee	l and Be	thlehem Steel in
July 1988	B, Armo	o, and I	JSX are	being r	eviewed	current	:1 y .
LTV Corp	(the u	mbrella	, holdin	ng compa	ny) merg	zed Jone	s and Laughlin
(J&L) 4	and Rep	ublic St	teel to	form LT	V Steel	in 1984	. While Moody's
assigns (a ratin	ng of Ca	to the	holding	company	y. a hig	her rating of Caa
is assign	ned to	the open	rating o	companie	s		(
U.S. Ste	el char	nged its	corpora	ate name	to USX	Corp on	July 9, 1986 to
reflect o	diversi	fication	n into n	non-stee	1 lines	of busi	ness.
Moody's	lowered	I the rat	ting for	r USS (U	SX) from	n Baa3 i	n June 1987.
Not appl:	Lcable		-				
Not appl: ource: Mood	lowered Lcable dy's In	i the rai	Service	r USS (U a, Inc.	SX) from	n baaj i	n June 1987.

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Table 7.--Moody's ratings of senior debt <u>1</u>/ <u>2</u>/ of selected U.S. steel producers, 1982-1988







frame for a number of reasons. Analysts point out that it remains a cyclical and mature industry where the return on capital is relatively low 1/, as well as a volatile sector vis-a-vis earnings, cash flow and liquidity. Although debt has been financed through rollover to longer maturity (at new and lower interest rates), or repurchased (with the wherewithal coming from proceeds from divestiture, retained earnings or conversion to equity), the residual amount remains high in proportion to assets.

Despite the assumption by the Pension Benefit Guaranty Corporation of pension plans for LTV and Wheeling-Pittsburgh, the levels of retiree pension, health and group insurance obligations remain high. With respect to industry structure, the changing role of minimills could further affect the position of integrated producers. There is a 3-4 year perceived breathing space before the minimills expand further into the flat-rolled sheet markets that the majors currently dominate. In terms of the market outlook, there have been net losses in domestic steel use through lower consumption and substitution, and because of indirect imports of steel in automobiles, original equipment manufactures, and consumer goods. Some of the actions taken to improve cash flow and balance sheets may be only of short term effect. Divestiture and sale of common stock are one-time sources of cash, although there are reduced expenses associated with closing unprofitable operations. Certain accounting changes, such as liquidation of LIFO valued inventories have provided only a short-term benefit to balance sheets. Tax refunds of unused investment tax credits are similarly only of short duration.

^{1/} Moody's Investors Service, Moody's Special Comment, "Basic Industries: Reaping the Rewards of Restructuring", June 8, 1988.

Carbon and certain alloy steel.---Total net sales of all carbon and certain alloy steel products subject to the investigation amounted to \$35 billion (table 6), an increase from last period's \$25.8 billion. Net profits before taxes in the sector were \$2.3 billion, compared with a loss of \$1.7 billion in the previous time period. As a result, profits as a percent of sales increased from -6.8 percent to 6.6 percent. All product areas under investigation showed improvement, except the wire group which declined by 0.2 percent. The only product areas which have not returned to profitability are semifinished and rails. The most significant improvement occurred in semifinished, and pipe and tube. The most profitable areas were the production of plates and sheet and strip, while the least were bars, and wire, wire rod and wire products.

Certain stainless and alloy tool steel.---Total net sales of certain stainless and alloy tool steel products amounted to \$2.9 billion (table 6), up 41 percent from the \$2 billon in net sales recorded in the year ending June 30, 1987. Net profits before taxes in the sector rose from \$182 million to \$356 million. Net profits as a percentage of sales rose from 8.9 percent to 12.4 percent, a net change of 3.5 percentage points (table 6). All products within the group were profitable, and all recorded improvement. The greatest improvement was shown in semifinished, which moved to profitability, as profits as a percentage of sales increased from -3.8 percent to 6.6 percent. Pipe and tube also returned to profitability as profits as a percentage of sales increased from -8.8 percent to 1.3 percent, a net change of 10.1 percent.

Steel Pricing

Exchange rate changes among major steel-producing countries were reflected in wide variations in the prices of certain steel products internationally in 1987. For example, the "spot" price of cold-rolled sheet was about \$520 per ton in the United States, \$550 per ton at the German/French border, \$670 per ton in Japan ("Big Buyer" price), 1/ \$408 per ton in Korea, and \$470 per ton on the world "spot" export market. 2/ In the U.S. market, the combined effects of the steel VRA's and a weaker dollar resulted in a narrowing of the difference between domestic and import prices. In January 1987, 20 percent of surveyed steel service centers in the United States reported that foreign mill steel prices for carbon steel products were 6 to 10 percent below U.S. delivered prices. During June 1988, however, 92 percent of the service centers reported that foreign mill carbon steel prices were equal to or no more than 5 percent below U.S. prices. 3/

<u>Steel price index trends in the United States, Japan, Canada, West</u> <u>Germany, and France.4/ 5/--Home currency steel prices in the United States,</u> Canada, and France followed generally upward trends during 1983-87 (ranging from 1 to 9 percent), whereas steel prices in West Germany and Japan fluctuated downward (about 5 and 10 percent, respectively) during the

^{1/} "Big Buyer" prices are those quoted to big contract buyers (such as the automobile industry) in Japan.

^{2/} World Steel Dynamics, Steel Strategist #14, December 10, 1987.

 $[\]underline{3}$ / These price comparisons are published in <u>Business Conditions</u> prepared by the Steel Service Center Institute.

<u>4</u>/ Price indexes do not necessarily reflect movements in transaction prices. See the Commission's 1986 <u>Annual Survey Concerning Competitive</u> <u>Conditions in the Steel Industry and Industry Efforts to Adjust and</u> <u>Modernize</u> for a fuller discussion of this point.

^{5/} Japan, Canada, West Germany, and France are major sources of U.S. steel imports.

period (figure 6). The most significant changes occurred during 1983-86, when home currency steel prices in Canada and France increased about 5 percent and 10 percent, respectively. Factoring in the effects of exchange rates reveals that steel prices in Japan and West Germany (in dollar terms) increased by almost 40 percent during 1983-87, whereas steel prices in the United States and Canada remained relatively stable (figure 7).

International pricing developments.--The most significant impact on the prices of steel products during 1987 resulted from the depreciation of the U.S. dollar relative to currencies of certain major steel-producing countries. As the dollar declined by almost 15 percent during the first three-quarters of 1987 compared to the comparable period in 1986, imported steel prices increased by about 5 percent, which dampened demand for certain imported steel products in the U.S. market. This, combined with formal limitation on imports from countries accounting for close to 70 percent of total U.S. steel imports (in 1987), resulted in U.S. steel producers gaining a larger share of the U.S. market. In the currencies of VRA countries supplying the largest volume of steel to the United States, the dollar depreciated about 13 percent against the Japanese yen during January-October 1987, 6 percent against the South Korean won, and from approximately 9 to 18 percent against currencies of the European Community (EC). 1/

Following are summaries of steel pricing developments and conditions in the United States, Japan, Canada, and the EC.

<u>United States</u>.--The decline in domestic "spot" prices of steel that was expected upon USX's reentry into the market in February 1987 failed to

1/ The EC countries accounted for approximately 35 percent of total U.S. steel imports from VRA countries in 1987.

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Source: Price Indexes of selected official government publications.

Figure 7

Steel price indexes in selected countries, adjusted for exchange rate changes vis-a-vis the dollar, 1983-87, 1983 = 100



Source: Price indexes of selected official government publications.

materialize. $\underline{1}/$ Given the sustained demand for finished steel products in the automotive and other consuming markets, "spot" prices continued their upward trends. Increasing steel prices in the U.S. market are also a reflection of other important developments, such as the weakening U.S. dollar, import restraints, and reduced domestic supply resulting from capacity cutbacks. $\underline{2}/$ As to the outlook for prices, industry sources estimate that steel prices on 1-year contract negotiations will rise \$30 to \$70 per short ton (or by 5 to 15 percent) in many products during 1988. $\underline{3}/$

Price increases are reflected in the continuing reduction in discounts offered by U.S. producers. As shown in the following tabulation, the level of discounts fell from as much as 31.2 percent in December 1985, to 9.9 percent in December 1987.

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Percentage variation between U.S. list and "spot" prices 1/2

	Period	•• •		Percent		•
	March 1981		•	-5.7		
	May 1981			-4.9		
	July 1981	· · · · ·	and the second	-3.2		
	November 1981			-8.5		
	March 1982			-10.1		
	July 1982			-16.1	an an origin	
	December 1982			-20.3	-	
	1 4 d A 1				12 generation	· .
	April 1983			-22.0		
· · · ·	July 1983	t sonzeloj i s		-29.3	What has a	
	October 1983			-29 9		
e d'àre e		. · · · · · · · · · · · · · · · · · · ·			en an en	

1/ On February 1, 1987, the United Steelworkers and officials of USX, the country's largest steel producer, approved a 4-year contract to end a 6-month work stoppage.

<u>2</u>/ For additional discussion on the effect of VRA's on the U.S. steel market and price effects see U.S. International Trade Commission, <u>U.S. Global</u> <u>Competitiveness: Steel Sheet and Strip Industry</u> (Inv. No. 332-231), <u>Appendix O, USITC Publication No. 2050, January, 1988 and Cantor, D., Steel</u> <u>Prices and Import Penetration</u>, Congressional Research Service, Library of Congress, March 15, 1988.

<u>3/ World Steel Dynamics</u>, Steel Strategist #14.

the second second

January 1984 May 1984 September 1984	en e	-24.9 -21.3 -23.0	
January 1985	:	-27.8	
April 1985 July 1985	• • • • •	-28.3 -30.2	an the second
December 1985	the second second	-31.2	
April 1986 July 1986	• •	-21.0 -21.8	· · · ·
September 1986 December 1986	.	-15.7	
May 1987 September 1987 December 1987		-9.5 -5.5 -9.9	a go dha ann an Suig An Mar Star

1/ Composite for five major products through January 1985; composite for four major products starting April 1985.

Source: <u>World Steel Dynamics</u>: "Steel Price Track 24" December 1987, www.

Following are brief summaries of recent pricing developments in selected key product groups during recent months.

Sheet products.--Strong demand for sheet products continues to push prices upward. Cold-rolled "spot" prices are reported up about \$25 per ton to \$500 per ton since January 1988, while hot-rolled sheet prices are being quoted between \$400-\$430 per ton (up \$18-\$21 per ton). Although prices are up on the West coast, a major market for sheet products, industry sources maintain that the upward trend has peaked. With imported hot-rolled sheet being quoted at \$40 per ton above domestic prices, California Steel reportedly had little problem implementing a \$20 per ton hike, effective in May. 1/ With respect to galvanized sheet, California Steel, USS-Posco, and Pinole Point Steel implemented price increases.

1/ American Metal Market, April 29, 1988.

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ranging from \$20 to \$30 per ton, which resulted in prices being quoted at \$580-\$590 per ton during the first quarter 1988. 1/

With regard to general international price comparisons, the following tabulation indicates that, as of December 1987, U.S. prices for sheet products were still generally higher than Canadian and EC prices (in their respective markets), by 4 to 37 percent, but less than Japanese prices.

> Spot price comparisons, December 1987 (U.S. dollars per net ton)

<u>Market</u>	<u>Hot-rolled</u> <u>Coil</u>	<u>Cold-rolled</u> <u>Coil</u>	<u>Galvanized</u> <u>Sheet</u>
Canada	400	478	524
EC	345	498	557
Japan:			
Dealer	557	708 [°]	936
Big Buyer	567	678	800
United States	385	498	720

Source: <u>World Steel Dynamics</u>, "Steel Price Trak #24.

Wire rod.--Wire rod prices appear to be headed upward. An increase in scrap prices resulted in Bethlehem Steel announcing a price hike of \$25 to \$30 per ton for wire rod during the first quarter of 1988, an increase of about 5 percent from the comparable 1987 period. Georgetown, North Star, Raritan, and Florida Steel announced increases of \$20 per ton, which became effective in April 1988. <u>2</u>/ The West coast market for low-carbon wire rod remains tight as the volume of imports continues to fall, largely reflecting exchange rate fluctuations and the effects of the VRA's. In this regional market, prices were up \$10-\$20 to \$350 per ton in the first quarter 1988, as consumers turned to domestic sources. In addition, Singapore and Malaysia (two of the largest

<u>1</u>/ <u>American Metal Market</u>, February 18, 1988.
<u>2</u>/ <u>American Metal Market</u>, February 19, 1988.

suppliers) restricted shipments while awaiting U.S. Government rulings on countervailing duty and anti-dumping complaints.

Plate.--Plate prices continue to increase in most regions of the United States. Bethlehem Steel announced a price hike of \$10 (effective in April 1988) to \$475 per ton, to put its price on an equal footing with USX. Lukens, Inc., the nation's third largest plate producer, is maintaining a price of \$465 per ton (\$10 below the price of its two major competitors). 1/

With regard to international price comparisons, the following tabulation indicates that by December 1987, U.S. "spot" prices for plate products were higher than "spot" plate prices (denominated in dollars) in Canada, the EC, and Japan (Dealer). Japanese "Big Buyer" prices, on the other hand, were significantly higher.

> Spot price comparisons, December 1987 (U.S. dollars per net ton)

•••	·-	Market		٠,	· · * "	<u>Plate</u>	2.
:	•	Canada				432	
		EC				381	
	· • • · ·	Japan:				•	÷
		Dealer				471	
	· .	Big Buyer-				600	
		United State	s			540	
1. A. C.	. * ¹						۰.
Source:	<u>World St</u>	<u>eel Dynamics,</u>	"Steel	Price T	rak #2	4."	

<u>Bar products</u>.--An increase in consumer and service center inventories has led industry analysts to believe the prices of bar products have peaked. However, certain steel producers, such as Chapparal and Nucor, expect to continue to operate at full capacity in the near future. $\underline{2}/$

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<u>1</u>/ <u>American Metal Market</u>, May 9, 1988.
<u>2</u>/ <u>American Metal Market</u>, April 28, 1988.

With regard to international price comparisons by December 1987, U.S. rebar "spot" prices were competitive with rebar "spot" prices in Canada and the EC, as the following tabulation indicates. Prices in Japan, however, were significantly higher.

> Spot price comparisons, December 1987 (U.S. dollars per net ton)

<u>Market</u>	<u>Rebar</u>
Canada	306
EC	317
Japan:	
Dealer	471
United States	297

Source: <u>World Steel Dynamics</u>, "Steel Price Trak #24."

<u>Oil country tubular goods</u>.--Oil country tubular goods (OCTG) prices appear to be increasing. With the oil rig count rising (as a result of improved offshore oil drilling activity) and OCTG inventories declining, U.S. tube producers are experiencing increases in demand. Effective April 1, 1988, USS increased OCTG prices by approximately 6 to 10 percent. 1/

Specialty products.--Specialty steel prices appear to be climbing for most product categories largely reflecting the increasing cost of nickel. In June 1988, J&L Specialty restructured its stainless flatrolled prices and surcharge schedule, a move that raised base prices on types 304 and 400 specialty steel by about 35 and 60 percent, respectively, and trimmed surcharges by as much as 50 percent. J&L also cut the distributor discount on stainless coiled sheet, strip, and plate between 3 percent and 19 percent, depending on the grade and product. <u>2</u>/ Baltimore Specialty Steel Corp. (a subsidiary of Armco Inc.) and Altech Specialty

1/ American Metal Market, January 1, 1988.

2/ American Metal Market, June 3, 1988.

Corp. will reportedly implement base price increases to coincide with August 1 shipments. Eastern Stainless Steel Company, however, has decided against following the lead of J&L and will continue its current pricing for stainless steel products.

The upward movement of steel prices during July 1985 through June 1988, are reflected in data collected by the Commission. An examinaion of the data reveals that U.S. producers' steel prices increased in virtually all product categories (table 8 and app. D, Table D-8). The largest price increases in the stainless steel category occurred in sheet and strip (up 46 percent) and wire (up 33 percent). In the carbon and certain alloy steel category, the largest increases occurred in structural shapes (up 36 percent) and plates (up 33 percent). With respect to importers' steel prices, significant increases were recorded in stainless steel pipes and tubes (up 198 percent) and hot-finished and reinforcing bars (up 62 percent and 37 percent, respectively). The data further reveal that in over onehalf of the product categories, importers' prices were higher than domestic prices.

Japan.--Although the "Big Buyer" steel prices in Japan have been reduced about 5 percent since 1985, at current exchange rates they are far above prices in other countries. At 93,100 yen (\$689 per ton), the "Big Buyer" composite price was about 35 percent higher than the \$510 per ton price quoted in the United States during the first quarter 1988. <u>1</u>/ In addition, Japanese "Dealer" <u>2</u>/ prices have reportedly risen sharply in recent months despite their premium levels by international standards. For example, cold-rolled sheet is being quoted at about 100,000 yen (\$740 per

^{1/} World Steel Dynamics, Steel Strategist #14.

^{2/ &}quot;Dealer" prices are "spot" prices quoted daily in Tokyo.

Table 8.- Certain carbon and alloy steel: Weighted average net prices for the three largest sales shipped by U.S. producers and importers, of selected products, by specified period 1/

			(Per	ton)			
: Weighted average net price						· · · · · · · · · · · · · · · · · · ·	
t U.S. producers t		1 7 %	ı U.S. importers t			t Ratio of U.S. producer 1 prices to importers' 1 prices	
July- September 1985	. April- 1 June 1 1988	i Percent i Change	i July- i September i 1985 i	April- June 1988	Percent Change	t July- t September t t 1983 t	April~ June 1988
<i>.</i>	!	1		•••••		!	
-	1	1	-	1	I	1 1	
347.31	: 463.20	: 33.47	1 330.43 1	402.50	21.8%	: 105.1 :	115.1
1	1	:	1 1		i ^{- 1}	:	
: 313.58	1 364.34	16.2%	1 329.67 I	404.09	22.6%	: 95.1 :	90.2
528.70	1 582.70 ⁻	10.2%	: 556.30 :	566.62	: 1.9%	s 95.0 s	102.8
1	1	1	1 1		:	1 1	
305.02	3 404.70	: 32.7%	: 278.25 :	449.89	e 61.7X	: 109.6 :	90.0
: 284.76	1 317.09	11.47	: 248.33 :	339.56	36.7%	: 114.7 :	93.4
279.06	: 317.90	: 13.9%	: 290.52 ;	332.20	: 14.3%	: 96.1 :	95.7
325.48	: 441.14	: 35.5%	: 338.32 i	432.45	: 27.9%	: 96.2 :	102.0
: 368.36	: 440.24	19.5%	433.56 1		15.2%	: 85.0 :	88.1
:	1	1	1 1	· ·	3	1 1	
: ***	857.09	1 17.0%	: 516.53 i	576.15	: 11.5%	: 141.8 :	148.8
452.86	: 480.48	1 6.17	: 595.06 :	481.90	-19.0%	1 76.1 I	99.7
1	1	1	ا ا	1	ا د.	: :	
: 2364.02	: 2115.47	1 -10.5%	: 2370.37 :	2950.00	: 24.5%	1 .99 . 7 1	71.7
1614.57	2351.01	¥, 45.6X	: 1695.32	1891.74	: 11.6%	95.2 :	124.3
1 4499.99	: 5999.94	: 33.3%	1 4/ I	4/ .	: 4/	1 4/ 1	. 47
: ***	: ***	: ***	1072.08	3197.10	: 198.2%	276.2	120.3
	July- September 1985 347.31 313.58 528.70 305.02 284.76 279.06 325.48 368.36 368.36 452.86 2364.02 1614.57 4499.99 ***	U.S. produce July- April- September : June 1985 : 1988 : 347.31 : 463.20 : 313.58 : 364.34 528.70 : 582.70 : 305.02 : 404.70 : 305.02 : 404.70 : 305.02 : 404.70 : 305.02 : 404.70 : 317.90 325.48 : 441.14 368.36 : 440.24 : : : : : : : : : : : : :	Weighted average July- April- September June 1985 1988 1985 1988 347.31 463.20 347.31 463.20 347.31 463.20 347.31 463.20 347.31 463.20 347.31 463.20 33.4% 33.4% 33.4% 33.4% 33.4% 33.4% 347.31 347.31 463.20 347.31 347.31 347.31 347.31 347.31 347.31 347.31 347.32 347.31 347.31 35.02 35.02 35.02 317.90 31.790 31.790 31.790 325.48 441.14 35.7% 368.36 440.24 <t< td=""><td>(Per Weighted average net price U.S. producers July April- : July- September : June : Percent : September : 1985 : 1988 : Change : 1985 : 1985 : 1988 : Change : 1985 : 347.31 : 463.20 : 33.4% 330.43 : 347.31 : 463.20 : 33.4% 330.43 : 313.58 : 364.34 : 16.2% 329.67 : 528.70 : 582.70 : 10.2% 556.30 : 1 : : : : : : : : : : : : : : : : : : :</td><td>(Per ton) Weighted average net price U.S. producers July- April- : July- April- September : June : Percent : September : June June 1985 : 1988 : Change : 1985 : 1988 1985 : 1988 : 16.2% 1985 : 1988 : 16.2% 1986 : 11.2% 1986 : 11.2%</td><td>(Per ton) Meighted average net price U.S. producers U.S. producers U.S. producers U.S. producers U.S. producers U.S. importers U.S. im</td><td>(Per ton) Meighted average net price U.S. producers U.S. producers U.S. producers U.S. importers U.S. importers U.S. importers U.S. importers prices to importers U.S. importers prices U.S. importers I July- April- I July- I July- April- I July- I July-</td></t<>	(Per Weighted average net price U.S. producers July April- : July- September : June : Percent : September : 1985 : 1988 : Change : 1985 : 1985 : 1988 : Change : 1985 : 347.31 : 463.20 : 33.4% 330.43 : 347.31 : 463.20 : 33.4% 330.43 : 313.58 : 364.34 : 16.2% 329.67 : 528.70 : 582.70 : 10.2% 556.30 : 1 : : : : : : : : : : : : : : : : : : :	(Per ton) Weighted average net price U.S. producers July- April- : July- April- September : June : Percent : September : June June 1985 : 1988 : Change : 1985 : 1988 1985 : 1988 : 16.2% 1985 : 1988 : 16.2% 1986 : 11.2% 1986 : 11.2%	(Per ton) Meighted average net price U.S. producers U.S. producers U.S. producers U.S. producers U.S. producers U.S. importers U.S. im	(Per ton) Meighted average net price U.S. producers U.S. producers U.S. producers U.S. importers U.S. importers U.S. importers U.S. importers prices to importers U.S. importers prices U.S. importers I July- April- I July- I July- April- I July- I July-

1/ Prices are net of all discounts and allowances (including freight allowances) and excluding U.S. inland freight. Producers' prices are

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f.o.b. mill; importers' prices are f.o.b. warehouse, or, if shipped directly to customs, c.i.f., ex-dock, port of entry, duty paid. Prices represent the total industry value of reported sales divided by the total quantity sold, based on the 3 largest sales of each firm.

2/ See Appendix E for decription of products.

3/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

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4/ No data reported.

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Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

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ton) versus 82,000 yen a year ago; steel plate is up from 55,000 yen (\$434 per ton) to 59,000 yen. 1/

<u>Canada</u>.--Driven by increased automotive production, the Canadian steel industry is anticipating strong demand for finished steel products during the fourth quarter of 1988. Currently, plate supply is tight and one Canadian mill has steel slab on order in hopes of increasing output. The current "spot" price on plate is C\$550 per ton, with a C\$15 per ton increase announced for October 4. 2/

As a result of an elimination of discounts, hot-rolled coil prices have advanced about 3 percent to C\$460 per ton, while cold-rolled coil prices made a similar increase to C\$582 per ton.

European Community.--Although demand for steel in the EC remained stable during 1987, the combination of production restraints and firming world steel export prices gave EC mills the opportunity to raise prices. The largest gain (about 100 Deutsche marks (DM) per ton) occurred in steel plate, which was also up sharply on the world "spot" export market. Flatrolled prices were up about 3 percent, while wide flange beam prices remained unchanged.

After price discussions at Eurofer, the EC companies have established increases of about 60 DM per ton for hot-rolled sheet and 40 DM per ton for cold-rolled sheet. No specific price has been announced for galvanized sheet. 3/ There is some worry that the sharp price boost in plate will not be sustained, with the key being the ability of service centers to pass on the price increases. 4/

- 1/ World Steel Dynamics, Steel Strategist #14.
- 2/ World Steel Dynamics, Steel Price Trak #23.
- 3/ World Steel Dynamics, Steel Price Trak #23.
- <u>4</u>/ Ibid.

Actions to Adjust and Modernize, Other Than Capital Expenditures

Of the 71 companies responding to the questionnaire, 29 firms provided information on actions that had been taken to adjust and modernize, other than capital expenditures and research and development expenditures. A tabulation showing the number of companies reporting various types of actions follows. $\underline{1}/$

Type of action	Number of	<u>companies</u>
	<u>1987-88</u>	<u> 1986-87</u>
Cost reduction programs	19	16
Personnel-related actions	16	15
Divestitures and closures	9	8
Training/seminars	9	3
Changes in company practices	7	19
Organizational changes	. 7	12
Expansions and acquisitions	6	8
Other	13	23

Almost 66 percent of the respondents reported taking specific <u>cost</u> <u>reduction measures</u>, the majority of which focused on operations and equipment modifications and reductions in energy costs. Although a few companies reported reductions in personnel costs due to remanning agreements, wage reductions or more effective health care costs administration, most focused on increased productivity due to incentive plans and labor/management teamwork for problem solving. New <u>personnel-</u> <u>related actions</u> reported this year by several companies included establishment of overseas sales offices to assist with exports and more aggressive, innovative recruitment practices.

1/ See app. F for a company by company analysis of the actions taken by the responding firms.

About half of the companies providing responses reported <u>changes in</u> <u>company practices</u> with the majority noting changes in the steelmaking process (to produce steel more efficiently and to improve product quality). Additional company actions included increasing customer service, shifting to outside processing of selected steel products, and shifting marketing emphasis to those products in which they have a competitive advantage in quality and delivery.

A small number of responding companies reported making <u>organizational</u> <u>changes</u>, including the reorganization of entire companies or departments and changes in ownership.

Actions taken in other areas to aid in adjustment and modernization efforts included a number of divestitures and closures of unprofitable operations. Other actions included refining, expansion or development of product lines to concentrate on items for which companies had a competitive advantage, installation of computerized inventory and ordering systems, upgrading communication systems, leasing production equipment, and modification of vendor arrangements.

Investment in Activities Other Than Steel

Following is a company-by-company report on investments that were made by U.S. producers in activities other than steel that were considered part of each firm's efforts to adjust during July 1, 1986-June 30, 1987.

(Pages 49 to 50 contain information entitled to confidential treatment and have not been published)

The Minimill Industry

Introduction

An increasingly important segment of the steel industry is the minimill industry, whose relatively profitable operations have had a positive influence on the overall steel industry's competitive status, especially as minimill producers increase their share of domestic steel output. Minimills have also been effective in improving the U.S. industry's overall competitive position against foreign suppliers. Minimill producers, like integrated producers, experienced increased import competition during the early- to mid-1980's. Imports have subsided during the past several years while producers pursued cost-cutting measures and the dollar declined. Integrated producers, in turn, face increased competition from minimills, which gained increasing shares of traditional integrated mill markets, as well as from imports. Both developments contributed to continuing efforts by the integrated producers to reduce costs and improve production efficiencies. This section presents information on the role of the minimill in the U.S. steel industry in terms of its markets, production costs, level of technology, and trade, among other topics.

Over the past 25 years, minimills have evolved from relatively small electric furnace operations producing a restricted product line to an important segment of the steel industry accounting for a significant and growing share of U.S. steel production. They have achieved this through a raw material cost advantage (abundant U.S. scrap), and improvements in other areas, including efficiencies in energy usage, labor productivity, and production technology. They have also benefitted from concentrating on specific steel markets. The growing presence of minimills in the steel industry has, to a large extent, been at the expense of integrated producers who are in the midst of significant restructuring and cost-cutting efforts to improve their competitiveness with both foreign- and U.S.-produced goods. The continued evolution of the minimill as a major force in the steel industry is likely, given its relatively high productivity levels; its production efficiencies and economies resulting from the small, relatively simple scale of operations and high levels of continuous casting; and its advances in new product technology which could broaden its market base.

Background and Industry Structure

The nature of the minimill has changed considerably since the early 1960's when the original characteristics were as follows: 1/

 Relatively small size, at 100,000 tons or less of raw steel capacity (compared with integrated operations which could have a capacity well in excess of 1 million tons);

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(2) Electric furnace steelmaking, dependent on scrap for 100 percent of raw material;

(3) Restricted product line limited to concrete reinforcing bars, merchant bars, and, in some instances, light structural shapes;

(4) Plants throughout the country, although concentrated in the south, with markets within a 200- to 300-mile radius of the mill.

The changes which have occurred in minimill operations during the past 25 years have included capacity expansion, installation of more technologically advanced production equipment, movement into product lines that were traditionally technically and economically feasible for large-

1/ William T. Hogan, S. J., <u>Minimills and Integrated Mills, A Comparison of</u> <u>Steelmaking in the United States</u>, 1987. scale integrated mills (such as flat-rolled products, pipes and tubes, and wide-flange beams), and expansion of market areas beyond a radius of 200-300 miles. As a result, minimills have undergone changes which have made it increasingly difficult to categorize companies which make up the industry. Broadly defined, minimills are steel producers which use electric furnaces and ferrous scrap to produce a somewhat limited line of steel mill products. They may range from single-company, single-plant

operations with an annual capacity of less than 100,000 tons to multiplant operations of a single company with individual capacities of 400,000 tons or more and aggregate capacities in excess of one million tons per year. 1/For the purposes of this study, minimill producers include those having only electric furnaces and producing traditional minimill products, i.e., carbon steel bars, wire rod, and some light structural shapes. 2/3/ Excluded are specialty steelmakers which produce stainless and alloy tool steel products, and certain other companies which have not

traditionally been considered minimills. 4/

There was considerable growth in the number of minimills during the 1960's and 1970's, a time when there was very little construction of integrated mills. As shown in table I-1, appendix I, there were 30 minimill producers operating 50 plants in 1987, compared with fewer than 15

1/ U. S. Department of Commerce, International Trade Administration, "Growth Patterns of the U.S. Minimill Steel Industry," September 1986.

2/ This definition excludes certain companies that have only electric furnace operations, but that produce products traditionally supplied by the integrated mills, such as flat-rolled products.

3/ Appendix I, table I-1, lists minimill producers, their plant locations, and their annual raw steel capacity, and the products they produce.

4/ Examples of these companies include Lukens Steel and Gilmore Steel, both plate producers.

minimill producers in the early 1960's. 1/ Operations are dispersed throughout the United States, but are especially concentrated in the and the second state of the southern states where there was growth in the markets for minimill products stemming from new construction and infrastructure expansion in the 1960's. fight that the second By contrast, integrated mills are located near raw material supplies (iron ore and coal) and major industrial consumers, which have largely been 6. concentrated in the midwestern United States. The electric furnace, by virtue of the nationwide availability of scrap, eliminated the traditional 1 . No. 1 · , · • • constraints on steel mill location and permitted the establishment of minimills in areas somewhat removed from water transportation, which was and the second strategy and the e . critical to the acquisition of raw materials by integrated mills. 2/

During the 1980's there has been a trend toward greater concentration in the minimill sector as a number of companies have acquired additional facilities (app. I, table I-1). These acquisitions reflect both the construction of new mills, and the purchase of existing mills from other minimill producers facing financial trouble and from divestitures by integrated producers attempting to rationalize their operations. <u>3</u>/ In some instances (e.g., North Star Steel), the acquisitions have resulted in producers becoming geographically diverse as opposed to the traditional pattern of geographic concentration. There is some foreign ownership of

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1/ Hogan, Minimills and Integrated Mills, p. 47.

2/ U.S. Department of Commerce, "Growth Patterns of the U.S. Minimill Steel Industry," September 1986.

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<u>3</u>/ Examples include Birmingham Steel, which expanded its operations to the East and West Coasts with the acquisition of Intercostal Steel, Judson Steel, and Northwest Steel Rolling Mills; and Florida Steel, which acquired Knoxville Iron.

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U.S. minimills, principally by Canadian and Japanese companies, as well as some joint ventures between U.S. and foreign firms. 1/

Capacity and Shipments

U.S. minimill producers accounted for 17 percent of domestic raw steel capacity and 50 percent of electric furnace steelmaking capacity as of June 30, 1988, compared with 14 percent and 43 percent, respectively, as of June 30, 1985 (app. J, table J-1). Minimills increased their share of capacity during a period in which total U.S. raw steel capacity. particularly at integrated companies, declined. The capacity utilization levels for minimills have risen since 1985 and range from approximately 73 percent (wire products) to 96 percent (wire rod) (app. J, table J-2). An initial strategy of the minimills was to produce continuously a limited number of high volume steel products with emphasis on maintaining a small, relatively simple scale of operation. The resulting production efficiencies have enabled minimills to dominate the production of rebars, wire and related products and light structurals (app. J, table J-3). 2/Minimills also account for the majority of shipments of these products; minimill producers supplied 82 percent of domestic rebar shipments, 86 percent of wire product shipments, and 62 percent of structural shape shipments during July 1987-June 1988 (app.D, table D-2 and app. J,

^{1/} For example, Atlantic Steel Co. and Raritan River Co. are both owned by Canadian companies, and Auburn Steel Co. is jointly owned by a Japanese Steel company and a Japanese trading company. Nucor Corp., a prominent U.S. minimill producer, has entered into a joint venture with Yamoto Steel of Japan to produce wide-flange beams.

^{2/} The current state of minimill production technology limits the expansion of minimill operations into other product areas, such as flat-rolled products. Efforts to expand product lines are being made, however, and flat-rolled production is a possibility at one company, Nucor Corp., by mid-1989.

table J-4). The construction, machinery, and industrial equipment industries are the major markets for minimill products.

Employment

A principal advantage of minimills is their typically high level of productivity of 1.5 to 2 manhours per ton of raw steel produced, compared with 4.5 to 6 manhours per ton for integrated producers. 1/ The competitive edge that minimill producers have achieved in productivity has resulted from advancements in production technology and the corresponding improvements in production efficiency, and good labor relations combined with innovative management techniques. Approximately 50 percent of the minimills have nonunion labor forces. In cases where minimills are organized, there are independent unions in addition to the USWA. In contrast, the majority of integrated producers are organized by the USWA. To maintain good labor/management relations, a number of minimills rely on innovative labor arrangements including supplementing wages with incentive plans and profit sharing, thereby increasing earnings without raising basic hourly wages. In recent labor negotiations, some of the integrated producers have also begun to implement profit-sharing plans. 2/

Raw Materials

Minimills depend on scrap for all of their raw material needs. The integrated plants also use scrap to make steel, but it is combined with

1/ "Future Bright for Minimills," remarks by Robert A. Garvey of North Star Steel Co. at Steel Survival Strategies III, June 1988.

2/ A more complete discussion of labor-related issues in the steel industry is contained in USITC inv. no. 332-209, <u>Annual Survey Concerning</u> <u>Competitive Conditions in the Steel Industry and Industry Efforts to Adjust</u> <u>and Modernize</u>, USITC pub. no. 2019, September 1987.

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molten pig iron in a basic-oxygen-furnace at a ratio of about 75 percent molten pig iron to 25 percent scrap. Consequently, the integrated mills depend on scrap to a much lesser extent than the minimills. The scrap needs of the minimill producers may expand as they move into the production of higher-valued products (e.g., flat-rolled products), which require a high quality scrap to ensure the production of high-grade steel sheets.

Those producers who do move into the production of flat-rolled products are expected to limit their output to products such as decking where formability requirements are less important and consequently do not require high quality scrap. 1/ Most minimills are expected to continue to produce traditional products such as rebars and small structural sections which require the same grades of scrap used in the past, so scrap supplies, in general, are not expected to be a problem for producers in the foreseeable future.

Direct-reduced iron (DRI) is currently the only substitute for the minimill's use of scrap in the electric furnace. Direct reduction is a process whereby deoxidized iron pellets are produced without the use of a blast furnace, but instead by the introduction of natural gas in a shaft furnace. The resulting pellet, which is approximately 90 percent iron and relatively free of contaminants, is then charged into the electric furnace in place of scrap. At present, only Georgetown Steel Corp's. plant in South Carolina is using DRI in its steelmaking. 2/

1/ Center for Metals Production, <u>Technoeconomic Assessment of Electric</u> <u>Steelmaking Through the Year 2000</u>, October 1987, p. 6-7.

2/ Hogan, Minimills and Integrated Mills, p. 98.

Production Costs

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Raw material costs

At the present time, minimill producers hold little advantage over integrated producers in liquid steelmaking costs, principally because of increased scrap prices. Scrap prices represent the bulk of minimill raw material costs. The price of scrap has fluctuated sharply in recent periods, with an overall increase of 36 percent from approximately \$78 per gross ton in mid-July 1987 to \$106 per gross ton in mid-July 1988. 1/-Higher scrap prices tend to reduce the cost advantage that minimills typically have over integrated producers for whom iron ore costs are significant, representing roughly 35 percent of the cost of producing liquid steel. Although the use of DRI is an option for minimill producers, should scrap prices become prohibitive, it still is not expected to become a major factor in steelmaking. According to industry sources, DRI prices are pegged to No. 1 premium steel-scrap prices, making it difficult to penetrate markets usually served by scrap-based minimills. Further impediments to the use of DRI include the natural gas costs of the processing operation. 2/

Labor costs

Although minimills tend to have lower fixed employment costs than integrated producers, the widespread implementation of profit-sharing and incentive plans among minimill producers enables employees to earn almost as much as their counterparts in the integrated mills. <u>3</u>/ Labor costs for

<u>1</u>/ These are composite prices for No. 1 heavy melting, a common grade of scrap. Data are from various issues of <u>American Metal Market</u>.
<u>2</u>/ Op. cit., Garvey.
<u>3</u>/ Hogan, <u>Minimills and Integrated Mills</u>, p. 110.

raw steel production, in terms of wages paid per manhour (i.e., excluding benefits), for both minimill producers and total industry producers are shown in the following tabulation:

<u>Period</u>		<u>Minimills</u> <u>1</u> / <u>Dollars</u>	<u>Total industry</u> 1/ <u>per manhour</u>
July 1, 1984-June	30, 1985 30, 1986 30, 1987 30, 1988	\$13.00	\$14.87
July 1, 1985-June		14.18	15.57
July 1, 1986-June		15.46	15.81
July 1, 1987-June		14.38	15.58

<u>1</u>/ Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from data contained in USITC investigation no. 332-209, <u>Annual Survey Concerning Competitive Conditions</u> <u>in the Steel Industry Efforts to Adjust and Modernize</u>, various issues.

The data show similar trends for both minimill producers and total industry producers in labor costs per manhour for raw steel production, rising from 1984 to 1987, then declining in 1988.

Capital costs

The significant disparity in capital investment required for minimills and integrated mills is largely because of the differences in the size and complexity of their facilities. The capital- saving nature of minimill technology, e.g., the savings from eliminating coke ovens and blast furnaces, makes the minimills' capital costs far less than those of integrated producers(i.e.,about \$500 per ton of annual capacity compared with approximately \$2,000 per ton for an integrated facility). In addition, minimill producers are less affected by pollution control regulations than are integrated producers. Most of the regulations establish effluent levels which require substantial investment by the steel industry for control equipment. However, electric furnace technology is less polluting than the combination of coke ovens, blast furnaces, and basic oxygen furnaces, and therefore requires less pollution control investment. $\underline{1}/$

Profitability

Despite rising relative production costs, the minimill industry has been profitable, partly because of the high capacity utilization levels gained from small scale operations (facilities are sized for moderate market conditions, not peak demand conditions) and production efficiencies derived from the high level of continuous casting (accounting for more than 95 percent of output). Minimill producers were consistently profitable during 1984-88, whereas the steel industry as a whole experienced net losses through mid-1987, as shown in the following tabulation of return on sales on total carbon and certain alloy steel operations: <u>2</u>/

<u>Period</u>		<u>Minimills</u> <u>1</u> /	<u>Total industry 1/</u>
		<u>Per</u>	<u>cent</u>
Tular 1 1004 Tura 2	、 0 1005	0.6	(2, 7)
July 1, 1984-June 3	0, 1965	0.0	(3.7)
July 1, 1965-June 3	0, 1900	4.Z	(4.1)
July 1, 1980-June 3	0, 1907	7.0	
JULA I' 130/_JULE J	U. 1700	/	U./

1/ Compiled on the basis of data from USITC investigation no. 332-209, "Annual Survey Concerning Competitive Conditions in the Steel Industry and Industry Efforts to Adjust and Modernize.

The minimills' profitability makes their stocks more desirable, which in turn has a favorable impact on their ability to acquire funds for capital investment in new technologies and product line expansion. This is in contrast to the integrated producers whose low profitability in recent

<u>1</u>/ Mark Paulson, "Technological Innovation, Adoption, and Industry Structure: Continuous Casting and the U.S. Minimill Sector," (Master of Science dissertation, Pennsylvania State University, 1985), pp. 72-73; and American Iron and Steel Institute, <u>Steel at the Crossroads: The American</u> <u>Steel Industry in the 1980's</u>.

 $\underline{2}$ / Certain alloy steel refers to alloy steel other than stainless and alloy tool steel.

years has made it difficult to acquire funds for modernization on favorable terms.

Like the integrated producers, the minimill industry has experienced bankruptcies and closures, due in part to a lack of modern equipment, the high cost of power, or competition from other minimills in their markets. 1/2/ Because bankrupt companies could be purchased for relatively little money, however, some minimill companies which closed have reopened, or are expected to reopen. 3/

Technology

Recently, minimills have made noteworthy advances in production technology, particularly as they expand into product lines traditionally in the realm of the integrated producers, such as flat-rolled products, large structural sections and seamless pipe. The first minimill to attempt to enter the flat-rolled product market is Nucor Corp., which is building a \$240 million, 800,000-ton-per-year continuous strip caster in Crawfordsville, Indiana, which is expected to be operating by mid-1989. In the past, minimilis did not compete in the flat-rolled products market to any great extent, <u>4</u>/ reflecting the significant capital investment (about \$600 million or more) required to build a hot-strip mill having capacity necessary for efficient operation (about 3 million tons).

1/ Hogan, Minimills and Integrated Mills, pp. 82-83.

<u>2</u>/ Some of the more recent closures include Roblin Steel Co. in Buffalo, New York; Soule Steel Co. in Long Beach, California; and Marathon Steel Co. in Arizona.

3/ Examples include Hurricane Steel Co., Kentucky Electric Steel (now a division of Newport Steel), and Hunt Steel (now owned by North Star Steel). 4/ Except for certain electric furnace-based plate producers such as Lukens Steel and Gilmore Steel.

in the integrated sector. The technology of producing a thin slab (no more than 2-inches thick) was critical to the Nucor operation, as it eliminated the need for some of the initial reducing stands on the hot-strip mill, thereby lowering capital expenditures. Other benefits include reduced use of energy and manpower, and less processing time. The lower cost of Nucor's mill compared with that of an integrated plant is also due to differences in basic equipment at each. The integrated producer's investment typically includes coke ovens, blast furnaces, and basic-oxygen furnaces as well as an 80-inch-wide hot-strip mill, while Nucor will use electric furnaces and a more narrow strip mill (54-inch) in its flat-rolled production. 1/

A number of minimill producers are awaiting the outcome of the continuous strip caster being constructed by Nucor before they commit the significant funds required for such an undertaking. Currently, integrated producers of steel sheet do not view Nucor as an immediate competitive threat, particularly in the automotive market. However, if the thin slab casting process can be refined to produce high-quality automotive sheet at competitive prices, then the currently existing U.S. sheet and strip industry will be challenged by minimill competitors. <u>2</u>/ Availability and price of the higher quality scrap required will also be important factors.

Some steel industry officials claim that the continued advancement of the minimills into integrated mill markets will cause some integrated facilities to shift more of their effort to supplying more of the semifinished market. As the minimills gain market share in certain product

1/ Hogan, Minimills and Integrated Mills.

<u>2</u>/ U.S. International Trade Commission, <u>U.S. Global Competitiveness: Steel</u> <u>Sheet and Strip Industry</u>, Inv. No. 332-231, USITC pub. No. 2050, January 1988.

lines, integrated mills are abandoning participation in these markets. This, in turn, results in excess melting and casting capability at the integrated facility. The sale of semifinished products is one method for maintaining a high level of furnace utilization, and would contribute toward resolving the current shortfall in slab product supply, for which reliance on imports is now required (see separate section on The Market for Semifinished Products).

Other minimill movement into the integrated mills' product areas includes Nucor's joint-venture with Yamato Steel of Japan to construct a mill on the Mississippi River in Arkansas, which will produce wide-flange beams and tieplates for railroad rails; North Star Steel's construction of a seamless pipe mill (at a cost of \$90-\$100 million) at its Youngstown, Ohio plant; and Chaparral Steel's expansion into the production of wideflange beams.

A number of minimills continue to operate basically the same type of equipment as they did when they were established (i.e., electric furnaces and bar mills). However, many electric furnaces have been replaced by larger units and/or modernized by the addition of water-cooled side panels and roofs and high-powered transformers. Almost all minimills now have continuous casters, compared with about half of such producers in the late 1960's. <u>1</u>/ Minimill producers have also made improvements in their bar mills, including the replacement of cross-country mills (so named because of the scattered locations of their rollstands) with straightaway mills having one stand after another in-line. The modernization needs of the minimills are far less than those of integrated producers who must deal

1/ Hogan, Minimills and Integrated Mills, p. 11.

with noncompetitive coke ovens, aging blast furnaces in need of updating, and rolling mills requiring replacement or relatively costly renovations.

In an effort to improve their technological edge in the production of standard long products (e.g., bars, rods, wire products and small sections), minimill producers have focused technological efforts on improving rolling speeds, manufacturing processes, labor productivity, and product yields. Their goal is to improve their ability to roll a wide variety of product lines, qualities, dimensions, and types of steel. <u>1</u>/

Trade

Imports

According to industry sources, U.S. minimills have a strong international cost position, particularly in liquid steelmaking costs. 2/ Imports of minimill products (primarily carbon and alloy bar, wire rod, and light structural shapes) have fluctuated over the past 5 years and have accounted for a higher share of the U.S. wire rod market than of the U.S. bars and shapes market (table 9). Imports of bars and light shapes and wire rods were at their lowest levels in 1983 before peaking in 1984 when import penetration was also at its highest for these two product categories (11.3 percent and 34.1 percent, respectively). Imports and import penetration for both product categories declined after 1984, with penetration levels reaching their 5-year lows of 9.2 percent for bars and shapes and 27.7 percent for wire rods in 1987. The establishment of Voluntary Restraint Agreements (VRA's) limiting exports by major steel suppliers to the United States likely contributed to the declines. The

<u>1</u>/ <u>Iron and Steelmaker</u>, "Prospects for Mini-Mills-Part II," June 1988.
<u>2</u>/ World Steel Dynamics, "Have the Minis Hit the Wall," presented at the minimill conference in Dallas in March 1988.

major suppliers of U.S. imports of bars and light shapes in 1987 were Canada, the EC countries (as a whole), Japan, and Turkey; and of wire rod were Canada, Japan, the EC countries, and Indonesia.

Table 9

Carbon and alloy 1/ steel bars, light structural shapes, and wire rods: U.S. imports, apparent consumption, and ratio of imports to consumption, 1983-87

Item	1983	1984	1985	1986	1987
Imports of:		. '	·		
Carbon and alloy bars and light shapes	• • • • •		· ·		
(1,000 short tons) Carbon and alloy wire	906	1,652	1,475	1,394	1,281
rods (1,000 short					:
tons)	1,159	1,571	1,456	1,344	1,449
Apparent consumption of: Carbon and alloy bars and light shapes	· . *	е н 1.			·
<pre>(1,000 short tons) Carbon and alloy wire rods (1,000 short</pre>	12,298	14,557	13,864	13,248	13,923
tons)	3,976	4,601	4,384	4,796	5,233
Ratio of imports to apparent consumption of:					
Carbon and alloy bars and light shapes		· ·			
(percent) Carbon and alloy wire	7.4	11.3	10.6	10.5	9.2
rods (percent)	29.1	34.1	33.2	28.0	27.7

1/ Excluding stainless steel and alloy tool steel.

Source: <u>Monthly Report on Selected Steel Industry Data</u>, Inv. No. 332-226, USITC Pub. 2064, March 1988.

Exports

Exports of minimill products (i.e., carbon steel rebar, wire rods, and light structural shapes) fluctuated during the past 5 years, reaching their lowest level in 1985 (table 10). Major country markets for these products include Mexico and Canada. Egypt received the majority of U.S. exports of rebar, a product used widely in the construction industry.

Although exports are believed to represent less than 1 percent of total minimill industry shipments, 1/ there have been isolated incidences of exports of significant volume during the past few years. These include Raritan Steel's shipments of wire rod to China in the early 1980's, and Chaparral Steel's exports to Europe and anticipated exports to Japan of structurals. In general, minimill exports are limited by the following: the products' relatively low value and competition from third-world countries whose output consists principally of similar low value products; high transportation costs relative to product value; and the minimill's general lack of expertise regarding export transactions.

Table 10 Carbon steel rebar, wire rods, and light structural shapes (bar-size light shapes): U.S. exports, 1983-87

Item	1983	1984	1985	1986	1987	•
			- <u>Thousand</u>	<u>short tons</u>		
Carbon steel rebars	34.4	9.8	7.4	14.1	20.5	
Carbon steel wire rods	1.3	3.1	1.8	2.6	2.7	
structural shapes Total	<u>12.3</u> 48.0	7.2 : 20.1	<u>3.3</u> 12.5	<u>2.4</u> 19.1	<u>2.8</u> 26.0	

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Exports.

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1/ Estimated on the basis of data contained in USITC investigation no. 332-209, <u>Annual Survey on Competitive Conditions in the Steel Industry and</u> Industry Efforts to Adjust and Modernize.

The Market for Semifinished Steel

Background

Semifinished steel (i.e., ingots, blooms, billets and slabs) historically has not been a significant item of commerce; only about 2 percent of total production has been traded commercially in recent years. The bulk of production is subjected to further processing operations by the company which produced the steel before it is sold to fabricating or manufacturing industries. However, the nature of the semifinished market is changing, as trade within and between countries is increasing.

Sales of semifinished steel have traditionally been made to companies outside the steel industry. The largest consumers over the last fifteen years have included independent forgers, ordnance and military goods producers, and the automotive sector; these consumers generally produce rough and finished forgings from the semifinished steel. A significant proportion of sales has also been made to service centers and distributors, which resell the semifinished steel to end users.

Sales within the industry have been a relatively minor influence on the market over that time. Steelmakers have traditionally entered the market in order to test other producer's materials or to cover a temporary shortfall in their own production capacity, such as when a blast furnace is relined.

Changes in the market

Steel industry restructuring is resulting in changes in the market for semifinished products. Firms are emerging which do not have the ability to produce raw steel and therefore consider semifinished products to be their raw material. The importance of semifinished sales within the industry has

increased and in 1987, for the first time, shipments of semifinished steel within the steel industry exceeded shipments to consumers outside the steel industry.

Sources of new demand

At some facilities, the decision has been made to abandon the ironmaking and associated steelmaking furnaces, (e.g. Lone Star Steel and California Steel Industries) while continuing to run their rolling mills. Other firms have emerged comprised solely of stand-alone rolling facilities formerly owned by integrated producers (e.g. USS-POSCO, or American Steel and Wire). New facilities are also appearing (e.g. Tuscaloosa Steel Co. and Heidtman) which are conceived, built, and operated from the start without melting and refining furnace capability. All of these firms rely on the ability to purchase slabs or billets in the market. The emergence of these firms and others like them will have a lasting stimulative effect on demand for semifinished products.

Short-term developments also affect the demand for semifinished products. Required maintenance on furnaces and casters (ranging up to 8months) may lead producers into the market seeking semifinished steel to cover shortfalls until such facilities are brought back on line. Technical problems leading to the inability to produce certain steel grades has led some firms (e.g. Weirton and National) to purchase part of their critical specification slab requirements from other producers, in some cases offshore producers. In most of these cases, the situation is a short term problem until current or planned facility upgrades are completed.

The role of imports

Although domestic producers have increased trade among themselves, imports have greatly expanded their role in the domestic semifinished

market. Until the early 1980's, imports of semifinished products showed no strong trends, fluctuating between 180,000 and 415,000 short tons per year. In 1981, imports began a steady rise in response to increased domestic demand. The trends for carbon/alloy steel and stainless steel have differed somewhat. The strongest growth in carbon and certain alloy semifinished steel occurred between 1983 and 1985, as imports almost tripled from 822,000 short tons to 2,430,000 short tons. A significant proportion of this growth can be accounted for by developments in the western steel market. California Steel Industries, a facility which started production in 1984, consumes approximately 1 million tons of slabs per year, the majority of which is imported.

Virtually all the growth in semifinished carbon and certain alloy products has emanated from countries covered by Voluntary Restraint Agreements (VRA's), which encompass most of the major producing countries (table 11). Although the VRA's placed ceilings on imports of semifinished products, the historical levels of semifinished steel imports from these countries were far less than the limits agreed to in the VRA negotiations, permitting increases in import levels. Through 1983, the last full year without VRA's, imports of semifinished steel from VRA countries had never exceeded 326,000 tons annually.

The greatest growth in semifinished stainless steel imports has occurred since 1986, as foreign semifinished steel imports tripled between 1986 and 1987 in response to the rapidly improving domestic market conditions for finished steel products. Non-VRA sources, which include more major producers of stainless steel than carbon steel, have accounted for over half of the growth in stainless semifinished imports (table 12). Current data indicate the higher import trends for carbon and alloy semifinished

······································	1	\$: :	
Item	: • 1984 •	: : 1985 :	1986 :	1987
	 1	Quantity (s	short tons)	
/RA countries:	·	1	,	
Australia	• 1	: 0	12,332	. 31
Austria	62	: 144	: 9 :	. 0
Brazil	: 145,007	1 872,465	405,474	467,926
Czechoslovakia	: 0	: 0	• O =	: 0
East Germany:	: 235	: 0	• 0 •	1
EC countries	817,524	: 965,501	763,434	949,332
Finland	10,899	: 13,926	17,261	13,948
Hungary	· 72	1 0	. 0.1	569
Japan	3,496	: 3,219	155,609	89,683
Mexico	12,205	: 5,108	67,413	61,884
Peoples Rep of China	1 0	1 0 :	. 0.	13
Poland	6,871		. <u> </u>	1,460
Portugal	. 0	r 0 :	i Öi	
Romania	O	: 5,383 :		
Republic of South Africa	58	: 55,106	61,901	22,578
Korea, Republic of	26,490	: 49,232	31,462	27,043
Spain	22,854	: 10,325	41,702	36,537
Trinidad and Tobago	• 0	: 0:	. 0.	0
Venezuela	. 66	: 41,304	. 0.	39,822
Yugoslavia	. 0	: 4,087		
		*		*****
Total	1,045,840	: 2,025,800	1,556,597	1,710,831
Sther countries:	•	8 :	· · · · · · · · · · · · · · · · · · ·	
Sweden	258,145	: 333,903	302,769 :	334,207
Canada!	313,032	: 69,572 :	206,363 :	110,445
Norway	264	1 () i	: 0 I	44,440
New Zealand	. 0	1 O 1	• 0•	28,212
Argentina	i ()	: 0:	· 0 ·	3,131
Indonesia	. 0	: 0:	• 0 •	906
Switzerland	L 1	* <u>0</u> *	: 74 :	99
Cayman Islands	1,084	1 O I	. 0:	٥
Peru	. 0	t 0 :	551 -	
U. S. S. R	. 0	1 O I	226 1	٥
All others	0	· 804 ·	120 *	. 0
Total	572,526	404,279	510,103 :	521,440
Grand total	1,618,366	2,430,079	2.066.700 :	2,232,271

Table 11 -- Carbon and certain alloy <u>1</u>/ semifinished steel: U.S. imports for consumption, by specified sources, 1984-1987

I/ Certain alloy refers to alloy steel other than stainless or tool steel.

Source: U.S. International Trade Commission, Monthly Report on Selected Steel Industry Data, (Inv. No. 332-226), USTIC Pub. 2064, March, 1988.

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: : : : : : 2 : Item 1984 : 1985 : 1986 : 1987 : : • : : Quantity (short tons) : : VRA countries: : : : 0.... Australia -----: 0. : 0 : 0 18 : Austria -----: 0 : 0 : 0 Brazil -----: 159 : 266 : . 1,888 : 13,361 Czechoslovakia -----: 0: 0 : 0 : 0 East Germany -----: 0 : 0 : 0 : Û EC countries-----: 1,120 : 10,491 : 3,133 : 6,340 Finland -----: 0 : 387 : 35 : . 0 Hungary -----: 0 : 0 : · 0 · · 0 Japan -----: 326 : 2,200 : 2,741 : 3,605 Mexico -----: 0 :: 0 : 0 : 0 Peoples Rep of China -----: 0 : 0 : 0 : 0 Poland -----: 0 : 20 : · **· ·** 0 Portugal -----: 0 : 0 : 0 : 0 Romania -----: 0 : 0 : 0 : A Republic of South Africa ----: 0 : 0 : 0 : 0 Korea, Republic of -----: ·· 0 : .3 : . 0 : 4 0 Spain -----: 758 : 440 : 543 : 368 Trinidad and Tobago ------: 0 : 0 : 0. : ۵ Venezuela -----: 0 : 0 : 0 : Û Yugoslavia -----: 0 : 0 : . 0 : 0 ----`Total-----: ··· 8,071 : 11,841 : 4,616 : 23,674 _____ Other countries: : 2 : : 6,808 ; 651 : Canada -----: 843 : 25,200 Sweden ------6,199 : 1,017 : 1,536 7,849 Switzerland -----: 0 : 31 : 0 ; 0 ----1,860 : 2,218 : Total-----: 13,007 : 33,049 :------------13,701 : 10,289 : 17,623 : Grand total------ 1 56,723

Table 12 --Stainless semifinished steel: U.S. imports for consumption, by specified sources 1984-1987

Source: U.S. International Trade Commission, <u>Monthly Report on Selected Steel</u> <u>Industry Data</u>, USITC Pub. 2064, March, 1988 steel continuing, but in the stainless area VRA sources are exporting to the United States well ahead of last year's rate, with significantly higher growth than non-VRA sources.

Market Imbalances

The increasing demand for semifinished materials has resulted in imbalances in the market in 1987 and 1988, even though some domestic producers have increased their efforts to supply the semifinished market. Bethlehem Steel relit idle furnaces at its Sparrows Point plant specifically to serve the domestic demand for slabs. Geneva Steel, an independent producer (but formerly a USX plant) has recently entered the market offering slabs for sale. USX's installation of a continuous caster at its Fairfield, Alabama plant was engineered with an extra wide mold as a result of Tuscaloosa's search for a supplier of oversize continuous cast slabs. Such wide products are not otherwise produced in the United States, but are required to fully utilize Tuscaloosa's new hot rolling mill which is capable of rolling sheet and light plate up to 104 inches wide. <u>Constraints on domestic supply</u>

Despite the efforts of the producers mentioned above and others, the domestic industry is constrained in its ability to respond to increasing demand. Within the past decade, the U.S. steel industry has progressively reduced its ability to produce semifinished steel (i.e., raw steel) by over 20 percent, or 30 million tons, as producers have chosen to lower costs and maximize the efficiency of their facilities. A major factor contributing to this reduction are the capital costs associated with maintaining coke ovens and blast furnaces. Costs for undertaking rebuilds or relines vary greatly according to the size of the furnace and the degree of wear, but relines generally cost from \$20 to \$40 million, with full rebuilds

potentially costing over \$100 million. 1/ Between 1985 and 1987, the total number of blast furnaces in the U.S. industry fell from 87 to 63 (28 percent), reducing available productive capacity by roughly 21 percent. The number of domestic coking batteries also declined, from 89 in 1985 to 69 in 1987. 2/ Excess steel refining capacity, mostly obsolete open hearth furnaces, has been permanently shut down by several firms as they seek to adjust to changing competitive conditions. These closures have constrained the domestic industry's ability to provide semifinished steel to the growing market.

Constraints on import supply

Imports of semifinished steel have increased to the point where the VRA ceilings have had an effect in constraining imports. High levels of demand throughout 1987 and 1988 for finished products has led to numerous filings by domestic firms for semifinished steel under short supply provisions, as ceilings for semifinished steel are reached under the various Agreements. In both years, the Department of Commerce (DOC), which administers the program, has found that "extraordinary circumstances" have existed and has approved imports which exceeded the short supply ceilings of 194,865 short tons for 1987 and 195,350 short tons for 1988 (table 13). In 1987, DOC approved 313,320 tons of short supply imports and so far in 1988 DOC has already approved 716,313 tons of short supply imports. However, due to tight supply conditions existing worldwide for semifinished steel and

<u>1</u>/ Labee, C. J. & Samways, N. L., "Developments in the Iron and Steel Industry U.S. and Canada--1987", <u>Iron and Steel Engineer</u>, February, 1988. <u>2</u>/ <u>World Steel Industry Data Handbook/The US 1987</u>, 33 Metal Producing/McGraw Hill, New York, 1987.

	1987	1987	1988	1988
Country	VRA Ceiling	Short Supply	VRA Ceiling	Short Supply
·	-	Provision	_	Provision
			short tons)	
Brazil	700,000	70,000	700,000	70,000
European Comm.	620,000 <u>1</u> /	82,000	640,000 <u>1</u> /	82,000
Mexico	100,000	10,000	105,000	10,500
Japan	100,000	10,000	100,000	10,000
Venezuela	60,000	6,000	60,000	6,000
Korea	50,000	5,000	50,000	5,000
Australia	50,000	5,000	50,000	5,000
Spain	50,000	5,000	50,000	5,000
Finland	15,000	1,500	15,000	1,500
Trinidad & Tob.	ago 3,500	350	3,500	350
Totals <u>2</u> /	1,748,500	194,865	1,773,500	i95,350

Table 13.-- Imports of semifinished steel available in 1987 and 1988 under Voluntary Restraint Agreements

1/ An additional 200,000 tons of slabs may be imported by Tuscaloosa[®] Steel Corp. at the discretion of the U.S. Trade Representative. 2/ The Republic of South Africa was originally granted 100,000 short tons of semifinished steel imports under their VRA. These imports have been banned by the imposition of U.S. economic sanctions against that country.

Source: U.S. Department of Commerce

accompanying problems with scheduling deliveries (approvals for short supply imports are good for only three-month periods), it is estimated that actual imports under short supply waivers is perhaps only half of what has been approved. 3/ The demand for imported semifinished steel seems to have decreased, as the DOC has received no short supply requests for semifinished steel for the fourth quarter of 1988 since April. The reasons offered by producers for this change are reportedly varied, but a general weakening in domestic demand for steel products seems to have relieved the shortage situation in the semifinished steel market.

In their requests for short supply waivers, companies have cited various reasons for the need to import material. A general lack of domestically $\overline{3/}$ For a detailed listing of short supply requests and approvals, please see appendix L.

available material seems to have been the overriding cause, but isolated incidents have caused requests as well. The six-month strike of the USS Division of USX Corp., a major domestic supplier of semifinished products, generated several requests by the company's customers. Some of these requests were withdrawn with the resumption of production by USS. A number of companies have also cited equipment shutdowns, failures or production disruptions caused by installing new technology, either in their own facilities or their suppliers, as the cause of their requests. Other reasons have ranged from the embargo of South African slabs to the construction of new rolling mills prior to the completion of furnaces at the facility to feed the mills.

Outlook

The supply/demand imbalances encountered in 1987 and 1988 are unlikely to continue, and any recurrence should be short term in nature. Sources of supply are increasing worldwide and shortages resulting from imbalances in the market will continue to be attributable to localized demand conditions and trade restrictions. The lack of supply sources, in the medium to long term, should no longer be a constraining factor.

Domestic supply

Sources of domestic supply dedicated to slabs as a final product are expected to emerge as entrepreneurs are becoming interested in operating such facilities. Recent reports indicate one group is considering building a scrap-based melting facility in the Mid-west to produce slabs for sale. Construction is said to be contingent on acquisition of long-term supply contracts. In another development, The Steel Valley Authority, a quasigovernment agency based in the Pittsburgh area, is considering buying the

idled South Side Works of LTV Corp. (Pittsburgh, PA.) to run as a slab producer. The Authority reportedly has three steel companies (Cyclops, Sharon, and Lukens) interested in buying carbon steel slabs from the facility. Initial projected production has been set at 1 million tons annually, but existing furnace capacity would allow production levels up to about 2 million tons.<u>4</u>/

Producers of rolled products with excess furnace capacity can be expected to enter the expanding market as well. Discussions with various billet producers indicate that several have either recently entered, or will be entering, the market. Some foresee the encroachment of the minimill sector as a force which has led, and will continue to lead, some large integrated facilities into greater participation in supplying the semifinished market. An example of this process is the Fairfield, Alabama plant of USX Corp. Competition from minimills contributed to its withdrawal from certain bar markets and the shut down of its bar rolling facilities. This left the facility with excess raw steel capacity, with which they are producing semifinished products to sell to customers like Tuscaloosa Steel. If integrated mills continue to abandon certain product markets (such as bars and light structurals), leaving a plant with excess melting and casting capability, sales of semifinished steel is one way that furnace utilization can be kept at high levels.

Import supply

While some of the new demand for semifinished steel will be supplied by domestic firms, it is likely that foreign sources will continue to account for a significant portion of the market. Although short-term changes in demand will likely lead to variations in year-to-year import levels, over

4/ American Metal Market, June 22, 1988.

the long term the trend for imported semifinished steel is expected to show a steady rise. A major factor contributing to increased imports is the shift in the location of high grade raw materials. Recently developed overseas iron ore mines in South America and Australia contain much higher grade iron ore than is available from North American mines, leading to lower raw material costs, increasing raw steel production, and increased semifinished steel export opportunities for producers in those regions.

International trade in semifinished steel currently involves approximately 12 million tons of material annually (which is equal to 10 percent of trade in all steel products), the bulk of which is accounted for by slabs. Trade within the EC accounts for roughly one third of the total. Major sources include Brazil, West Germany, the Netherlands, and the United Kingdom, with Brazil supplying a steadily increasing share of western world exports (30 percent in 1987).5/ Major destinations include the United States, Italy, West Germany, and China. The United States is the largest importer, consistently accounting for roughly 20 percent of imports. Trade in semifinished steel is expected to continue to increase, with one forecast predicting international trade in slabs to almost double by the mid-1990's.6/

Latin America is likely to increase its position as a major supplier of semifinished steel to the U.S. market. Several firms see semifinished steel for export as a stepping stone to the production of more finished products. For example, a major slab producer in Brazil, which currently exports significant quantities to U.S. customers, has announced its

5/ "World Trade Steel", U.K. Iron and Steel Statistics Bureau, 1988. 6/ "The Steel Outlook: Key Perspectives and Plausible Wild Cards", <u>World Steel Dynamics</u>, PaineWebber, June 21, 1988.

intention to install its own hot strip mill and supply hot rolled coils to its domestic market, diminishing its participation in the semifinished export market. However, plans for a new 3 million ton per year slab facility in Brazil have been announced. This project, combined with projects in Mexico and Venezuela aimed at producing semifinished steel for export, indicate an increasing participation by Latin American sources in the U.S. semifinished steel market.

The expected additions to domestic and foreign production dedicated to semifinished steel for sale should relieve supply conditions. However, the current trend towards a larger market for semifinished products is expected to continue as the industry decentralizes, moving to smaller, more geographically diverse production facilities. Worldwide overcapacity for raw steel production will increase the availability of semifinished steel, convincing more companies that the production of rolled steel products based on semifinished steel as a raw material is feasible.

CASH FLOW, CASH FLOW COMMITMENTS, AND ADJUSTMENT OF MAJOR COMPANIES <u>Net Cash Flow, Cash Flow Commitments, and</u> <u>Expenditures for the Retraining of Workers</u>

Net cash flow and cash flow commitments 1/ 2/

<u>Net cash flow</u>

To arrive at the statutory cash flow for the 10 major steel companies, $\underline{3}/$ the Commission collected data on net income from steel product operations and the sources and uses of cash for the October 1, 1987-June 30, 1988 period (tables 14 and 15). Net cash flow was then calculated according to the definition provided in P.L. 98-573, Section (b)(2)(B) (see table 16). $\underline{4}/$

1/ Under the Trade and Tariff Act of 1984 (P.L. 98-573), the President is required to make an annual determination to the Committee on Ways and Means of the House of Representatives and the Committee on Finance of the Senate as to whether "the major companies of the steel industry, taken as a whole, have, during the 12-month period ending at the close of an anniversary referred to in [the Act],...committed substantially all of their net cash flow from steel product operations for purposes of reinvestment in, and modernization of that industry through investment in modern plant and equipment, research and development, and other appropriate projects such as working capital for steel operations and programs for the retraining of workers."

2/ See appendix K for final data on the October 1, 1986-September 30, 1987 period.

3/ Major company" is defined in the Trade and Tariff Act as an enterprise whose raw steel production in the United States during 1983 exceeded 1,500.000 net tons.

4/ Under P.L. 98-573, Section 806(b)(2)(B), net cash flow is defined as "annual net (after tax) income plus depreciation, depletion allowances, amortization and changes in reserves minus dividends and payments on shortterm and long term debt and liabilities." Table 14.--Calculation of major companies' net income from steel product operations, October 1, 1987 - June 30, 1988

(In thousands)						
Item	Calculation					
Net sales	\$21,892,077					
Cost of goods sold	19,127,280					
General, selling, and administrative expenses	726,872					
Interest expense	347,611					
Reserves, provisions, special charges and other						
unusual items	227,325					
All other expenses or (income)	11,225					
Current Income taxes	289,731					
Tax effect of operating loss carry forward	(231,162)					
Investment tax credit refund	(231,804)					
Deferred taxes	0					
Net income from steel operations	1,624,999					

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

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Table 15.--Sources and uses of cash and cash equivalents in steel product operations, October 1, 1987 - June 30, 1988

(In thousands)	
Item	Calculation
Cash provided from (cash used in) operations:	
Net income	\$1,624,999
Depreciation, depletion, and amortization	937,482
Non-cash income tax expense	(3,740)
Non-cash charges (credits):	· · ·
relating to reserves, provisions, special	
charges and other unusual items	79,758
Other	21,789
Cash flow from earnings	2,660,288
Changes in working capital, excluding financing	•
activities	(437,594)
Cash flow from operations	2,222,694
Cash provided from (used in) financing	
activities:	•
Net additions to or (reductuions) in long	
and short term debt	(906,266)
Changes in capital stock	345,128
Transfers from or (to) corporate	(284,427)
Other	(27,436)
Subtotal	(873,001)
Investment, $\underline{1}$ / dividends paid, and other cash	
provided (used)	(1,269,019)
Increase (decrease) in cash and cash equivalents	80,674
Cash and cash equivalents:	
Beginning of period	860,505
End of period	941,179
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 $\underline{1}$ / Includes capital expenditures and cash generated from the disposal of assets.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

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Table 16.--Calculation of major companies' cash flow on steel product operations 1/, October 1, 1987 - June 30, 1988

(In thousands)

Item	Calculation
Cash flow from earnings	\$ 2,660,288
Net changes in long and short term debt and	
liabilities <u>2</u> /	(1,343,860)
Dividends paid	(199,316)
Net cash flow from steel	
product operations <u>3</u>	/ 1,117,112

1/ Under P.L. 98-573, section 806 (b)(2)(B) net cash flow is defined as "annual net (after-tax) income plus depreciation, depletion allowances, amortization, and changes in reserves minus dividends and payments on short-term and long term debt and liabilities." The Conference report on the bill states that payment on short and long term debt and other liabilities means the net reduction in such debt and liabilities. 2/ Includes net changes in working capital.

 $\underline{3}$ / Including net income pertaining to prior periods and net increases in debt and liabilities, exclusion of which would reduce cash flow to \$466.2 million.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

There are two significant factors that could affect the calculation of the major companies' net cash flow. The first pertains to the treatment of losses or gains from prior period activities for which cash was either paid, received or saved during Oct. 1, 1987-June 30, 1988. During the period under investigation, there were two major items reported in prior period activities: (1) tax savings due to net operating loss carry forwards, and (2) unused investment tax credit refunds. P.L. 98-573 does not specify how such savings or income should be treated. Deduction of these prior period activities would decrease the cash flow figure presented in table 16 by \$484 million (see table 17).

A second issue relates to the item "payments on short and long term debt and liabilities." The conference report on P.L. 98-573 indicates that such payments should reflect, "the net reduction in such liabilities, i.e., net cash flow would reflect both reductions and increases in debt and liabilities." The law does not indicate how a company's net increases should be treated. Deduction of net increases by companies during the period Oct. 1, 1987-June 30, 1988 would decrease the cash flow figure presented in table 16 by \$166 million (see table 17).

For the period July 1, 1988-Sept. 30, 1988, companies were asked to estimate cash flow (not reflecting prior period activities or net increases in debts and liabilities). All companies provided estimates, which totaled \$394 million (see table 17). Summing this estimate with cash flow over the October-June period results in a total period estimate of \$1.5 billion. Note that the retirement of debt is reflected as a reduction in net cash flow from steel operations, but that proceeds from stock issuances are not included when calculating cash flow from steel operations.

Cash flow commitments

During the period October 1, 1987-June 30, 1988 net steel related expenditures 1/ of the 10 major steel companies amounted to \$1.6 billion (see table 18). An additional \$728 million of steel related expenditures was forecast by 10 companies for the July 1, 1988-Sept. 30, 1988 period (see table K-5). Summing the estimate with expenditure over the October-June period results in a total period estimate \$2.3 billion.

1/ Net steel related expenditures are derived by deducting (from total expenditures) expenditures that were already reflected in the net income calculation used to determine net cash flow from earnings.

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	<u>October 1</u> Net cash flow <u>1</u> /	<u>. 1987-June 30</u> Net income pertaining to prior periods	<u>1988</u> Net increase in short and long term debt and liabilities <u>2</u> /	July 1, 1988- Sept. 30, 1988 Net cash flow estimate
Агтео	***	 ***	***	***
Bethlehem	***	***	***	***
Inland	* * *	***	***	***
LTV	***	***	***	***
National	***	***	***	***
Nucor	***	***	***	***
Rouge	***	***	***	***
lisx	***	***	***	***
Weirton	***	***	***	***
Wheeling-				
Pittsburgh	***	<u>***</u>	***	***
Total	1,117,112	484,452	166,477	393,887

Table 17.--Major U.S. steel companies: Net cash flow from steel product operations, October 1, 1987-June 30, 1988 and July 1, 1988-September 30, 1988.

1/ Including net income pertaining to prior periods and net increases in long and short debt and liabilities.

2/ Includes net changes in working capital.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission

<u>Worker retraining 1/</u>

Expenditures by the 10 major steel companies for the retraining of workers during October 1, 1987-June 30, 1988 totaled \$51.6 million (see table 18). Of the 10 companies that reported a positive net cash flow during the nine month period, all but 1 indicated that retraining

^{1/} In addition to the determination on cash flow commitments indicated above the President is required to determine whether, "each of the major companies committed for the applicable 12-month period not less than 1 percent of net cash flow to the retraining of workers; except that this requirement may be waived by the President with respect to a major company in noncompliance, if he finds unusual economic circumstances exist with respect to that company."

***************************************		Steel rela	ted expenditu	res				······································	•	Ratio of
Company	Net cash flow <u>l</u> / (1)	Research Plant and and develop- Re equipment ment $2/$ wo (2) (3) (4		Retraining Total workers <u>2</u> / Other expenditures (4) (5) (6)		Expenditures reflected Net in net expenditures cash flow (6-7) (7) (8)		Adjusted net cash flow (1 + 4) (9)	expenditures for retraining workers to adjusted net cash flow (10)	
	****				<u>1,000</u>	lollars				Percent
Armco	***	***	***	***	***	***	****	***	***	***
Bethlehem	***	***	***	***	***	***	***	***	***	***
Inland	***	***	***	***	***	***	***	***	***	***
LTV	***	***	***	***	***	***	***	***	***	***
National	***	***	***	***	***	***	*** .	***	***	***
Nucor	***	***	***	***	***	***	***	***	***	***
Rouge	***	***	***	***	***	***	***	***	***	***
USX	***	***	***	***	***	***	***	***	***	***
Weirton	***	***	***	***	***	***	***	***	***	***
Wheeling-							· . ·		•	
Pittsburgh	***	***	***	***	***	***	***	***	***	***
Total	1,117,112	1,460,696	78,957	51,606	112,805	1,704,064	141,478	1,562,586	1,168,718	4.4

Table 18.---Major U.S. steel companies: Net cash flow from steel product operations, and steel related expenditures, October 1, 1987-June 30, 1988

 $\frac{1}{2}$ Including income pertaining to prior periods and net increases in short and long term debts and liabilities (see table 17). $\frac{2}{2}$ Included as expenses in net income calculations.

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expenditures exceeded 1 percent of net cash flow. 1/ With respect to that one company, ***, no expenditures for the retraining of workers was reported in light of actual growth in employment.

For the period October 1, 1987-September 30, 1988, all 10 companies projected positive net cash flows and all but 1 expected expenditures for the retraining of workers to exceed 1 percent of net cash flow from steel operations. *** does not expect its respective situation to change from that reported above.

(Pages 86 to 116 contain information which is entitled to confidential treatment and have not been published.)

1/ Retraining expenditures are treated as an expense in income statements, as either a component of cost of goods sold or a component of general, selling, and administrative expenses; in order to avoid "double-counting," they have been added back to cash flow prior to the calculation of the ratio of retraining expenditures to cash flow.

Actions Taken to Maintain International Competitiveness 1/

The major companies identified a number of actions they have taken, or will take, during the period October 1, 1987 to September 30, 1988 to maintain their international competitiveness. The purpose of the actions were identified as follows: (1) to produce price-competitive and qualitycompetitive products: (2) to control costs of production including employment costs, and (3) to improve productivity. With respect to the first element, a number of major companies identified actions taken to improve steelmaking and flat-rolled product (i.e., plates, sheets and strip) operations. These actions included installation or modifications of continuous casting equipment, improvements in computer control of operations, and modifications in electrogalvanizing equipment. Actions taken by the major companies to control costs of production and to increase productivity included reductions in the size of the workforce, company restructuring, new labor contracts, and use of lower cost raw materials and energy sources. Following is a company-by-company review of competitive actions taken, based on information reported by companies in response to Commission questionnaires, as well as information drawn from annual reports and other sources.

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(Pages 117 to 125 contain information entitled to confidential treatment and have not been published.)

^{1/} Under the Trade and Tariff Act of 1984, the President is required to make an annual determination as to whether "the major companies of the steel industry, taken as a whole, have, during the 12-month period ending at the close of an anniversary referred to in [The Act] . . .taken sufficient action to maintain their international competitiveness, including action to produce price-competitive and quality-competitive products, to control costs of production, including employment costs, and improve productivity."

Appendix A

Copy of Letter to Chairwoman Paula Stern from Ambassador William E. Brock, United States Trade Representative, Requesting an Investigation

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THE UNITED STATES TRADE GENERATIVE

WASHINGTON

February 85 F19852

The Honorable Paula Stern Chairwoman United States International Trade Commission 701 "E" Street, N.W. Washington, D.C. 20436

Dear Madam Chairwoman:

On September 18, the President responded to the steel Industry."'s petition for import relief under Section 201 of the Trade Act of 1974. A copy of his decision is enclosed. It was the Presedent's concern that U.S. steel policy should promote the costinued development of a free market environment in steel trade while maintaining maximum opportunities for the domestic steel industry to recover and modernize. In order to achieve this goal the President has directed me to coordinate his steel policy decision through the implementation of a nine point comprehensive policy.

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To effectuate this policy, I request, at the direction of the President and pursuant to Section 332(g) of the Tariff Act of 1930, that the Commission monitor competitive conditions in the steel industry and the industry's efforts to adjust and modernize and to prepare annual reports on those efforts during the five year period beginning October 1, 1984. Also, inasmuch as certain specific information on these efforts will be required for the administration of the enforcement authority for the national policy for the steel industry, contained in title VIII of the Trade and Tariff Act of 1984 (the Act), I request the Commission to include in its annual reports, in addition to the basic categories of information listed in the attachment to this letter, the best information it can compile for the preceding 12-month period ending September 30 of each year on the following matters.

(A) The extent to which the major companies of the steel industry have, or will have committed their net cash flow from steel product operations for purposes of reinvestment in, and modernization of, that industry through investment in modern plant and equipment, research and development, and other appropriate projects, such as working capital for steel operations and programs for the retraining of workers;

(B) Actions taken by the major companies to maintain their international competitiveness, including action to produce price-

competitive and quality-competitive products, to control costs of production, including employment costs, and to improve productivity; and

(C) Whether each of the major companies committed, or will have committed, not less than one percent of net cash flow to the retraining of workers.

If any major company did not commit at least one percent of its net cash flow to the retraining of workers, the Commission should report any unusual economic circumstances which contributed to the company's failure to do so.

For the purpose of this request the terms "steel industry", "major company", and "net cash flow" shall have the same meaning as that set forth in title VIII of the Act.

In addition to reporting on the progress on the steel industry as a whole, I request that the Commission prepare its report in such a manner that, to the extent possible, the progress of carbon steel producers in their efforts to adjust and modernize can be distinguished from that of producers of specialty steel.

Inasmuch as the President's determination called for in the Act will have to be made before the end of each annual period, the Commission is requested to begin submitting its annual reports on August 1, 1985, and on each successive August 1 through 1989.

Very truly yours, NILLIN E. BROCK

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Enclosure

THE WHITE BOUSE

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Office of the Press Secretary

Por Inmediate Release

MEMORANDUM FOR THE UNITED STATES TRADE REPRESENTATIVE

SUBJECT: Steel Import Relief Determination

Pursuant to Section 202(b)(1) of the Trade Act of 1974, (P.L. 93-618, 88 Stat. 1978), I have determined the actions I will take with respect to the report of the United States International Trade Commission (USITC) dated July 24, 1984 concerning carbon and alloy steel.

I have determined today under Section 203 of the Trade Act that import relief is not in the national economic interest for the following reasons:

- In responding to this pressing import problem, we must do all we can to avoid protectionism, to keep our market open to free and fair competition, and to provide certainty of access for our trading partners. This Administration has repeatedly, and most recently at the London Economic Summit, committed itself to "resist continuing protectionist pressures, to reduce barriers to trade, and to make reneved efforts to liberalize and expand trade in manufactures, commodities and services."
- 2. It is not in the national economic interest to take actions which put at risk thousands of jobs in steel fabricating and other consuming industries or in the other sectors of the U.S. economy that might be affected by compensation or retaliation measures to which our trading partners would be entitled.
- 3. This Administration has already taken many steps to deal with the steel import problem. In 1982, a comprehensive arrangement restraining steel imports from the European Community was negotiated. This Administration has also conducted an unprecedented number of antidumping and countervailing duty investigations of steel imports, in most cases resulting in the imposition of duties or a negotiated settlement. In addition, the governments of Mexico and South Africa have unilaterally imposed voluntary restraint on emports, leading to the termination of unfair trade complaints.

However, I have decided to establish a government policy for the steel industry. I believe that this new policy is the best way to respond to the legitimate concerns of the domestic industry while maintaining access to our market for those who trade fairly.

I am directing you to coordinate and direct the implementation of this policy for the U.S. steel industry which includes the following elements:
- 1. The United States Trade Representative (USTR) will negotiate "surge control" arrangements or understandings and, where appropriate, suspension agreements with countries whose emports to the United States have increased significantly in recent years due to an unfair surge in imports -- unfair because of dumping subsidization, or diversion from other importing countries who have restricted access to their markets. The USTR will negotiate additional such arrangements and understandings, if necessary, to control new surges of imports that result from subsidizing, dumping or other unfair or restrictive trade practices during the next five years. If agreements cannot be reached to control new surges from countries that are guilty of unfair practices, the President will use his authority under the unfair trade laws including Section 301 of the Trade Act of 1974 to assure that these-countries do not maintain unrestricted access to the United States market.
- 2. The United States Trade Representative will reaffirm existing measures with countsies that have voluntarily restrained their exports to our market, and will take necessary steps to ensure the effectiveness of these measures. Specifically the Administration will support legislation in the Congress to make enforceable at our borders all voluntary agreements and "surge control" arrangements.
- 3. The United States Trade Representative will consult with our trading partners to seek the elimination of trade distortive and trade restraining practices in other markets to lead to the liberalization of steel trade around the world.
- 4. The Department of Commerce will continue to rigorously enforce our unfair trade laws. Further, the Department of Commerce and the United States Trade Representative will self-initiate unfair trade cases including antidumping, countervailing duty and Section 301 actions when appropriate.
- 5. The United States International Trade Commission vill be asked to monitor the efforts of the steel industry to adjust and modernize, and to prepare an annual report for the President on those efforts.
- 6. The Secretary of Commerce will establish an interagency group to analyze all U.S. government domestic tax, regulatory and antitrust laws and policies which could hinder the ability of the steel industry to modernize.
- 7. The Secretary of Defense and the Federal Emergency Nanagement Agency will analyze domestic steel plate rolling capacity in relationship to emergency needs, and to recommend to the President appropriate actions if deficiencies are found to exist.
- 8. The Secretary of Labor will work with state and local governments to develop a program to assist workers in communities adversely affected by steel imports.

9. The United States Trade Representative will closely monitor the trade elements of this program and the resultant import trends and report them to the President on a quarterly basis.

The Administration's hope is that this combination of actions, taken without protectionist intention or effect would enable one of the United States' most basic and vital industries to return to a level playing field, one in which steel is traded on the basis of market forces, not government intervention, and one in which the market would seek a return to a more normal level of steel imports, or approximately 18.5 percent, excluding semi-finished steel.

This determination is to be published in the Paderal Register.

RONALD RENGNI

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A-7 Attachment

Annual data specified in section B below are requested to be reported to the maximum extent possible for each of the 21 product categories listed in section A below:

A. Product Categories

Sheet and strip

- 1. Hot rolled carbon and certain alloy 1/
- 2. Cold rolled carbon and certain alloy 1/
- 3. Galvanized carbon and certain alloy 17
- 4. Other carbon and certain alloy 1/
- 5. Stainless

Plate

- 1. Carbon and certain alloy 1/
- 2. Stainless

Pipe and tube

- 1. 011 country tubular goods
- 2. Line pipe
- 3. Other carbon and alloy pipes and tubes
- 4. Stainless

Bars

- 1. Hot finished carbon bar and certain alloy 1/
- 2. Cold finished carbon bar and certain alloy 1/
- 3. Reinforcing carbon bar and certain alloy 1/

Structurals

1. Structural shapes (including fabricated structurals)

Rails and related railway products

1. Rails and related railway products

Wire rods

1. Carbon and certain alloy wire rod 1/

Wire and wire products

- 1. Carbon and certain alloy wire 1/
- 2. Stainless wire
- 3. Carbon and certain alloy 1/ wire products (including wire rope and strand)

 $\frac{1}{\text{tool}}$ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

Attachment--Con.

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Semifinished

1. Semifinished

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B. Data Requested

Domestic Producers

Production Shipments Net sales Net profits Orders Inventories Prices Employment Man-hours Capital expenditures: For modern production techniques or facilities For older production techniques or facilities For polution control or occupational safety and health Other Capacity and net change in capacity Research and development expenditures Other actions to adjust and modernize Investments in activities other than steel

Importers

4

Total imports Prices Orders Inventories

Appendix B

Notice of the Commission's Investigation

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UNITED STATES INTERNATIONAL TRADE COMMISSION Washington, D.C. 20436

(332-209)

Annual Surveys Concerning Competitive Conditions in the Steel Industry and Industry Efforts to Adjust and Modernize

AGENCY: UNITED STATES INTERNATIONAL TRADE COMMISSION

ACTION: Institution of an investigation under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332 (g)) concerning the competitive conditions in the steel industry and the industry's efforts to adjust and modernize.

EFFECTIVE DATE: March 8, 1985

FOR FURTHER INFORMATION CONTACT: Hr. Dennis Rapkins or Hr. Peter Avery, Hinerals and Metals Division, United States International Trade Commission, 701 E Street NW., Washington, D.C. 20436 (telephone: 202-523-0438, 202-523-0342, respectively).

BACKGROUND AND SCOPE OF INVESTIGATION: The Commission instituted the investigation, No. 332-209, following receipt on February 12, 1985, of a request from the United States Trade Representative (USTR), at the direction of the President. In accordance with the request, the Commission will monitor competitive conditions in the steel industry and the industry's efforts to adjust and modernize, and prepare annual reports on these efforts during the 5 year period beginning October 1, 1984. In addition to collecting the information listed in the appendix, the Commission will compile the best information it can for the preceding 12-month period ending September 30 of each year on the following matters:

- (1) The extent to which the major companies of the steel industry have, or will have committed their net cash flow from steel product operations for purposes of reinvestment in, and modernization of, that industry through investment in modern plant and equipment, research and development, and other appropriate projects, such as working capital for steel operations and programs for the retraining of workers;
- (2) Actions taken by the major companies to maintain their international competitiveness, including action to produce price- competitive and quality-competitive products, to control costs of production, including employment costs, and to improve productivity; and
- (3) Whether each of the major companies committed, or will have committed, not less than one percent of net cash flow to the retraining of workers. If any major company did not commit at least one percent of its net cash flow to the retraining of workers, the Commission will report any unusual economic circumstances which contributed to the company's failure to do so.

For the purposes of this investigation, the term "steel industry" is defined as producers in the United States of steel products; "major company" is an enterprise whose raw steel production in the United States during 1983 exceeded 1,500,000 net tons; and "net cash flow" is annual net (after-tax) income plus depreciation, depletion allowances, amortization, and changes in reserves minus dividends and payments on short-term and long-term debts and liabilities.

In addition to reporting on the progress of the steel industry as a whole, reports will be prepared in such a manner that, to the extent possible, the progress of carbon steel producers in their efforts to adjust and modernize can be distinguished from that of producers of specialty steel.

The Commission will submit its initial annual report to the President and USTR by August 1, 1985. Subsequent reports will be submitted by August 1 of each successive year through 1989. A public version of the report will be available 2 weeks later.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the investigation. Commercial or financial information which a submitting party desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's <u>Bules of Practice and Procedures</u> (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested persons. To be assured of consideration by the Commission, written statements should be received at the earliest possible date, but no later than July 1, 1985 and by July 1 of each successive year through 1989. All submissions should be addressed to the Secretary at the Commission's Office in Washington, D.C.

By order of the Commission.

Kenneth R. Mason Secretary

Attachment

Issued: March 11, 1985

Annual data specified in section B below are requested to be reported to the maximum extent possible for each of the 21 product categories listed in section A below:

A. Product Categories

Sheet and strip

Hot rolled carbon and certain alloy 1/
Cold rolled carbon and certain alloy 1/
Galvanized carbon and certain alloy 1/
Other carbon and certain alloy 1/
Stainless

Plate

Carbon and certain alloy <u>1</u>/
Stainless

Pipe and tube

Oil country tubular goods
Line pipe
Other carbon and alloy pipes and tubes
Stainless

Bars

1. Hot finished carbon bar and certain alloy 1/

2. Cold finished carbon bar and certain alloy 1/

3. Reinforcing carbon bar and certain alloy 1/

Structurals

1. Structural shapes (including fabricated structurals)

Rails and related railway products

1. Rails and related railway products

Wire rods

1. Carbon and certain alloy wire rod 1/

Wire and wire products

- 1. Carbon and certain alloy wire 1/
- 2. Stainless wire
- Carbon and certain alloy <u>1</u>/ wire products (including wire rope and strand)

Semifinished

1. Semifinished (carbon and certain alloy 1/; and stainless and tool steel)

Appendix

Appendix--Con.

B. Data Requested

Domestic Producers

Production Shipments Net sales Net profits Orders Inventories Prices Employment Man-hours Capital expenditures: For modern production techniques or facilities For older production techniques or facilities For pollution control or occupational safety and health Other Capacity and net change in capacity Research and development expenditures Other actions to adjust and modernize Investments in activities other than steel

Importers

Total imports Prices Orders Inventories

Appendix C

Definition of Certain Terms, and Description of the Products Subject to the Investigation

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DEFINITIONS

1. <u>Firm</u>.--An individual proprietorship, partnership, joint venture, association, corporation (including all divisions, any subsidiary corporations, and parent corporations), business trust, cooperative, trustees in bankruptcy, or receivers under decree of any court, owning or controlling one or more establishments, as defined below.

2. <u>Establishment</u>.--Each plant of a firm in the United States in which carbon and/or alloy steel products (as defined below) are produced and all auxiliary facilities operated in conjunction with (whether or not physically separate from) such production facilities, e.g., warehouses, shipping facilities, and the like.

3. Steel industry .-- Producers in the United States of steel products.

4. <u>Net cash flow</u>.--Annual net (after-tax) income plus depreciation, depletion allowances, amortization, and changes in reserves minus dividends and payments on short-term and long-term debts and liabilities.

5. United States. -- The 50 states, Puerto Rico, and the District of Columbia.

6. <u>Steel</u>.--An alloy of iron and carbon which is malleable as first cast. Steel may contain other elements, but iron must predominate, by weight, over each of the other elements.

7. <u>Carbon steel</u>.--Steel in which none of the elements listed below exceeds the quantity, by weight, respectively indicated:

> 1.65 percent of manganese, or 0.25 percent of phosphorus, or 0.35 percent of sulphur, or 0.60 percent of silicon, or 0.60 percent of copper, or 0.30 percent of aluminum, or 0.20 percent of chromium, or 0.30 percent of cobalt, or 0.35 percent of lead, or 0.50 percent of nickel, or 0.30 percent of tungsten, or 0.10 percent of any other metallic element.

8. <u>Alloy steel</u>.--Steel which contains any of the elements listed in definition 5 (above) in excess of its specified quantity.

(i) <u>Stainless steel</u>.--Any alloy steel which contains by weight less than 1 percent of carbon and over 11.5 percent of chromium;

DEFINITIONS--Continued

Alloy steel -- Continued

(ii) <u>Tool steel</u>.--Alloy steel which contains the following combinations of elements in the quantity, by weight, respectively indicated:

(A) not less than 1.0 percent carbon and over 11.0 percent chromium, or

(B) not less than 0.85 percent carbon and 1.0 percent to 1.8 percent inclusive manganese; or

(C) 0.9 percent to 1.2 percent inclusive chromium and 0.9 percent to 1.4 percent inclusive molybdenum; or

(D) not less than 0.5 percent carbon and not less than 3.5 percent molybdenum; or

(E) not less than 0.5 percent carbon and not less than 5.5 percent tungsten; or

(F) not less than 0.3 percent carbon and 1.25 percent to 11.0 percent inclusive chromium.

(iii) <u>Certain alloy steel</u>.--Alloy steel not covered under 6. (i) "Stainless steel" or 6. (ii) "Tool Steel."

9. Galvanized .-- Steel which has been coated or plated with zinc.

10. <u>Hot-rolled</u>.--Steel which has been reduced to its final thickness by heating and rolling the product at elevated temperature (usually above $2,200^{\circ}$ F).

11. <u>Cold rolled</u>.--Steel which has been reduced to its final thickness by rolling the product without heating it immediately prior to the rolling operation.

12. <u>Continuous casting</u>.--The method of producing semifinished products in which molten steel flows evenly into a caster where it is rapidly cooled, causing it to solidify directly into semifinished products such as slabs and billets.

13. Short ton.--Two thousand (2,000) pounds.

FOR THE PURPOSES OF THIS QUESTIONNAIRE, DEFINITIONS 14 THROUGH 22 INCLUDE ONLY PRODUCTS OF CARBON STEEL OR CERTAIN ALLOY STEEL (AS DEFINED ABOVE). THESE PRODUCTS, INCLUSIVELY, ARE DEFINED AS <u>CARBON AND CERTAIN ALLOY STEEL</u> <u>PRODUCTS</u>.

Semifinished products include

14. (A) <u>Ingots.--Castings resulting</u> from the solidification of molten steel and having a columnar form suitable for working by rolling or forging. Ingots are included in American Iron and Steel Institute (AISI) product group No. 1A. (B) <u>Blooms and billets</u>.--Semifinished products generally of rectangular or circular cross section, having a length several times greater than the maximum cross-sectional dimension, and, if rectangular, a width less than 4 times the thickness. A bloom is at least 36 square inches but not less than 3 square inches in cross-sectional areas. Blooms and billets are included in AISI product group No. 1B.

(C) <u>Slabs and sheet bars</u>.--Semifinished products of rectangular cross section, having a width of at least 4 times the thickness. A slab is not less than 2 inches in thickness; a sheet bar is less than 2 inches in thickness. Slabs and sheet bars are included in AISI product group No. 1B.

For the purpose of this investigation, semifinished products are classified as follows:

(i) <u>Carbon and certain alloy semifinished products</u>, as provided for in items 606.6705, 606.6710, 606.6715, 606.6720, 606.6725, 606.6730, 606.6735, 606.6740, 606.6949, 606.6951, 606.6953, 606.6955, 606.6957, 606.6959, 606.6961, 606.6963, 607.6620, and 607.7803 of the <u>Tariff Schedules of the</u> United States Annotated (1987) (TSUSA).

(ii) <u>Stainless and alloy tool steel semifinished products</u>, as provided for in items 606.6901, 606.6902, 606.6904, 606.6905, 606.6906, 606.6909, 606.6912, 606.6915, 606.6918, 606.6921, 606.6923, 607.7210, and 607.7603 of the <u>TSUSA</u>.

15. <u>Sheets and strip</u>.--Flat rolled products whether or not corrugated or crimped, in coils or cut to length. Sheets are under 0.1875 inch in thickness and over 12 inches in width. Strip is under 0.1875 inch in thickness and, if cold rolled, over 0.50 inch but not over 12 inches in width, or, if not cold rolled, not over 12 inches in width. Sheets and strip are included in AISI product group Nos. 28, 29, 29A, 30, 31, 32, 33A, 33B, 34, 34B, 35, 36, and 37. For the purposes of this investigation, sheets and strip are classified as follows:

(i) <u>Hot-rolled carbon and alloy steel sheets and strip;</u> provided for in items 607.6710, 607.6720, 607.6730, 607.6740, 607.8100, 607.8342, 607.9205, 608.1920, 608.2120, and 608.2320 of the <u>TSUSA</u>.

(ii) <u>Cold-rolled carbon and alloy steel sheets and strip;</u> provided for in items 607.6200, 607.6400, 607.8350, 607.8355, 607.8360, 607.8362, 607.8366, 607.8375, 607.8378, 607.8380, 607.8385, 607.8390, 607.9210, 607.9315, 607.9320, 608.1930, 608.1940, 608.1945, 608.2130, 608.2140, 608.2145, 608.2150, 608.2160, 608.2170, 608.2330, 608.2340, 608.2345, 608.3810, 608.3820, 608.3900, 608.5510, 608.5520, 608.6710, and 608.6720 of the <u>TSUSA</u>.

(iii) <u>Galvanized carbon and alloy steel sheets and strip</u>; provided for in items 608.0730, 608.1305, 608.1310, 608.1315, 608.1320, 608.1321, 608.1325, 608.1330, 608.1331, and 608.1335 of the <u>TSUSA</u>.

(iv) <u>All other carbon and alloy steel sheets and strip;</u> provided for in items 607.9600, 607.9700, 607.9900, 608.0100, 608.1340, 608.1350, 608.1440, 609.1710, and 609.1790 of the <u>TSUSA</u>.

(v) <u>Stainless steel sheets and strip</u>; provided for in items 607.7610, 607.9010, 607.9020, 608.2600, 608.2900, 608.4300, and 608.5700 of the <u>TSUSA</u>.

DEFINITIONS--Continued

16. <u>Plates</u>.--Flat rolled products whether or not corrugated or crimped, in coils or cut to length. Plates are 0.1875 inch or more in thickness and, if not cold rolled, over 8 inches in width. Plates are included in AISI product group No. 6. For the purposes of this investigation, plates are classified as follows:

(i) <u>Carbon and certain alloy steel plate</u>; as provided for in items 607.6610, 607.6625, 607.7806, 607.8320, 607.9100, 607.9400, 608.0710, 608.1100, 608.1420, and 609.1400 and 609.1500 of the <u>TSUSA</u>.

(ii) <u>Stainless steel plate</u>; as provided for in items 607.7606 and 607.9005 of the <u>TSUSA</u>.

17. <u>Pipes and tubes and blanks therefor</u>.--Tubular products, including hollow bars and hollow billets but not including hollow drill steel, of any cross-sectional configuration, by whatever process made, whether seamless, brazed, or welded and whether with an open or lock seam or joint. For the purposes of this investigation, pipes and tubes and blanks therefor are classified as follows:

(i) <u>Oil country tubular goods</u>, conforming to American Petroleum Institute (API) specifications, as provided for in items 610.3216, 610.3219, 610.3233, 610.3249, 610.3252, 610.3256, 610.3258, 610.3264, 610.3721, 610.3722, 610.3925, 610.3935, 610.4025, 610.4035, 610.4210, 610.4220, 610.4230, 610.4240, 610.4310, 610.4320, 610.4335, 610.4942, 610.4944, 610.4946, 610.4954, 610.4957, 610.4968, 610.4969, 610.4970, 610.5221, 610.5222, 610.5226, 610.5240, 610.5242, 610.5243, 610.5244 of the <u>TSUSA</u>. Oil country tubular goods are included in AISI product group No. 19.

(ii) <u>Line pipe</u>, conforming to API specifications; as provided for in items 610.3208, 610.3209, 610.3212, 610.3213, 610.3711, 610.3712, 610.3713, 610.4931, 610.4933, 610.4936, 610.5211, 610.5214, and 610.5216. Line pipe is included in AISI product group No. 20.

(iii) Other carbon and alloy (excluding stainless) pipes and tubes, as provided for in items 610.3000, 610.3100, 610.3205, 610.3221, 610.3227, 610.3231, 610.3234, 610.3241, 610.3242, 610.3243, 610.3254, 610.3262, 610.3500, 610.3600, 610.3704, 610.3728, 610.3732, 610.3751, 610.3945, 610.3955, 610.4045, 610.4055, 610.4245, 610.4255, 610.4345, 610.4355, 610.4500, 610.4600, 610.4800, 610.4920, 610.4925, 610.4928, 610.4948, 610.4951, 610.4953, 610.4955, 610.4956, 610.4966, 610.4967, 610.4976, 610.5160, 610.5204, 610.5206, 610.5209, 610.5229, 610.5234, and 610.5236, of the <u>TSUSA</u>. Other carbon and alloy steel pipes and tubes are included in AISI product group Nos. 18, 21A, 21B, and 22.

(iv) <u>Stainless steel pipes and tubes</u>, welded or seamless, provided for in items 610.3701, 610.3727, 610.3731, 610.3741, 610.3742, 610.5130, 610.5202, 610.5230, and 610.5231. Stainless steel pipes and tubes are included in AISI product group Nos. 21C and 21D. 18. <u>Bars</u>.--Products of solid cross section not conforming completely to the respective specifications set forth in the TSUS for blooms, billets, slabs, sheet bars, wire rods, plates, sheets, strip, wire, rails, joint bars, or tie plates, and which have cross sections in the shape of circles, segments of circles, ovals, triangles, rectangles, hexagons, or octagons. Also, for the purposes of this investigation, the term "bars" includes hollow drill steel, which is a hollow product in any cross section suitable for use in making mining drills or mining drill rods, with the largest internal cross-sectional dimension not greater than one-third of the largest external cross-sectional dimension. For the purposes of this investigation, bars are classified as follows:

(i) <u>Hot finished carbon and certain alloy steel bars</u>; as provided for in items 606.8310, 606.8330, 606.8350, 606.8600, 606.9700, 607.0500, 607.0700, and 607.0900 of the <u>TSUSA</u>, and included in AISI product group No. 14.

(ii) <u>Cold finished carbon steel and certain alloy steel bars</u>; as provided for in items 606.8805, 606.8815, and 606.9900 of the <u>TSUSA</u>, and included in AISI product group No. 16.

(iii) <u>Reinforcing carbon and certain alloy steel bars</u>; which are hot-rolled steel bars, of solid cross section, having deformations of various patterns on their surfaces; as provided for in items 606.79 and 606.81 of the TSUS and included in AISI product group No. 15.

19. <u>Structural shapes and units</u> include the following articles:

(i) <u>Angles. shapes. and sections</u>. Nontubular products not conforming completely to the respective specifications set forth in the TSUS for blooms, billets, slabs, sheet bars, bars, wire rods, plates, sheets, strip, wire, rails, joint bars, or tie plates, hot rolled, forged, extruded, or drawn, or cold formed or cold finished, whether or not drilled, punched, or otherwise advanced, and if cold formed weighing over 0.29 pound per linear foot. Angles, shapes, and sections comprise:

(A) <u>Light structural shapes</u> (bar-size light shapes having a maximum cross-sectional dimension of less than 3 inches; as provided for in items 609.8050, 609.8070, 609.8090, 609.8235, and 609.8240 of the <u>TSUSA</u> and included in AISI product group No. 14A; and

(B) <u>Heavy structural shapes</u> having a maximum cross-sectional dimension of 3 inches or more; as provided for in items 609.8005, 609.8010, 609.8020, 609.8025, 609.8035, 609.8041, 609.8045, 609.8225, and 609.8230 of the <u>TSUSA</u> and included in AISI product group Nos. 4 and 5(pt.); and

(ii) <u>Sheet piling</u>.--Rolled straight web, deep-arch, arch-web, and Z-sections having continuous interlocking joints on each lengthwise edge; as provided for in items 609.96 and 609.98 of the TSUS. Sheet piling is included in AISI product group No. 5 (pt); and

(iii) <u>Fabricated structural units</u>, which include columns, pillars, posts, beams, girders, and similar structural units; as provided for in items 609.84, 609.86, 652.94, 652.96, and 653.00 of the TSUS. These columns, pillars, etc., are included in AISI product group No. 38.

20. <u>Rails and related railway products</u> as defined by the following:

(i) <u>Rails</u> are hot-rolled steel products, whether punched or not punched, weighing not less than 8 pounds per yard, with cross-sectional shapes intended for carrying wheel loads in railroad, railway, and crane runway applications; as provided for in items 610.2010, 610.2025, 610.2030, and 610.2100 of the <u>TSUSA</u>. Rails are included in AISI product group Nos. 7 and 8.

(ii) Joint bars are hot-rolled steel products, usually punched or slotted, designed to connect the ends of adjacent rails in track; <u>tie plates</u> are hot-rolled steel products which are punched to provide holes for spikes and have one or two shoulder sections as rail guides and are used to support rails in track, to maintain track gauge, and protect the ties; all the foregoing, as provided for in items 610.25 and 610.26 of the TSUS. Joint bars and tie plates are included in AISI product group Wos. 9 and 10.

(iii) <u>Railway track spikes</u>, of one piece construction, used to secure tie plates or ties; as provided for in item 646.3020 of the <u>TSUSA</u>. Railway track spikes are included in AISI product group No. 11.

(iv) <u>Railroad and railway (RR) axles and wheels, parts thereof, and</u> <u>axle bars</u>; as provided for in items 690.25 and 690.30 of the TSUS. These articles are included in AISI product group Hos. 12 and 13.

21. <u>Carbon and certain alloy wire rods</u>.--Coiled, semifinished, hot-rolled products of solid cross section, approximately round in cross section, not under 0.20 inch nor over 0.74 inch in diameter; as provided for in items 607.14, 607.17, 607.22, 607.23, 607.41, and 607.59 of the TSUS. Wire rods are included in AISI product group No. 3.

22. <u>Wire and wire products</u> are classified as follows:

(i) <u>Carbon and certain alloy wire</u>; a finished, drawn, nontubular product, of any cross-sectional configuration, in coils, and not over 0.703 inch in maximum cross-sectional dimension; the term includes a product of solid rectangular cross section, in coils, with a cold-rolled finish, and not over 0.25 inch thick and not over 0.50 inch wide. Wire is provided for in items 609.20, 609.21, 609.22, 609.25, 609.28, 609.35, 609.36, 609.37, 609.40, 609.41, 609.43, 609.70, 609.72, 609.75, and 609.76 of the TSUS, and item 609.3040, 609.3340, 609.4530, and 609.4560 of the <u>TSUSA</u>. Wire is included in AISI product group Nos. 23 and 27(pt.).

(ii) <u>Stainless steel wire</u>; as provided for in items 609.3020, 609.3320, 609.4502, 609.4504, 609.4542, and 609.4544 of the <u>TSUSA</u>. Stainless steel wire is included in AISI product group No. 23.

(iii) <u>Carbon and certain alloy wire products</u> as defined by the following:

(A) <u>Barbed wire</u> is a wire, or strand of twisted wires, armed with barbs or sharp points; as provided for in item 642.02 of the TSUS. Barbed wire is included in AISI product group No. 25(pt). (B) <u>Twisted barbless wire</u> is a wire strand of loosely twisted double wire, suitable for fencing purposes, not fitted with fittings, not made up into articles, and not covered with nonmetallic material; as provided for in item 642.1105 of the <u>TSUSA</u>. Twisted barbless wire is included in AISI product group No. 25(pt).

(C) <u>Wire strand</u> is two or more wires which together constitute one of the parts which are twisted together to form rope, cord, or cordage, not fitted with fittings, not made up into articles, not of brass plated wire, not covered with nonmetallic material, and not including twisted barbless wire; as provided for in items 642.1120, 642.1142, 642.1144, and 642.1146 of the TSUSA. Wire strand is included in AISI product group No. 23(pt).

(D) <u>Wire ropes, cables, and cordage</u> are products made by the twisting of a number of wire strands and are not covered with nonmetallic material, not fitted with fittings, not made up into articles, and, if valued 13 cents or more per pound, not of brass plated wire; as provided for in items 642.12 and 642.16 of the TSUS. Wire ropes, cables, and cordage are included in AISI product group No. 23(pt).

(E) <u>Wire fencing</u> is a galvanized product wholly of round wire measuring not over 0.20 inch and not under 0.075 inch in diameter, whether or not such wire is covered with plastics; as provided for in item 642.35 of the TSUS. Wire fencing is included in AISI product group Nos. 23(pt) and 26.

(F) <u>Brads. nails. spikes. staples. and tacks</u> are fasteners, of one piece construction, made of round wire, and not including thumb tacks, staples in strip form, corrugated fasteners, glaziers' points, hook nails, ring nails, or fasteners suitable for use in power-actuated hand tools; as provided for in items 646.25 and 646.26 of the TSUS. Brads, nails, spikes, staples, and tacks are included in AISI product group No. 24.

(G) Other wire products comprises: wire bale ties, with or without buckles or fastenings and whether or not costed with paint or other substance; as provided for in items 642.90 and 642.91 of the TSUS and included in AISI product group Ho. 27(pt); and milliners' wire and other wire covered with textile or other material not wholly of metal; as provided for in items 642.96 and 642.97 of the TSUS and included AISI product group Ho. 23. Appendix D

Statistical Tables, July 1, 1987-June 30, 1988

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Table D-1.--Certain carbon and alloy steel: U.S. producers' capacity, changes in capacity, production, and capacity utilization, July 1, 1987 -- June 30, 1988

•.	1	: Unanges in	•	t Capacity
itea	: Capacity	capacity 1/	Production	Utilization
	•		• • • • • • • • • • • • • • •	
		Short tons-		·:Percent
	:	1	:	:
Carbon and certain alloy steel: 2/	:	1	1	:
Cokemaking facilities	: 26,888,400	: ***	:22,946,243	i 8 5
Ironmaking facilities	: 63,076,800	: ***	149,445,718	: 78
Steelmaking facilities: 3/	1	:	1	:
Electric furnace	: 37.687.846	1	:31.534.272	: 84
Basic oxygen furnace	.: 63.759,225	1 ***	:55,469,139	: 87
Other furnaces	1 7.231.700	1 444	1 4.530.614	1 63
Total	108.678.771		+91.534.025	1 R4
Continuous rasting	+ A1.940.247	1 444	+54 035 3R4	, 97
Decinetes				· •
	1 D 174 08A			: . ED
Plates	1: 0,134,030	1 111	1 4,804,380	: 37
Sneets and strip:	:	•	:	:
HOT FOILED	: 37,529,500	: ***	:45,256,180	: /4
Cold rolled	1 33,516,000	: +++	124,504,343	: 73
Galvanized	.: 10,993,291	1 +++	11,517,507	: 105
Other	.: 7,587,100	: ***	: 6,238,247	: 82
Bars:	:	t	t	:
Hot finished	: 16,269,514	: +++	:11,517,868	: 71
Cold finished		1 +++	: ***	1 444
Reinforcing	: 3,748,608	: ***	: 2.934.535	: 7B
Wire rod	: 5.254.000	: ***	1 4.310.379	1 82
Nire	. 1.413.231		1 897.814	1 64
Nice anducts.	. R54.446		542.982	
Structural shapes and unite	• 6 T78 729		. 5 001 170	· PO
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Diane and Subara			1 7001714	· •0
ripes and cudes;	1 . 1 707 740		1	1 70
dit country tabular goods	.; I ₁ /03,/40	1 171	: 1,343,838	1 /1
Line pipe	.1 2,331,400	: ***	1 /36,913	: 32
	: 2,085,260	: ***	1,297,431	: 62
Certain stainless and	:	:	:	1
and alloy tool steel:	1	t	1	:
Steelmaking facilities: 3/	1	:	:	1
Electric furnace	.: 2,269,256	1 +++	: 1,699,051	: 75
Basic oxygen furnaceBasic oxygen furnace	.: 24,000	: +++	: 23,652	: 99
Other furnaces	.: 6,900	: +++	: 0	: 0
Total	: 2,300,156	: ***	: 1,722,703	: 75
Continuous casting	1,367,368	: ***	: 1.211.083	: 89
Stainless steel products:	1	:	1	1
Plates	.: 348.800	: ***	: 244.349	: 70
Sheets and strip	: 1.048.405	: ***	: 998.314	: 95
Vire.	37.350	1 444	30.700	82
Pines and tubes	28.300	1 444	18.789	: 4A
· · · · · · · · · · · · · · · · · · ·	1	• • • • • • • • • • • • • • • • • • •		

1/ Reported changes are likely to differ from changes in capacity calculated by company annual averages, due partly to the fact that reported capacity "averages in" the effect of closures or additions over the reporting period.

2/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

3/ Including semifinished steel.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table D-2.--Certain carbon and alloy steel: U.S. producers' shipments, unfilled orders, and inventories, and U.S. importers' imports, unfilled orders, and inventories, July 1, 1987 --- June 30, 1988

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	U.S.	Producers			t U.S. leporters							
rolect i	Shipe Duantity	Hats :	: Unfilled :	i laven-	: Ratio of i inventories : i to enfilled :	lap	orts Value	: : : Unfilled : order: 1/	I I I Inven-	t Ratio of inventories to unfilled		
	mantry					wantsty				1. UT GET 3		
1	(short tans)	r (1,000 r r dollars) r	i Short too) 	l 1	(short tons)	(L,000) dollars)	ı ıShort	tons	1		
Carbon and certain alloy steels 2/ a		1 1		1				1	1	1		
Senifinished	2,878,756	638,717	304,790 1	3/	1	868.577	241,425	22,074	: 40.307	1 1.83		
Plates	4,812,557	2,237,239	701,019 1	193,257	0.28 1	328,192	149,175 :	1 48,922	1 23,632	1 0.48		
Sheets and strips 2			i i	1 .				•	1	:		
Hot relied	14,756,573	5,166,696 :	1,843,166	1,380,435	0.75 1	934,671	353,218	ı 64 ,5 83	1 63,984	1 0.99		
Cold rolled	11,558,302	5,433,844	1,924,156 :	1,589,574	. 0.83 i	1,075,059	607,216	149,791	1 51,832	: 0.35		
Galvanized	7,595,947	4,686,386	1,449,075 1	997,122	. 0.67 1	1,145,097	739,709	171,454	1 63,794	ı 0.37		
Other	5,645,377	3,415,389 (1,078,727 #	773,442	ı 0.72 ı	138,437	102,375	: 34,385	1 1,332	1 0.04		
: Subtotal, sheets and strip:	39,556,199	18,702,315	6,295,124	4,740,573	0.75 i	3,313,264	1,802,518	420,213	1 180,942	1 0.43		
1	******		1						1	1		
Sers: I	0 070 301		1 774 747	7/8 403				1	1	1		
NOT 11015020	9,0/9,/81	3,443,308 1	1,330,305 1	/80148/	I V.30 I	122,920	0/,103	1 25,741	1 /,062	1 0.2/		
	***			***		66,298	33,317	1 3,168	\$ 6,383	1 2.01		
K@INtorClag	•••	•••• 	***)	•••	· ·····	118,382	31,999	t 183	1 /,9/1	1 43.0Y		
Subtotal, bars	12,395,219	4,541,261	2,009,610 :	983,505	0.49	307,800	132,679	29,094	21,416	0.74		
Wire rod	3,383,516	1,088,978	239,243	171.884	0.72	361.700	154,599	67.030	2.917	1 0.04		
Wire	398,290	219.095	44.812	35.810	0.80 :	85.011	70.871	10.508	1 3.806	: 0.36		
Wire products	535,900	319,854	53,375 :	28,683	0.54 :	186.162	130,810	5,240	13.640	1 2.60		
Structural shapes and units	5,135,353	1,930,496 1	874,129 :	399,139	0.46 1	784,180	321,172	164,011	17,249	: 0.11		
Rails and related products	556,767	279,693	151,680 :	40,935	0.27 1	125,721	59,457 :	1 53,586	1 162	1 0.00		
Pipes and tubes: 1	1		· · ·					1	F	1		
Oil country tubular goods	1,282,148	987,316 1	114,598 1	122,296	1.07 :	1,091,192	321,687	94,911	1 54.368	1 0.57		
Line pipe	470,294	260,692 1	49,377 1	36,895	0.75 1	157,688	1 85,164 :	1 86,783	1 8,933	: 0.10		
Other	1,418,405	1,013,296 1	163,383 1	162,746	1.00 1	606,195	334,011 :	1 98,615	1 43,003	1 0.44		
: Subtotel, pipes and tubes:	3,170,847	2,261,304	327,358 1	321,937	i 0.98 i	1,857,075	740,862	280,309	: 106,304	: 0.3B		
Tabal mashes and sambals									1			
alloy steel	72,843,604	i 32,418,952 i	11,001,140 i	6,915,723	0.63 1	9,217,682	: 3, 0 03,568	1 1 1,100,987	1 1 410,375	1 1 0.37		
Fentain staining and			1						1			
			1					1	1	1		
alloy TOOJ STOPII I	148 978		18.494	•						1		
Stainless steel:	163,3/3	1 337 ₁ 724 1 1	10,631 1	i 3/ i	· · ·	/,367	1 14,216	i 1,330	1 7,325	1 - 1		
Flates	223,769	436,760 1	• • • • • •	16,980	0.46 1	4,566	10,261	1,363	1 215	1 0.16		
DREWES AND SURIP	78/,8/4	1,737,731 1	213,704 1	13/,/93	U.64 1	40,214	113,079	1 40 ₁ /27	1 17,160	1 0.47		
WIFE	31,869	1 113,994 1	12,597 1	5,213	0.41	4,036	12,079	1 /48	1 187	1 0.25		
ГАРФБ АПФ СЦОФБ	20,487	/¥,612 (*** 1	4,/02	· 1.10 /	16,335 :	633,779	i 4,450	1 4,605	1 I.03		
Total, certain stainless :								•	:	1		
and alloy tool steel	1,429,774	2,948,041	282,961 1	164,689	0.58 i	72,540	783,414	48,438	31,492	0.65		
a Grand totals	74,273,378	35,366.993	11,284.101 1	7,080,411		8,290.222	4,586.982	1.149.625	441.867	t 0.38		
									1	1		

1/ As of June 30, 1987.

D-3

Table D-3.—Certain carbon and alloy steel: U.S. imports, by product, June 1984—May 1985, June 1985—May 1986, June 1986—May 1987, $\underline{1}$ / and June 1987—May 1988

(In tons)			
	Quantity			
	June 1984-	June 1985-	June 1986-	June 1987-
Item	May 1985	May 1986	May 1987	May 1988
Carbon and certain allow steel products: 2/				
Semifinished 3/	1,668,223	2,366,861	2,326,428	2,373,135
Plates	2,184,608	1,549,783	1,409,299	1,750,191
Sheets and strip:				
Hot rolled	2,618,281	2,226,887	2,174,590	2,198,503
Cold rolled	3,752,841	3,012,696	2,741,541	2,580,686
Galvanized	2,683,568	2,362,806	2,319,321	2,273,218
Other	734,537	687,548	764,638	666,001
Subtotal, sheets and strip	9,789,227	8,289,937	8,000,090	7,718,408
Bars:	•	•		
Hot finished	714,691	550,865	607,491	610,051
Cold finished	336,602	236,747	200, 523	195,921
Reinforcing	423,139	409,912	449,546	306,265
Subtotal, bars	1,474,432	1,197,524	1,257,560	1,112,237
Wire rod	1,514,956	1,353,358	1,367,484	1,501,842
Wire	648,958	580,344	554,236	531.351
Wire products	707,691	646,600	649,583	609,491
Structural shapes and units	2,542,995	2,447,664	2,366,188	2,235,382
Rails and related railway products	388.816	344,443	237.837	263,621
Pipes and tubes:				
Oil country tubular goods	3,259,050	1,294,432	459,446	1,369,324
Line pipe	1,034,175	1,072,356	530,123	503,774
Other	1,061,601	1,645,554	1,357,292	1,558,816
Subtotal, pipes and tubes	5,354,826	4,012,342	2,346,861	3,131,614
Total, carbon and certain allow steel	26,274,732	22,788,856	20,515,566	21,227,272
Certain stainless and alloy tool steel:				
Semifinished	12,790	23,144	46,965	55,518
Stainless steel:				
Plates	9,145	18,273	10,502	12,856
Sheets and strip	123,963	177,845	128,143	121,553
Wire	25.068	18,900	18,647	18,776
Pipes and tubes	29.010	36.652	28.090	32,940
Total. certain stainless and allow				
tool steel	199.976	274.814	232.347	241,643
Grand total	26.474.708	23,063,670	20,747,913	21,468.915
		,_,_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,	,,

1/ Because of a lag in reporting, official import statistics include some "carry-over" data for merchandise imported, but not reported, in prior periods (usually the previous month). Beginning in 1987, Commerce extended its monthly data compilation cutoff date by about 2 weeks in order to significantly reduce the amount of carry-over. Therefore, official statistics for January 1987 include data that would previously have been carried over to February 1987. However, in order to avoid an apparent overstatement of the January 1987 data, the carry-over data from 1986 that would have been included in January 1987 official statistics as of the previous cutoff date have been excluded. Commerce isolated these 1986 carry-over data and has not included them in official statistics for 1986 or January 1987, since their inclusion in either period would result in an apparent overstatement. With respect to imports of certain carbon and alloy steel, this carry-over amounted to 509,802 tons.

 $\underline{2}$ / Certain alloy steel refers to alloy steel other than stainless and alloy tool steel. $\underline{3}$ / Imports of semifinished tool steel were not specifically provided for in the TSUSA prior to April 1985. Imports prior to April are recorded under the carbon and certain alloy steel category.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table D-4.--Average number of production and related workers employed in U.S. establishments producing certain carbon and alloy steel and hours worked by, wages paid to, and productivity of such employees, July 1, 1987 -- June 30, 1988

: AV Item : n : em	erage : ueber :	: Han-hours	i Produr- i	Hanna	SUNIT NOWLY
	ployed		: tivity	wagen	: labor : costs
	•••••••		 /asa-houre	/1 000	
• •	;	(Thousands)	: per ton) :	dollars)	1
Farbon and certain allow step1: 1/			• •		•
Cokenaking facilities	10.035	21.204	0.92	323.492	\$15.26
Ironmakinn facilities	9.591	20,340	1 0.41 1	327,303	: 16.09
Stoniesking facilities 2/	35.903	76.609	: 0.84 :	1,193,188	: 15.58
Products:		1	1		1
Plates	4,520	9,738	: 2.03 :	148,026	: 15.20
Sheets and strip: 3	• •		•	•	1
Hat rolled	17,805	37,157	: 0.82 :	589,308	15.86
Cold rolled	20,226	42,099	: 1.72 :	684,002	: 16.25
Galvanized	7,168	14,745	: 1.28	244,522	: 16.58
Other	8,814	17,794	: 2.85 :	297,262	16.71
1		····			
Subtotal, sheets and strip	54,013	: 111,795	1 · 3/ 1	1,815,094	: 16.24
Barsi			• • • •	1	1
Hot finished	11.891	24,977	2.17	345,233	: 13.82
Gold finished	444		1 444 1	***	: +++
Reinforcing	***		. +++ I		: ***
			;; ;;		
Subtotal, bars	15,457	: <u>52,</u> 59/	:	444,642	t 13./3 :
Wire rod	2,204	. 4,151	. 0.96 :	73,756	17.77
Wire	1,455	2,884	: 3.21	42,087	: 14.59
Wire products	1,235	2,473	: 4.55 i	34,319	: 13.88
Structural shapes and units	5,174	11,054	: 2.17 :	160,339	: 14.51
Rails and related products	687	1,445	: 2.46 :	18,930	: 13.10
Pipes and tubes:	{		: 1	1	:
Oil country tubular goods	2,212	4,229	: 3.15	56,651	: 13.40
Line pipe	1,670	2,341	: 3.18 :	33,471	: . 14.30
Othert	4,196	7,259	: 5.59 :	106,617	: 14.69
 Subtotal, pipes and tubes:	8,078	13,829	3/ 1	196,739	: 14.23
: Total. carbon and certain alloy steel:	148.352	307.919	: : 3/ :	4.778.115	: 15.52
			;		**********
Certain stainless and alloy tool steel: 👘 🕴	ſ	1	; ;		1
Steelmaking facilities 2/	4,846	: 10,493	: 6.09 :	170,682	16.27
Stainless steel products:	1	:	: 1	۰. ۱	: .
P] ates	1,379	3,170	: 12.97 :	51,749	16.32
Sheets and strip	4,967	: 10,233	: 10.25	185,116	: 18.09
Wire	638 :	1,424	: 46.38 (20,590	i 14,46,
Pipes and tubes	229	: 718	: 38.21	8,757	12.20
Total, stainless and alloy tool steelt	12,166	: 26,038	I 3/ 3	436,894	: 16.78
12322	*******	223203222333 	;===========; , , , , , , , , , , , , , , , , , , ,	5 215 AAD	1=====================================
Grand total	190,218	: 322,421	1 9/ 1	altrates	

2/ Including semifinished steel.

3/ Not applicable.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade

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Table D-5.--Certain carbon and alloy steel: U.S. producers' capital expenditures, by types of expenditures, and research and development expenditures, July 1, 1987 -- June 30, 1989

•			(în thou	sands of dollars	s)				
·····	. <i></i>	•••••	· · · · · · · · · · · · · · · · · · ·	Capital expend	itures	••••••	• • • • • • • • • • • • • • • • •	•••••	**************************************
	1 1	 1	For plani	t and equipment		t i			t 1
Itee	t Land t and t land t land t laprove-	t t s For now : facilities	For existing	ing facilities : Placed in :	Total	: For : pollution : control or : occupational: safety and : bealth :	: : : : : :	: : : : Total 1/ :	: Research : and :developsent :expenditures :
		: !	June 30, 1986	to Jan 1, 1981			 	! !	1 1
Carbon and mentain allow stepls 2/	1	8		l	1	l 1	1	I .	\$
Cokenaking facilities	· - ·			• •				: 39,271	; +++
Ironmaking facilities	: -	; -	• - I	i - .:	I - I	1 - 1	- -	299,078	: ***
Steelmaking facilities 3/ Productor	; 444	t 111	1 444 1	***	; *** ;	: +++ : 	1 444	: 537,407	: 44,323
Plates		1 444	+++					19,976	: 4,693
Showts and strips	ı		r i		I	i a	i ,	:	1
Hat ralled	: 499	1 - 444	1 100 1	: +++ :	1 111 -	1 +++ 1	: +++	: 154,503	: 7,327
Cold rolled	1 400				***		444	106,788	14,080
0ther		1 444	· • • • • •	***	444	1 477 1 1 AAA 1	; 444 . 444	1 3¥1/4/ 1 29.171	2 13,3/4
	1							· · · · · · · · · · · · · · · · · · ·	1
Subtotal, showts and strip.	714	: 68,993	3,586	252,796	325,375	22,437	703	349,411	49,096
Bars:	1	ŧ .		I	I i	1			;
Hot finished	1 444	1 444 1	: *** 1	; +++ ;		1 444 1	+++	74,194	1 3,175
Cold finished	: ***	; +++			444	***	***	2,596	: ***
KB10+0rC10g	; +++				***	· ••••		22,828	: •••
Subtotal, bars	3,343	50,484	12,560	31,380	94,424	1,427	222	99,416	4,397
Wire rod			+++ 1		+++		111	32,552	703
Wire	: ***	: *** :	; +++ ;	; *** ;	: *** :	1 555 1	, 111	3,816	: 186
Wire products	: ***	1 444					***	: 4,431	: 20
Structural shapes and units				••••			400	48,985	2 444
Pines and fulless		414		444	444		444	1 21314	
Oil country tubular goods			444 1	144		+++	+++	2,000	
Line pipe	1. 484	2 888 3						: 17,050	: ***
Other	1 444		: +++ 1	r +++ i	***	: +++ ;	; +++ ;	12,671	s 1,978
Subtotal, pipes and tubes		; ###	3,117	5,248	25,222	B07 :	611	31,721	; 2,401
Total, carbos and certain	; ;								1
alloy steel	10,162	448,676	75,205	531,293	1,055,174	63,290	2,263	: 1,448,378	: 113,092
Certain stainless and	1				I I	· ·			1
alloy tool steels								1 77 414	\$ • • • • • • • •
Stainless steel products:	1 1 	1 454						i 10,010 i , 7,005	: 0,203 :
Sheets and strin		444	+++	+++	100		+++	32.071	7.212
Wif P		***			***			6,245	: +++
Pipes and tubes	: ***	: +++		***	+++			1,387	: 121
Subtotal, certain stainless and alloy tool steel	: : 1,134	15,824	7,890	33,145	56,849	3,169	985	67,224	: : 15,341
Grand total	11.294	464.500	83.085	564.438	1.112.023	66.459	3,248	1.535.602	: 128,433
									1

Including nomitemized expenditores.
Certain alloy refers to alloy steel other than stainless and alloy tool steel.
Including semifinished steel.

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Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

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Table D-6.--Certain carbon and alloy staels Income-and-loss data from U.S. operations, by product, July 1, 1987 -- June 30, 1988

	(In thousands of dollars)							
Itee	: Total net : : sales 1/ :	Net profit or (loss) before taxes 2/	Net profit or (loss) as a percentage of sales					
Carbon and contain allow stople 3/	:	 	! • • • • • • • • • • • • • • • • • • •					
Seel finished.	1 - 1,176,191	(57.652)	(4.9)					
Platek	2.284.532	246,801	10.8					
Sheets and string	•••••••••••••••••••••••••••••••••••••••							
Hot rollad	5.757.255	329.824	5.7					
	5.775.598	488.913	8.5					
Rel vani zed.	4,890,892	597.963	12.2					
Other	3,845,961	318,874	8.3					
Subtotal, sheets and strip	20,269,706	1,735,576	9.6					
Barsi								
Hat finished	3.177.208	· (25.954)	(0.8)					
Cold finished	350.587	(6.723)	(1.9)					
Reinforring	1.201.032	59.505	3.0					
Subtotal, bars	4,728,827	26,826	0.6					
Vire ród	1.133.374	32.215	2.0					
Wire	218.240	(1.514)	(0.7)					
Wire products	322.512	2.411	0.8					
Structural shapes and units	1.982.844	161.254	8.1					
Rails and related products	282.875	(15,175)	(5.4)					
Piece and tubes:								
Ail country tubular south	1.149.148	114.747	10.0					
	253.423	19.118	7.5					
Ather	1.174.745	59.747	5.0					
Subtotal, pipes and tube	2,577,536	193,112	7.5					
Total, carbon and cortain			, ,					
alloy steel	34,978,659	2,324,054	6.6					
Certain stainless and 👘 🕾 👘			, 					
alloy tool steels	r' a		1					
Seni fini skod	294,754	19,353	i 6.6					
Stainless steels		, , , , , , , , , , , , , , , , , , ,	I					
Plates	392.863	34.071	8.7					
Shoets and strip	2,000.747	294.774	14.7					
W/P	114.025	7.234	6.3					
Piges and tubes	79.612	1.034	1.3					
	······		*****					
Subtotal, certain stainless	1 1) •						
and alloy tool steel	2,882,001	356,460	12.4					
erand total	37,840,440	2,580,522	7.1					

1/ Includes intracoopeny and intercoopeny transfers, less discounts, returns, and allowances.

2/ Net profit is defined as the total net sales, less the cost of goods sold, general, selling and administrative expenses, and other expenses (such

as not interest expense (or income)).

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3/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

Source: Compiled from data estimated in response to questionnaires of the U.S. International Trade Commission.

Table D-7.--Certain carbon and alloy steels Financial experience of U.S. producers, July 1, 1987 - June 30, 1988

(In thousands of goilars)									
Iten I	All carbon and certain alloy 1/ steel products subject to the investigation 2/	r All stainless and i r alloy tool steel i products subject to i t the investigation 2/ r	Total 2/						
NET SALES:	••••••••••	······································							
Excludion intraconnany and		1 1							
intercomment transfers	33.496.170	2.830.388 1	36.326.558						
Intracognagy and intercognagy a		1 1							
transfers	2,180,978	104,422 1	2,285,400						
Total net sales	35, 677, 058	1 2,934,810 1	38,411,868						
COST OF GOODS SOLD (including :		1 1	• •						
intracompany and intercompany a		1 j 1							
transfers):		1 1	1						
Raw Haterials	7,993,678	1 778,143 1	8,771,821						
Direct labor	4,378,979	1 251,099 1	4,630,078						
Other factory costs, including I		1							
depreciation and amortization	7,768,858	1 571,102 1	8,340,040						
Total cost of goods sold 3/	31, 512, 647	: 2,409,757 :	33,922,404						
GROSS PROFIT OR (LOSS)	4,164,411	1 525,053 :	4,687,464						
GENERAL, SELLING, AND ADMINI- :		1 1							
STRATIVE EXPENSES	1,334,424	1 132,408 :	1,466,832						
NET OPERATING PROFIT OR (LOSS)	2,829,987	392,646 :	3,222,633						
OTHER INCOME OR (EXPENSE): 1		1							
Net interest income :	i	1 1							
or expense	(557,684)	: (25,871):	(583,555)						
All other income or (expense)	18,232	1 (8,850) 1	9,374						
Total other income a	• •	1 1							
or expense 4/	(527,028)	t (34,729) t	(561,757)						
NET PROFIT OR (LOSS) BEFORE TAXES	2,285,899	1 357,917 1	2,643,815						
Depreciation and amortization	1,773,957	z 47,165 z	1,823,122						

1/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

2/ Certain respondents included financial information on related products.

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3/ Including monitorized costs.

4/ Including nonitonized expenses.

Sources Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

(In thousands of dollars)

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Table D8.--Certain carbon and alloy steel: Weighted average net prices for the three largest sales by product, by specified period, July 1987 -- June 1988

					(Pe	r ton)	-		
	 1	*******	• • • • • • • • • • • • • • •	Wei	ighted aver	age net price	*******	•••••	•••••
		U.S. producers t					U.S. i	eporters	
riddall 27	1 1987		r 1988 r			1997		1988	
	: July- : : September :	October- December	z January- z Harch	1	April- June	: July- : : September :	October- : December :	January- : Narch :	April- June
•••••••••••••••••	!! !	•••••	! !	. I I		: :		••••••••••••••••••••••••••••••••••••••	•••••
Carbon and certain allow steels 3/			1	1		; 1	1	1	
Senifinished	\$227.84 1	\$225,45	\$237.34	1	\$258.15	: \$246.24 I	\$244.08 :	\$270.95 :	\$277.19
Plates	393.55 1	396.40	1 420.43	1	463.20	442.01 :	470.63 :	479.97 :	402.50
Sheets and strip:	1 1		1	1			1	1	
Hot rolled	314.40 1	322.72	350.27	1	364.34	358.85 :	394.45 :	386.32 :	404.09
Cold rolled	426.54 :	435.45	447.76	1	446.88	457.20	472.09 :	487.08 :	503.77
Galvanized	554.53 a	558.55	: 571.95	1	582.70	543.75	537.19 1	558.70 :	566.62
Other	: 645.64 ;	671.72	1 697.67	1	680.39	1 786.99 1	1293.74	1132.65 :	858.82
Barsi	1 1		1	1		1 1	1	1	
Hot finished	341.31 1	362.77	1 392.26	1	404.70	1 503.71 1	450.05 :	437.82 :	449.89
Cold finished	1 444 1	+++	:	1	464	443.33 1	468.42 1	488.40 :	473.89
Reinforcing	261.48	287.71	302.05	1	317.09	290.98	297.00 :	307.86 :	339.56
Wire rod.	268.71 1	281.09	303.04		317.90	285.95 1	331.90 ±	318.47 :	332.20
Wire	543.33 :	630.07	: 567.95	1	587.78	716.44 :	857.51 :	847.40 :	971.53
Wire products	1 444 1	414	1 444	1	444	1 +++ 1	444 1		444
Structural shapes and units	336.28 :	364.52	1 400.7B	1	441.14	424.60	321.19 :	354.08 :	432.45
Rails and related products	403.77 1	418.45	1 445.28	1	440.24	1 +++ 1	444 1	*** :	***
Pipes and tubes:	1 1		1	1			I		
Dil country tubular goods	767.61 1	785,12	. 835.00	1	857.09	421.62 1	518.48 1	562.71 :	576.15
Line pipe	502.79 :	489.00	467.23		480.48	451.78	465.21 :	463.18 :	481.90
Dther	. 0.00 1	0.00	1 0.00	1	0.00	: 596.57 :	611.55 :	645.99 1	656.11
Certain stainless and allow tool steel:	l 1		1			1 1	1	1	
Seeifinished	1458.33	1525.00	. 1750.00	;	2491.80	2 0.00 1	0.00 :	0.00 :	0.00
Stainless steel:	1 1		1	;		· · · · ·			••••
Plates.	1953.2R	2007.15	1 2371-17		2115.47	1902.91	2044.69	2295.30	2950.00
Sheets and strip	1748.15 1	1816.74	1997.14	ī	2351.01	1665.90	1715.93 1	1747.09 :	1891.74
Nire	3538.46 1	2714.28	3125.00	i	5999.94	0.00 1	0.00 1	0.00 ±	0.00
Pipes and tubes	: +++ ;	***	1 +++	1	***	2896.91	3076.06 :	3410.66 1	3197.10

1/ Prices are net of all discounts and allowances (including freight allowances) and excluding U.S. inland freight. Producers' prices are

f.o.b. mill; importers' prices are f.o.b. warehouse, or, if shipped directly to customs, c.i.f., ex-dock, port of entry, duty paid.

Prices represent the total industry value of reported sales divided by the total quantity sold, based on the 3 largest sales of each firm. 2/ See Appendix E for decription of products.

3/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

4/ No data reported.

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Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Appendix E

Specifications of the Products Referenced in Pricing Section

The products identified below are those used by the Commission to collect pricing information in its questionnaires.

Semifinished

<u>Product</u> 1.--Carbon steel slabs for drawing applications, AISI 1008 rimmed steel or AISI 1008 aluminum killed, fine grain, 6 inches-10 inches thick, 30 inches-80 inches wide, 20 feet to 40 feet long.

Product 2.--Stainless steel billets, Grade 304, round cornered square, 8 inches by 8 inches.

Sheets and strip

<u>Product</u> 3.--Hot-rolled carbon steel bands, in coils, mill edge, commercial quality, 0.25 percent carbon maximum, not pickled, 0.1210 inches through 0.1875 inch in thickness, over 36 inches through 72 inches in width.

Product 4.--Cold-rolled carbon steel sheets, in coils, commercial quality, class 1, 0.0280 inch through 0.0630 inch in thickness, 45 inches through 60 inches in width.

<u>Product</u> 5.--Galvanized carbon steel sheet, in coils, commercial or lock forming quality, G-40 coating, regular or minimum spangle, 0.028 inch through 0.035 inch in thickness, 24 inches through 72 inches in width.

Product 6.--Electrolytic tin plate, S.R. 80-lb., .25 coating.

<u>Product</u> 7.--Stainless steel cold-rolled sheets, AISI grade 304, 2B finish, 16 gauge in thickness, 36" (914 mm) exact through 48" (1,218 mm) exact in width, and coiled.

Plate

<u>Product</u> 8.--Hot-rolled carbon steel plate, in cut lengths, A-36 or equivalent, sheared edge, not heat treated, not cleaned or oiled, 3/8 inch to under 1/2 inch in thickness, over 90 inches through 100 inches in width.

<u>Product</u> 9.--Stainless steel plate, HRAP, AISI grade 304, 1/4" (6 mm) thick, 72" (1,827 mm) exact through 96" (2,437 mm) exact in width X 240" (6,091 mm) to 290" (7,360 mm) long, cut to length.

SECTION D. -- PRICES -- Continued

Pipes and tubes

<u>Product</u> 10.--Oil-country tubular goods, API 5A, Grade K-55, 7 inches outside diameter, 0.317 inch wall thickness, 23 pounds per foot, PE.

Product 11.--Line pipe, API 5L, Grade X42, 8-5/8 inches outside diameter, 0.322 wall thickness, 28.55 pounds per foot.

<u>Product</u> 12.--Round fence tubing, light wall, galvanized, 1.315 inch outside diameter.

<u>Product</u> 13.--Stainless steel pipe, Grade 304, 1-1/2 inches-4 inches outside diameter, 1/8 inch-3/4 inch wall thickness.

Bars

<u>Product</u> 14.--Hot-rolled carbon steel, bars, in cut lengths or coils, 1/2 inch through 6-1/8 inches in diameter/thickness, all shapes except flats, 1000 series, not thermal treated.

<u>Product</u> 15.---Cold-formed carbon steel bars, in cut lengths or coils, 1/2 inch through 6 inches in diameter/thickness, all shapes including flats, 1000 series, not thermal treated.

Product 16 .-- Deformed reinforcing bars, ASTM 615, Grade No. 40.

Structural shapes and units

<u>Product</u> 17.--Wide-flange carbon steel beams, A-36 or equivalent, 8 inches by 8 inches, 31 through 67 pounds per foot, 40 through 60 feet in length, item order of 5 tons and over.

Rails and related railway products

<u>Product</u> 18.--Carbon steel rails, standard quality, 39 feet in length, 115 lbs. through 140 lbs. per yard.

Wire rods

<u>Product</u> 19.--Hot-rolled carbon steel wire rod, in coils, standard quality, AISI specifications C-1008 through C-1022, 7/32 inch in diameter.

PRICES--Continued

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Wire and wire products

Product 20.--Galvanized wire, 12 gauge, soft industrial quality.

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Product 21.--Cold-drawn stainless steel round wire, Grade 304, 1/8 inch in diameter.

Product 22.--Steel wire rope, IPS, 5/8 inch, 6 x 19, IWRC.

Appendix F

Description of Actions Taken by the Steel Industry to Adjust and Modernize

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(Pages F-2 to F-19 contain information entitled to confidential treatment and have not been published.)

Appendix G

Description of actions taken by major companies to maintain international competitiveness

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(Pages G-2 to G-30 contain information entitled to confidential treatment and have not been published.)
Appendix H Final Statisical Tables, July 1, 1987-June 30, 1988 Table H1.--Certain carbon and alloy steel: Weighted average net prices for the three largest sales shipped by U.S. producers and importers, of selected products, by specified period 1/

						(P)	er	ton)					
	********	••••		We	ighted avera	ige net pric	e	•••••	••			· • • •	
Product 2/		U.	S. produce	rs	: ; ;		 ι	.S. importe	•• 97 s	:: : :	prices to i prices to i	, 5. i opi 6	producer prters
:	July- September 1985	· · · · · · · · · · · · · · · · · · ·	April- June 1987	:	: Percent : Change :	July- September 1985	•••• • •	April- June 1987	•	: Percent : Change :	July- September 1985	: : :	April- June 1987
:		;		1	:		•••	*****	::.		• • • • • • • • • • • • •	:	, .
Carbon and certain alloy steel: 3/ :		1		:	:		:		:	:		:	
Plates	347.31	t	367.83	:	5.9%:	330.43	:	395.25	:	19.62:	105.1	:	93.1
Sheets and strip: :		:		:	:		:		:			:	
Hot rolled	313.58	1	295.69	:	-5.7%	329.67	:	344.78	:	4.6%:	95.1	:	a5.a
Galvanized:	528.70	1	544.46	:	3.0%:	556.30	:	564.02	:	1.4%	95.0	:	96.5
Bars: :		:		:	:		;		:	:		:	
Hot finished	305.02	1	328.17	:	7.6%	278.25	:	454.01	:	63.22:	109.6	:	72.3
Reinforcing	284.76	1	262.74	:	-7.71:	248.33	:	271.41	:	9.32:	114.7	:	95.3
Wire rod	279.06	1	276.75	t	-0.8%	290.52	:	314.04	:	8.12:	96.1	:	88.1
Structural shapes and units	325.48	1	339.83		4,4%	338.32	:	410.44	:	21.32:	96.2	:	92.8
Rails and related products	368.36	:	***	:	***	433.56	;	***		***	85.0	:	***
Pipes and tubes: :		:		:	:		:		:	:	_	:	
Oil country tubular goods	***	:	***	:	0.61:	516.53	;	764.43	:	48.0Z	141.8	:	96.4
Line pipe	452.86	:	***	:	***	595.06	:	426.16	:	-28.4%:	76.1	:	105.8
Certain stainless and alloy tool steels :	1	1		:	:		:		:	:		:	
Plates	2364.02	1	1850.90	;	-21.7%	2370.37	:	1925.00	;	-18.82:	99.7	;	96.2
Sheets and strip	1614.57	1	1690.43	1	4.7%	1695.32	:	1770.99	:	4.5%:	95.2	:	95.5
Wire	4499.99	:	3000.00	1	-33.3%	4/	:	4/	:	4/ :	4/	:	4/
Pipes and tubes	***	•	***	:	18.27:	1072.08	:	3119.76	:	191.02:	276.2	:	112.2

1/ Prices are net of all discounts and allowances (including freight allowances) and excluding U.S. inland freight. Producers' prices are f.o.b. mill; importers' prices are f.o.b. warehouse, or, if shipped directly to customs, c.i.f., ex-dock, port of entry, duty paid. Prices represent the total industry value of reported sales divided by the total quantity sold, based on the 3 largest sales of each fire. 2/ See Appendix E for decription of products.

3/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

4/ No data reported.

Table H-2.--Certain carbon and alloy steel: Weighted average net prices for the three largest sales by product, by specified period, July 1987 -- June 1988

				(Pe	er ton)			
	• • • • • • • • • • • • • • • • • • •	•••••		ighted aver	age net price		••••••	
	I	U.S. proc	lucers		:	U.S. i	aporters	
Product 2/	: ; 1'	78 6 1	198	 17	: 19	9 6 :		37
							•••••	
	: July- : September	: October- : : December :	i January- i i Narch i	April- June	: July- : :September :	October- : December :	January- : March :	April- June
	!	! !		••••••	11 1	••••••••••••••••••••••••••••••••••••••		
Carbon and certain alloy steel: 3/	• •	r i			1 1	:	:	
Semifinished	: \$255.26	: \$279.23	\$302.97 :	\$268.38	: \$214.20 :	***:;;	\$202.44 :	\$213.01
Plates	: 352.49	352.81	: 358.63 :	367.83	: 331.25 :	346.82 :	356.95 :	395.25
Sheets and strip:	:	:	i. i		: :	:	:	
Hot rolled	: 286.29	: 283.74 :	: 289.42 :	295.69	: 316.80 :	323.26 :	328.76 :	344.78
Cold rolled	: 414.51	: 395.91 ;	427.07 :	427.06	: 443.81 :	437.51 :	448.66 :	449.40
Galvanized	: 513.29	: 525.15	: 538.29 :	544.46	: 546.37 :	560.68 :	559.17 :	564.02
Other	: 668.93	: 669.63 :	: 640.65 :	617.71	: 566.22 :	595.94 :	624.56 :	642.74
Barst	:	:			: :	:	:	
Hot finished	: 327.15	: 325.53	: 321.57 :	328.17	: 402.77 :	399.73 :	431.70 :	454.01
Cold finished	***	***	***:	***	. 553.33 :	545.52 :	555.47 :	523.83
Reinforcing	: 271.58	: 263.79 :	257.97 :	262.74	: 293.94 :	276.79 :	247.B4 :	271.41
Nire rod	: 281.48	: 269.13	274.15 :	276.75	: 305.42 :	295.67 :	281.94 :	314.04
Wire	: 573.37	: 606.BO :	: 1389.21 :	1588.50	: 506.24 :	487.93 :	525.42 :	520.20
Wire products	: 1500.00	: 1600.00 :	1222.22 :	1500.00	: 602.65 :	610.08 :	610.30 :	607.18
Structural shapes and units	: 329.24	: 303.84	i 311.15 i	339,83	: 408.34 :	377.72 :	377.84 :	410.44
Rails and related products	۱ <u>***</u>	***	***:	***	***	*** :	*** :	***:
0il country tubular goods	: 0.00	: ***	: ***:	***	: 452.46 :	640.00 :	590.91 :	764.43
Line pipe	: 419.05	: 434.38	: 458.72 :	450.74	: 544.75 :	391.34 :	447.13 :	426.16
Other	: 4/	: 4/	4/.:	41	: 531.60 :	522.50 :	574.14 :	578.04
Certain stainless and allow tool steel:		• - '		<u> </u>	: :	:	:	
Semifinished	: 1375.00	: 1375.00	1407.41 :	1379.31	: 4/ :	4/;	4/ :	47
Stainless steel:	:	1	1 1		: ''	<u> </u>	<u>-</u> ' :	
Plates	: 1918.40	: 1845.93	1843.85 1	1850.90	: 1801.53 1	1822.22 :	1805.56 :	1925.00
Sheets and strip	: 1668.30	: 1634.06	1673.13 1	1690.43	: 1697.67 :	1606.71 :	1695.40 :	1770.99
Wire	: 3761.90	: 3125.00	3277.78 1	3000.00	1 4/.1	4/ :	4/:	4/
Pipes and tubes	ند. ۱	ىدىدى ،	• بديديو •		2991.07 :	2729.17 :	3106.87 :	3119.76
	~~~	• ***	· ****	***	•			

1/ Prices are net of all discounts and allowances (including freight allowances) and excluding U.S. inland freight. Producers' prices are f.o.b. eill; isporters' prices are f.o.b. warehouse, or, if shipped directly to custoes, c.i.f., ex-dock, port of entry, duty paid.

Prices represent the total industry value of reported sales divided by the total quantity sold, based on the 3 largest sales of each fire. 2/ See Appendix E for decription of products.

:

3/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

4/ No data reported.

Source: Compiled from data submitted in response to guestionnaires of the U.S. International Trade Commission.

H-3

Table H-3--Certain carbon and alloy steel: Financial experience of U.S. producers, July 1, 1986 - June 30, 1987

	(In thousands of dollars)	<b>)</b>	· · ·	
Itee	All carbon and certain alloy 1/ steel products subject to the investigation 2/	All stainless and : alloy tool steel : products subject to : the investigation 2/ :	Total 2/	
NET SALES:	•••••••		• • • • • • • • • • • • • • • • • • •	
Excluding intracompany and		a na magai	•	
intercompany transfers	26.613.000	2.064.093 :	28.677.093	
Intracompany and intercompany	· · · · · · · · · · · · · · · · · · ·	-,,		· ·
transfers	2,486,401	49,333 :	2,535,734	
Total net sales	29,099,451	2,179,350 :	31,278,801	
COST OF GOODS SOLD (including	1	l <b>i</b>		
intracompany and intercompany a	l	1		· · · · ·
transfers):		l (* 1		e e e e e e e
Raw Materials	7,644,554	430,691 1	8,075,245	
Direct labor	3,125,381	210,990 :	3,336,371	
<ul> <li>Other factory costs, including in</li> </ul>	ļu ir saitu sa	l		·
depreciation and amortization	7,785,290	459,281 :	8,244,571	•
Total cost of goods sold 3/	i i 27,447,450 i	:	29,880,957	e e e e e e e e e e e e e e e e e e e
GROSS PROFIT OR (LOSS)	1,652,000	328,843 :	1,980,843	
GENERAL, SELLING, AND ADMINI-	· · · · · · · · · · · · · · · · · · ·	L	5. A	<u>1</u>
STRATIVE EXPENSES	1,216,214	105,263 :	1,321,477	
NET OPERATING PROFIT OR (LOSS)	388,244	262,582 :	650,826	é di katé di k
OTHER INCOME OR (EXPENSE):		l · · · · · · · · · · · · · · · · · · ·	. `	
Net interest income	. <b>I</b>	<b>؛</b>		
or expense	(343,196);	: (32,291):	(375,487)	
All other income or (expense)	(3,298,074);	(34,267):	(3,332,341)	
Total other income :		: <b>I</b>	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	
or expense 4/	(3,564,238);	(69,296):	(3,633,534)	
NET PROFIT OR (LOSS) BEFORE TAXES	(3,239,864);	: 192,724 :	(3,047,140)	$(1,\infty) \in \mathbb{R}^{n}$
Depreciation and amortization	1,414,835	47,242 :	1,462,077	

2/ Certain respondents included financial information on related products.

3/ Including nonitemized costs.

4/ Including nonitemized expenses.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

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H-4

Table H-4.--Certain carbon and alloy steel: U.S. producers' capacity, changes in capacity, production, and capacity utilization, July 1, 198 -- June 30, 198

	. <b></b>	·····		
	l . Comoniku	: Laanges in	ł • Dandunki na	1 Capacity
. Iten	Lapacity	Capacity 1/	Production	UTILIZATION
			i,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Perrent
	,	:	:	1
Carbon and certain allov steel: 2/		1	1	:
Cokemaking facilities	29,347,900	: ***	\$18,393,399	: 63
Ironmaking facilities	69,498,300	• <del>*</del> **	40,780,130	: 59
Steelmaking facilities. 3/	l i i	1	:	:
Electric furnace	: 36,256,026	: 4/	:26,584,121	: 73
Basic oxygen furnace	65,876,500	t 4/	• ***	: ***
Other furnaces	: 8,355,700	: 4/	* *** .	***
Total	:110,488,226	***	273,560,353	1 67
Continuous casting	: 60,421,681	: 4/	:45,946,076	: 76
Products:		***	1	:
Plates	7,868,464	:	2,743,133	: 35
Sheets and strip:		:		:
Hot rolled	: 59,5/8,/36	***	: 38,150,046	1 64
	: 34,111,200	***	: 21,584,232	: 65
5aivan12e0	9,629,200	***	: /,103,348	1 /4
Utner	8,427,100	***	: 3,478,633	. 63
Bars: Wet finished	; . 17 ALT ANA	: . ***	. 0 774 771	: 43
NOC 11015000	: 13,403,4V4	***	: 8,329,2/1	; 02
LOIG TINISNEG	. T 071 044	* ***	- 7 LOL 507	I 03
Reinforcing	- A 573 APA	; , ***	- 3,020,J23	. 74
Wife Fuuring and a second and a second	1 754 TAN	· ***	· JJZI /4/	i /0
Miferraria and a second s	1,234,340 . 710 044	*	550 744	: 37
Mire products	. 4 740 000	, , ,***	JJ01/44	: /3
Poils and related products	1715701	• • ***	544 10T	; 03 . 17
Pince and tuber		•	- 7601112	
Dil country tubular goods	1.844.740	•	· 244 199	· IT
	2 177 615	• • ***	• 372 753	. 17
Ather	2 193 800	•	> RQA 20R	· 41
Certain stainless and		• .	: 0/4/2/0	• •
and allow tool stool:				
Steelmaking farilities: 3/			•	•
· Flectric furnace	. 2.272.882	• 4/	***	: ***
Basic oxvoen furnace		. 4/	***	: ***
Other furnares	* *** ***	4/	· ***	: ***
Intal	. 7.286.182	: 5.206	: 1.606.173	: 70
Continuous casting	1.243.295	: 4/	: 1.025.882	: 83
Stainless steel products:		1		: 00
Plates	. 264.900	•	. 193.527	73
Sheets and strip	1.131.605	* ***	809.820	: 72
kire	38.650	· ***	30.744	: 80
Pipes and tubes	30,400	• <b>***</b>	13.257	: 44
· · · · · · · · · · · · · · · · · · ·		• ***		• • • •

1/ Reported changes are likely to differ from changes in capacity calculated by company annual averages, due partly to the fact that reported capacity "averages in" the effect of closures or additions over the reporting period.

2/ Certain alloy refers to alloy steel other than stainless and alloy tool steel.

3/ Including semifinished steel.

4/ Change in capacity not calculated.

## Appendix I

U.S. Minimill Producers, Plant Locations, and Annual Raw Steel Capacity, 1987 Table I-1

I-2

U.S. minimill producers, plant locations, and annual raw steel capacity, 1987

Company and	Annual raw	
plant locations	<u>steel capacity</u>	Products
	1.000 short tons	
Atlantic Steel Co:		
Atlanta, GA	450	Rebar, wire rods, wire and
Cartersville, GA	300	products, light structurals
		Stractara
Auburn Steel Co:		
Auburn, NY	400	Rebar, light shapes
· · ·	·	
Bayou Steel Corp.:	· ·	
LaPlace, LA	650	Structurals
Birmingham Steel Corp.:		
Birmingham AL.	200	Rebar, light shapes
Chesapeake, VA	125	instart, right binapes
Emervville, CA	160	
Jackson MT	210	
Kankakoo II	165	
Soutting $WA$	220	
Deallie, MA	220	
Border Steel Mills,		
Inc.: Fl Dece TY	220	Dohan light change
EI Paso, IX	220	Rebar, light snapes
Calumet Steel Co.:		
Chicago Heights, IL	150	Bar, light shapes and
		structurals
Cascade Steel Rolling	•	
Mills, Inc.:		<b>N</b> 1
McMinnville, OR	400	Rebar, light shapes
Chaparral Stool Co		
Midlothian TY	1 500	Billots robar light
midiotinian, ix	1,500	shapes
Charter Electric Melting.		Shapes .
Inc.:		
Chicago, IL	130	Billets
Florida Steel Corp.:		
Charlotte, NC	280	Rebar, light shapes
Jackson, TN	400	- C
Jacksonville. FL	400	
Knoxville, TN	225	•
Tampa, FL.	280	
	200	

Table I-1--Continued

U.S. minimill producers, plant locations, and annual raw steel capacity, 1987

Company and	Annual ra		
plant locations	steel car	acity	Products
<u> </u>	1.000 sho	ort tons	
Georgetown Steel Corp.:	<u></u>		· · · · · ·
Georgetown, SC	700	•	Rebar, wire rod
Hawaiian Western Steel,			
Ltd.:			
Ewa, HI	60		Rebar
Unrricono Industrios			
The state industries,			
Seely TY	140		Pohar
Sealy, 1A	140		Rebai
Keystone Steel and Wire		•	
Peoria, IL	700		,
100110, 12000000000000000000000000000000		,	
Marion Steel Co.:			
Marion, OH	300		Rebar, light shapes
· · · · · · · · · · · · · · · · · · ·			
New Jersey Steel Corp.:			
Sayreville, NJ	480		Rebar, light structurals
Newport Steel Corp.:		· · · ·	
Ashland, KY	300		Welded pipe
Newport, KY	550		
North Star Steel Co.:			
Beaumont, IX	800		Rebar, wire rod, light
Milton, PA	150		shapes, light structurals
Monroe, Mi	500		•
St. Paul, MN	420	•••••••	
Wilton, IA	2/5	A	
Toungstown, OR	300		
Northwestern Steel and			
Stopling II	2 010		
Sterring, IL	2,010		
Nucor Corp			
Darlington SC	540		Pohar light change light
Jewett TX	550		structurale
Norfolk NE.	560		Structurals
Plymouth. UT	425		
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Owen Electric Steel			
Co.:			
Columbia, SC	100		Rebar, merchant bar

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Table I-1--Continued

U.S. minimill producers, plant locations, and annual raw steel capacity, 1987

Company and plant locations	Annual raw steel capacity	Products		
· · · · · · · · · · · · · · · · · · ·	1.000 short tons			
Raritan River Steel Co.: Perth Amboy, NJ	750	Wire rod		
Razorback Steel Corp.: Newport, AR	220	Merchant bars		
Roanoke Electric Steel Corp.: Roanoke, VA	500	Light shapes and structurals		
Seattle Steel, Inc.: Seattle, WA	500			
Sheffield Steel Corp.: Sand Springs, OK	550	Rebar		
Steel of West Virginia, Inc.: Huntington, WV	300	Billets and light		
Structural Metals: Birmingham, AL Seguin, TX	340 550	Rebar, light shapes and structurals		
TAMCO: Etiwanda, CA	400	Billets, rebar		
Thomas Steel Corp.: Lemont, IL	240	Rebar, light shapes		

Source: Hogan, <u>Minimills and Integrated Mills</u> and <u>Iron and Steelmaker</u>, "Electric Arc Furnace Roundup--U.S.A.," May 1988.



Appendix J

Statistical Tables, Selected Minimill Operations

Table J-1 Certain carbon and alloy steel: Ratio of U.S. minimill producers' reported capacity to total industry capacity, by selected products, July 1, 1984-June 30, 1985 (1984/85), July 1, 1985-June 30, 1986 (1985/86), July 1, 1986-June 30, 1987 (1986/87), and July 1, 1987-June 30, 1988 (1987/88)

Item	1984/85	1985/86	1986/87	1987/88	
			- <u>Percent</u>		
Carbon and certain alloy					
stee1: <u>1</u> /					
Steelmaking		•			•
facilities: <u>2</u> /					
Electric furnace	43.2	44.1	50.1	50.0	
Basic oxygen furnace	<u>3</u> /	3/	<u>3</u> /	_3/	
Other furnaces	3/	· <u>3</u> /	<u>3</u> /	<u>3</u> /	
Tota1	13.6	14.3	16.4	17.3	
Continuous casting	<u>4</u> /	31.9	28.0	29.0	
Products:					
Bars:					
Hot finished	39.7	41.1	50.0	45.6	
Reinforcing	89.9	80.2	96.0	80.4	
Wire rod	39.4	45.8	53.8	49.4	
Wire	38.9	28.8	57.9	59.2	
Wire products	64.9	81.0	81.3	77.8	
Structural shapes and					
units	57.0	45.2	48.7	56.6	1. P
	•				

1/ Certain alloy steel refers to alloy steel other than stainless and alloy tool steel.

<u>2</u>/ Including semifinished steel.
<u>3</u>/ Not applicable.
<u>4</u>/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from data contained in USITC investigation no. 332-209, <u>Annual Survey Concerning Competitive Conditions</u> in the Steel Industry and Industry Efforts to Adjust and Modernize, various issues.

Table J-2

Certain carbon and alloy steel: U.S. minimill producers' capacity utilization, by selected products, July 1, 1984-June 30, 1985 (1984/85), July 1, 1985-June 30, 1986 (1985/86), July 1, 1986-June 30, 1987 (1986/87), and July 1, 1987-June 30, 1988 (1987/88)

Item	1984/85	1985/86	1986/87	1987/88	
			<u>Percent</u>		
Carbon and cortain allow				· · .	
steel: 1/					
Steelmaking			••		•
facilities: 2/		• .	· · · .		
Electric furnace	72.6	80.0	80.7	85.9	
Basic oxygen furnace	<u>3</u> /	<u>3</u> /	<u>3</u> /	<u>3</u> /	
Other furnaces	<u>3</u> /	<u>3</u> /	<u>3</u> /	<u>3</u> /	
Tota1	72.6	80.0	80.7	85.9	
Continuous casting	<u>4</u> /	77.8	82.8	82.9	
Products:	*				
Bars:				· · ·	
Hot finished	62.0~	77.5	75.0	81.2	
Reinforcing	52.3	83.0	95.7	79.9	
Wire rod	84.4	84.4	96.2	96.1	
Wire	63.2	74.6	61.7	79.2	
Wire products Structural shapes and	61.3	_64.6	77.5	72.8	
units	54.1	77.2	80.9	88.5	

1/ Certain alloy steel refers to alloy steel other than stainless and alloy tool steel.

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2/ Including semifinished steel.

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3/ Not applicable.

4/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from data contained in USITC investigation no. 332-209, Annual Survey Concerning Competitive Conditions in the Steel Industry and Industry Efforts to Adjust and Modernize, various issues.

Table J-3

Certain carbon and alloy steel: Ratio of U.S. minimill producers' production to total industry production, by selected products, July 1, 1984-June 30, 1985 (1984/85), July 1, 1985-June 30, 1986 (1985/86), July 1, 1986-June 30, 1987 (1986/87), and July 1, 1987-June 30, 1988 (1987/88)

Item	1984/85	1985/86	1986/87	1987/88
-		P	ercent	
Carbon and certain alloy steel: 1/		•		
Steelmaking facilities: <u>2</u> /		• •	• •	•
Electric furnace	-51.4	51.8	55.1	46.5
Basic oxygen furnace	<u>3</u> /	<u>3/</u>	<u>3</u> /	<u>3</u> /
Other furnaces	<u>3</u> /	<u>3</u> /	<u>3</u> /	3/
Tota1	15.7	16.8	19.9	17.1
Continuous casting	<u>4/</u>	32.3	30.6	27.5
Products:				
Bars:				4 - J
Hot finished	47.0	53.1	59.3	52.2
Reinforcing		87.5	98.0	82.1
Wire rod	48.6	53.7	66.7	58.5
Wire	45.7	43.0	66.4	75.6
Wire products	76.3	85.9	86.6	90.6
Structural shapes and units	67.2	52.5	62.6	62.7
1/ Certain alloy steel refers to all	oy steel of	ther than	stainless a	and alloy
tool steel.				4 T.
2/ Including semifinished steel.				

Z/ Including semilinished sceel

3/ Not applicable.

4/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from data contained in U.S.I.T.C. investigation no. 332-209, <u>Annual Survey Concerning Competitive Conditions</u> in the Steel Industry and Industry Efforts to Adjust and Modernize, various issues.

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Table J-4

Certain carbon and alloy steel: U.S. minimill producers' shipments, by selected products, July 1, 1984-June 30, 1985 (1984/85), July 1, 1985-June 30, 1986 (1985/86) July 1, 1986-June 30, 1987 (1986/87), and July 1, 1987-June 30, 1988 (1987/88)

Item	1984/85	1985/86	1986/87	1987/88
		- <u>Thousand</u>	short ton:	<u>s</u>
Carbon and certain alloy steel products: $1/$				
Semifinished	- <u>2</u> /	409	745	741
Bars:				
Hot finished	-2,942	3,253	4,387	5,514
Reinforcing	-3,076	3,812	3,448	2,407
Wire rod	-1,315	1,600	1,706	1,891
Wire	- 132	128	142	190
Wire products	- ***	***	***	***
Structural shapes and units	-2,340	2,341	2,526	3,200

<u>1</u>/ Certain alloy steel refers to alloy steel other than stainless and alloy tool steel.

2/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from data contained in U.S.I.T.C. investigation no. 332-209, <u>Annual Survey Concerning Competitive Conditions in the Steel Industry</u> <u>and Industry Efforts to Adjust and Modernize</u>, various issues.

## Appendix K

Major companies net income and cash flow data

October 1, 1986-September 30, 1987

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Table K-1.--Calculation of major companies' net income from steel product operations, October 1, 1986 - September 30, 1987

(In thousands)	
Item	Calculation
Net sales	\$23,155,694
Cost of goods sold	21,435,627
General, selling, and administrative expenses	906,555
Interest expense	555,260
Reserves, provisions, special charges and other unusual items All other expenses or (income)	716,469
Current Income taxes	196,501
Tax effect of operating loss carry forward	(141,164)
Investment tax credit refund	(208,200)
Deferred taxes	***
Net income from steel operations	(275,789)

Table K-2.--Sources and uses of cash and cash equivalents in steel product operations, October 1, 1986 - September 30, 1987

(In thousands)	•	
Item	Calculation	
Cash provided from (cash used in) operations:		
Net income	\$ (275,789)	
Depreciation, depletion, and amortization	1,235,638	· ·
Non-cash income tax expense	(10,596)	
Non-cash charges (credits):		
relating to reserves, provisions, special		•
charges and other unusual items	634,972	· .
Other	(2,712)	
Cash flow from earnings	1,581,513	
Changes in working capital, excluding financing		
activities	15,672	
Cash flow from operations	1,597,185	
Cash provided from (used in) financing		
activities:	• •	
Net additions to or (reduction) in long and		
and short term debt	(344,734)	• •
Changes in capital stock	***	-
Transfers from or (to) corporate	104,323	
Other	***	
Subtota1	(164,934)	
Investment, dividends paid, and other cash		
provided (used) <u>1</u> /	(1,198,394)	
Increase (decrease) in cash and cash equivalents	233,857	
Cash and cash equivalents:		
Beginning of period	626,648	
End of period	860,505	

1/ Includes capital expenditures and cash generated from the disposal of assets.

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Table K-3.--Calculation of major companies' cash flow on steel product operations 1/, October 1, 1986 - September 30, 1987

(In thousands)

<u>tion</u> 514
514
062)
494)
958
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1/ Under P.L. 98-573, section 806 (b)(2)(B) net cash flow is defined as "annual net (after-tax) income plus depreciation, depletion allowances, amortization, and changes in reserves minus dividends and payments on short-term and long term debt and liabilities." The Conference report on the bill states that payment on short and long term debt and other liabilities means the net reduction in such debt and liabilities. 2/ Includes net changes in working capital.

3/ Including net income pertaining to prior periods and net increases in debt and liabilities, exclusion of which would reduce cash flow to \$143,357.

Table K-4.--Major U.S. steel companies: Net cash flow from steel product operations, October 1, 1986-September 30, 1987.

		(1.000	dollars)	
	Net cash flow	Net income pertaining to prior periods	Net increase in short and long term debt and liabilities <u>1</u> /	
Armco	***	***	***	
Bethlehem	***	***	***	
Inland	***	***	***	
LTV	***	***	***	
National	***	***	***	
Nucor	***	***	***	
Rouge	***	***	***	
USX	***	***	***	
Weirton	***	***	***	
Wheeling-			· · ·	
Pittsburgh	***	***	***	
Total	1,047,958	303,264	601,337	

1/ Includes net changes in working capital

		Steel rela	ted expenditu	res				·····		Ratio of	<del>.</del> .
Company	Net cash flow <u>l</u> / (1)	Plant and equipment (2)	Research and develop- ment <u>2</u> / (3)	Retraining workers <u>2</u> / (4)	Other (5)	Total expenditures (6)	Expenditures reflected in net cash flow (7)	Net expenditures (6-7) (8)	Adjusted net cash flow (1 + 4) (9)	expenditures for retraining workers to adjusted net cash flow (10)	B
					- <u>1.000 do</u>	<u>11ars</u>				- Percent	Ť
Armco	***	***	***	***	***	***	, ***	***	***	***	
Bethlehem	***	***	***	***	***	***	***	***	***	***	
Inland	***	***	***	***	* ***	***	<u>,**</u>	***	***	. ***:	
LTV	*** •, ,	***	***	***	***	***	***	***	***	***	
National	. <b>***</b>	***	_ <b>**</b> *	***	***	***	***	***	***	***	·
Nucor	· ***	***	***	. ***	***	***	***	***	***	***	
Rouge	***	***	***	***	***	***	***	***	***	<b>***</b>	
USX	***	***	***	***	***	***	***	***	***	***	.'
Weirton	***	***	***	***	***	***	***	***	***	***	24
Wheeling-							• •				
Pittsburgh.	***	***	***	**	***	***	***	***	***	***	
Total	1,047,958	1,059,105	90,397	45,361	140,692	1,335,555	156,893	1,178,662	1,093,319	4.1	

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Table K-5.--Major U.S. steel companies: Net cash flow from steel product operations, and steel related expenditures October 1, 1986-September 30, 1987

 $\underline{1}$ / Including net income pertaining to prior periods and net increases in short and long term debts and liabilities. 2/ Included as expenses in net income calculations. 2/ Included as expenses in net income calculations. :

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		Steel rela	ited expenditu	res						Ratio of	
Company	Net cash flow (1)	Plant and equipment (2)	Research and develop- ment <u>l</u> / (3)	Retraining workers <u>1</u> / (4)	Other (5)	Total expenditures (6)	Expenditures reflected in net cash flow (7)	Net expenditures (6-7) (8)	Adjusted net cash flow (1 + 4) (9)	expenditures for retraining workers to adjusted net cash flow (10)	ng
					<u>1,000</u>	dollars				Percent	······
Armco	***	***	***	***	***	***	***	***	***	***	
Bethlehem	***	***	***	***	***	***	***	***	***	***	
Inland	***	***	***	***	***	***	***	***	***	***	
LTV	***	***	***	***	***	***	***	***	***	***	
National	***	***	***	***	***	***	***	***	***	***	
Nucor	***	***	***	***	***	***	***	***	***	***	
Rouge	***	***	***	***	***	***	***	***	***	***	
USX	***	***	***	***	***	***	***	***	***	***	×
Weirton	***	***	***	***	***	***	***	***	***	***	1
Wheeling-											
Pittsburgh	***	***	***	***	***	***	***	***	***	***	
Total	393,887	607,471	21,232	19,128	122,830	770,661	42,953	727,708	413,015	4.6	

Table K-6Major U.S.	steel	companies:	Net	cash	flow	from	steel	product	operations,	anđ	steel	related	expenditures
		Jul	y 1,	1988	-Sept	ember	30, 1	988 (est	imate)				

 $\underline{1}$  / Included as expenses in net income calculations.

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Short supply requests for semifinished steel

	Table L-l	Short	supply	reque	sts for	semifi	nished	steel	-			
•	Company	Iten	Original .request date	Period	Quantity of original req. {tons}	Amendment date	Amended Questity (totel)	Approval dete	Amount approved	Approval Subtotal 1987	Approval Subtotal 1988	Cossests
	American Steel & Wire:	Billet	12/18/86	1987		12/31/86	102,000	3/3/87	23,430	23,430		No melting facilities Affected by USX strike
		Billet	12/11/87	1988	Confidential	1/20/88 2/2/88	106,195	5/ /88	29,470		29,470	
	California Steel Ind.:	slab	11/21/86	1967	400,000	) 11/2/87 12/6/87		11/24/87 12/31/87	30,000 50,000	\$0,000		No melting facilities Affected by USI strike South African sumplies out off
		<b>Slabs</b>	1/6/88	1620 `80 3640 `80	10,000	) 1/29/88 3/9/88	18,000 210,800	-4/29/88	73,341		73,341	by eabergo
	Connecticut Steel Corp.:	Billet	3/3/87	1987/88		1/6/88	Withdrawn by	r Comm. St	eel Corp.			Still building melt shop
		Billet	1/7/88	Apit-Krts	240,000	2/2/88	144,000	5/ /88	31,000		31,000	
	Gulf States Steel:	Slab	8/28/87	4thg `81	74,590	1/25/88	·	11/24/87	21,000	21,000		Excess rolling capcaity capacity End formations
		Slab	1/25/88	182 Q `BI	63,500	2/1/88	66,700	3/2/00	66,700	)	66,700	- Ban Leibere broniepo
	Lone Star Steel:	slab	11/13/06	1987	409,000	) .	·	4/27/87 3/15/87 6/23/87	6,160 21,540 26,242	) )		Shut down blast fermaces, BOP's ore mines and coking facilities
			•	•				8/13/87 12/7/87	45,000 45,000	143,942		
		Slab	12/4/87	162 Q '80 JrdQ '81	226,000	) 4/1 <u>/</u> 88	203, 500	3/18/00 4/29/80	180,000 157,500	1	188,800 157,580	
	Lukens :	Slab	10/28/87	lstQ '8	22,500	)		3/10/07				Long standing as seni buyer
		Slabs	3/23/88	3640 .81	50,000	)		4/29/88	12,580	)	12,580	BACEBB FOILing Capacity
	Mational Steel Corp.:	Slab	9/29/86	87, 1g*8(	240,000	)		· ·				Short term meeds while upgrading refining & casting facilities
	Raritan River:	Billets	4/7/88	2,364 981	50,000	)		5/17/88	17,500	)	17,500	Critical specification material not available from U.S. producers
	Sharon Steel:	Slab	2/26/87	1987	230,000	7/29/87	186,600	10/13/87	. 41,941	44,344		Furnace problems
		Slabs	12/23/87	1988	94,680	i		4/29/88	41,222	1	41,222	Short on Blast Furnace capacity
	Tuscaloosa Steel:	Slabs	4/8/88	2,364 Q80	413,726	<b>)</b>		5/16/88	69,000		69,000	Bo melting facilities
	Weirton Steel Corp.:	Slab	12/14/87	1988(4Q) 1988(3Q)	38,000	) 3/30/88		4/29/88	38,000		38,000	Critical specification material Considering melt shop improvements
	Totals								1,029,633	313,320	716,313	
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# Appendix M Specialty Steel Relief Measures

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## TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1987)

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#### APPENDIX TO THE TARIFF SCHEDULES Part 2. - Temporary Modifications Proclaimed Pursuant to Trade-Agreements Legislation

Trom	Stat.	Artialas	Units		Rates of Duty	
Lem	fix	ALLICIES	Quantity	1		2
		10. Additional duties and quantitative limitations on stainless steel and alloy tool steel The provi- sions of this headnote apply to items 926.00 through 926.23, inclusive, of this subpart. The duties provided for in items 926.00 and 926.05 and the quantitative limitations set forth in items 926.10 through 926.23, inclusive, are in addition to the duties provided for the subject articles in schedule 6, part 28, or in item 832.00, part 3A, schedule 8,				•
		<pre>where applicable.     (a) <u>Definitions</u>For the purposes of this subpart     (i) the term "restraint period" refers to a 3-month period provided for in the Quota Quantity column for items 926.10 through 926.23, inclusive;     (ii) the terms "razor blade steel" and     "chipper knife steel" are defined as provided in     headnotes 2(h)(x) and 2(h)(viii), respectively,     of part 28, schedule 6;     (iii) the term "band saw steel" refers to alloy     tool steel which contains, in addition to iron,     each of the following elements by weight in the     amounts specified:         (A) carbon:</pre>				
		<pre>(h) molybodenum: not less than 0.90 nor more than 1.10 percent; and (IJ) vanadium: not less than 0.08 per- cent nor more than 0.15 percent; (iv) the term "cladding grade 434 stainless steel sheet" refers to stainless steel sheet, not under 0.055 inch and not over 0.065 inch in thick- ness, not under 25.5 inches and not over 26.25 inches in width, containing by weight not more than 0.12 percent carbon; not less than 16 percent nor more than 18 percent chromium; and not less than 0.75 percent nor more than 1.25 percent molybdenum; cartified by the importer of record or the ultimate consignee at the time of entry for use in the manufacture of stainless steel-clad-aluminum automobile trim; (v) the term "stainless steel of the type described in headnote 10(a)(v)" refers to the stain- less steel grades described in either subparagraph (A) or (B) below which contain, in addition to iron, each of the following elements by weight in the amounts specified: (A) carbon: not more than 0.2 percent nor more than 0.8 per- cent; manganese: not less than 0.2 percent nor more than 1.0 percent; chromium: not less than 0.2 percent nor more than 2.0.5 percent nor more than 2.0.5 percent;</pre>				

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#### TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1987)

#### APPENDIX TO THE TARIFF SCHEDULES Part 2. - Temporary Modifications Proclaimed Pursuant to Trade-Agreements Legislation

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	Stat.		Units		Rates of Duty	
Iten	Suf- fix	Articles	of Quantity	1		211
		nickel: not less than 17.5 percent				
		nor more than 18.5 percent; molybdenum: not less than 6.0 percent				
		nor more than 6.5 percent;				
		nitrogen: not less than 0.15 percent nor more than 0.22 percent;				
		copper: not less than 0.5 percent				
		nor more than 1.0 percent; sulfur: not more than 0.03 percent;				
		phosphorus: not more than 0.04 percent;				
		or (B) carbon: not less than 0.05 percent				
		nor more than 0.10 percent;				
		nor more than 2.0 percent;				
	í (	manganese: not less than 0.2 percent				
		chromium: not less than 20.0 percent				
		nor more than 22.0 percent;				
		nickel: not less than 10.0 percent; nor more than 12.0 percent;				
	[ ]	nitrogen: not less than 0.14 percent				
		cerium: not less than 0.03 percent;				
		nor more than 0.08 percent;				
		phosphorus: not more than 0.03 percent;				
		(vi) the term "flapper valve steel" refers to				
		ness, certified by the importer of record or the				
		ultimate consignee at the time of entry for use in				
		for compressors;				
		(vii) the term "rotor steel for hysteresis				
		inch in thickness containing by weight not less				
		than 0.5 percent carbon and not less than 5.5 per-				
	1 1	or the ultimate consignee at the time of entry for				
		use in the manufacture of rotor rings or cups for		·		
		(viii) the term "tool steel of the type de-				
		scribed in headnote 10(a)(viii)" refers to the				
	{ }	the subparagraphs (A) through (F) below which				
		contain, in addition to iron, each of the follow-				
		(A) carbon: not less than 0.85 percent				
		nor more than 1.05 percent;				
		manganese: not less than 0.95 percent nor more than 1.75 percent;				
		sulfur: less than 0.03 percent;				
		silicon: not less than 0.45 percent;				
		nor more than 0.90 percent;				
		nor more than 1.80 percent;				
		nickel: less than 0.35 percent;				
		molybdenum: less than 0.10 percent;				
		(B) carbon: not less than 0.95 percent				
		nor more than 1.00 percent; manganese: not less than 0.95 percent				
		nor more than 1.25 percent;				
		phosphorus: not more than 0.025 percent;	1			
		silicon: not less than 0.45 percent				
		nor more than 0.75 percent; chromium: not less than 0.90 percent				
		nor more than 1.20 percent;				
		nickel: not more than 0.25 percent; copper: not more than 0.35 percent;				
		molybdenum: not more than 0.08 percent;				
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#### TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1987)

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#### APPENDIX TO THE TARIFF SCHEDULES Part 2. - Temporary Hogifications Proclaimed Pursuant to Trade-Agreements Legislation

Γ	Iter	Stat.				Units				
	LCER	fix				Quantity	1		2	
			· (c)	carbon:	not less than 0.85 perc	ent				
					nor more than 1.00 perc	ent;				
		1		manganese:	nor more than 1.40 perc	ent;				
				sulfur: phosphorus:	not more than 0.025 per not more than 0.025 per	cent; cent:				
I				eilicon:	not less than 0.50 perc	ent				
				chromium:	nor more than 0.80 perc not less than 1.40 perc	ent; ent				
		1			nor more than 1.80 perc	ent;				
				nickel: copper:	not more than 0.25 perc not more than 0.35 perc	ent; ent;				
				molybdenum:	not more than 0.08 perc	ent;				
			, (0)	carbon:	nor more than 1.10 perc	ent;				
				manganese:	not less than 0.65 perc	ent				
				sulfur:	not more than 0.025 per	cent;				
				phosphorus:	not more than 0.025 per	cent;				
				31110001	nor more than 0.35 perc	ent;				
				chromaium:	not less than 1.10 perc	ent ent:				
		<b>j</b>		nickel:	not more than 0.25 perc	ent;				
				copper: molvbdenum:	not more than 0.35 perc not less than 0.20 perc	ent; ent				
			/->		nor more than 0.30 perc	ent;			•	
			(8)	carbon:	not less than 0.95 perc nor more than 1.10 perc	ent;				
{				manganese:	not less than 1.05 perc	ent				
				sulfur:	not more than 0.025 per	ent; cent;				
E				phosphorus:	not more than 0.025 per	cent;				
ł				arricou.	nor more than 0.35 perc	ent;				
				chromium:	not less than 1.10 perc	ent ent:				
				'nickel:	not more than 0.25 perc	ent;				
				copper: molvbdenum:	not more than 0.35 perc not less than 0.45 perc	ent; ent				
Î					nor more than 0.60 perc	ent;				
			(F)	carbon:	or not less than 0.92 perc	ent				
					nor more than 1.02 perc	ent;				
				manganese:	nor more than 0.40 perc	ent;			·	
				aulfur: phosphorus:	not more than 0.025 per	cent; cent:				
				ailicon:	not less than 0.25 perc	ent				
				chromium:	nor more than 0.40 perc not less than 1.65 perc	ent; ent				
					nor more than 1.95 perc	ent;				
1				nickel: . copper:	not more than 0.25 perc not more than 0.35 perc	ent; ent;				
				molybdenum:	not less than 0.18 perc	ent				
				aluminum:	not more than 0.05 perc	ent;				
			certified by consignee at facture of ba	the importer of the time of end of roller the time of the time of the time of the the time of time of the time of time	of record or the ultimat ntry for use in the manu bearings.	e -				
1			(b) <u>Sho</u> of a restraint	rtfallDurin period, if the	ng the last 30-day perio e United States Trade	d				
			Representative	(USTR) determ	ines that any quota					
			during that res	au icem nereo traint period	, the USTR may, to the				ł	
			extent permitte	d by law, mod	ify the quota quantity f	or				
			period to reall	ocate the sho	rtfall or any portion					
			thereof to the modifications t	quota quantit; o be effective	y of any other item, suc e on the date of their	h				
			publication in	the Federal R	egister.					
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## TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1987)

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## APPENDIX TO THE TARIFF SCHEDULES Part 2. - Temporary Modifications Proclaimed Pursuant to Trade-Agreements Legislation

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Terr	Stat.	A	Units		Rates of Duty		
trep	fix	AFTICLES	Quantity	1	Special	2	
		(c) <u>Carryover</u> Whenever the quota quantity specified for any of the individually named countries for an :tem has not been entered during any restraint period, entry may be made during the subsequent restraint period of an amount up to 20 percent (10 percent in the case of shortfalls occurring in the restraint period and the amount entered during that period; and such amount shall not be counted against the quota quantity specified for such restraint period and the amount entered during that period; and such amount shall not be counted against the quota quantity allocated to any of the individually named countries may be exceeded by not more than 10 percent during any restraint period, except that the restraint levels for the period, except that the restraint levels for the period, except that the restraint levels for the period, and perceeded by not more than 3 percent, and shall not be exceeded by not more than 3 percent, and shall not be exceeded for that period in 1987. If a quota quantity is exceeded during a restraint period, a during restraint period, a during restraint period, a during restraint period, a during its exceeded during a restraint period, a for the next restraint level was exceeded shall be more the adjustment of the corresponding quota quantity for the next restraint level was exceeded shall be betweeding restraint level was exceeded shall be individual made countriesIf any country-by-country allocations of quota quantities are made by the USTR, the USTR may make the necessary adjustments to the appropriate quota quantities			Special		
						(2nd supp. 11/2/87)	

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Part 2. - Temporary Modifications Proclaimed Pursuant to Trade-Agreements Legislation

The	Stat.	· · · · · · · · · · · · · · · · · · ·	Units		Rates of Duty	· ·
Item	fix	Articles	of Quantity	1	Special	2
		<ul> <li>(g) Products Subject to Certain Export</li> <li>Restraint Agreements.</li> <li>(i) The duties provided for in items 926.00 and 926.05 shall not apply to products of</li> <li>Australia. Austria, Brazil, Czechoslovakia, the</li> <li>European Communities, German Democratic Republic,</li> <li>Hungary, Japan, Mexico, People's Republic of Chins,</li> <li>Poland, the Republic of Korea, Romania, South</li> <li>Africa, Venezuela, or Yugoelavia, exported to the</li> <li>United States on or after March 1, 1986.</li> <li>(ii) The quantitative limitations provided</li> <li>for in items 926.10 through 926.21 shall not apply</li> <li>to products of Austria, Brazil, or the following</li> <li>Member States of the European Communities: Belgium,</li> <li>Denmark, Federal Republic of Germany, France,</li> <li>Greece, Ireland, Italy, Luxemburg, the Netherlands</li> <li>and the United Kingdom of Great Britain and</li> </ul>				
		Northern Ireland.	÷		· · · ·	
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APPENDIX TO THE TARIFF SCHEDULES Part 2. - Temporary Modifications Proclaimed Pursuant to Trade-Agreements Legislation

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. (	St at .	Articles	Unite	Rates of Duty			
Iten	sif- fix		Quantity		1		2
				Effective	with respect	to erticles	
				entered	during the	period	
		,		July 20, 1987	July 20, 1988	1989	
				through July 19,	through July 19,	through Sept. 30.	
		3-11		1988	1989	1989	
26.00	1/	Sheets and strip of stainless steel (except as provided -					
		blade steel, cladding grade 434 stainless steel sheet,		1. 1			
		in width, stainless steel of the type described in		·			ĺ
		for in items 607.76, 607.90, 608.29, 608.43, and					
		608.57, part 2B, schedule 6, all the foregoing whether or not entitled to duty-free treatment under		U	0		
		item 832.00, part 3A, schedule 8	<u>1</u> /	3% ad val.	2% ad val.	1% ad val.	No chan
26.05	<u></u> ⊥∕.	Plates of stainless steel (except as provided in head- note 10(g)(i) to this subpart, and except stainless		j.		1	
		steel of the type described in headnote $10(a)(v)$ ) provided for in items 607.76 and 607.90, part 28.	l · ·			i	
		schedule 6, all the foregoing whether or not entitled	t i i	Ga	C.		*
		schedule 8	<u>1</u> /	37 ad val.	2% ad val.	12 ad val.O	No
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		1/ See Appendix statistical headnote 1.					

## TARIFF SCHEDULES OF THE UNITED STATES ANNOTALED (1987)

# APPENDIX TO THE TARIFF SCHEDULES Part 2. - Temporary Modifications Proclaimed Pursuant to Trade-Agreements Legislation

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	64 -		Delas	0
· · ·	Stat		Units	Quota Quantity
Item	Sur-	Arcicles	Quantity	(in short tons)
			(000000)	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) () () () ( ) () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () () (
·	ľ			
		Whenever the respective aggregate quantity of articles		· · · ·
	-	the product of a foreign country specified below		· ·
		for items 926.10 through 926.21, inclusive, has been		1
		entered in any restraint period (whether, for tariff		
	ł	purposes, in schedule 6 or in item 832.00 of schedule		
		8), no article in such item the product of such		
		country may be entered during the remainder of such		
	1	restraint period, except as provided in headnote 10:		l .
		Bars of stainless steel (except stainless steel	}	
		of the type described in headnote 10(a)(v)),	1 A 1	
	1	provided for in item 606.90, part 28, schedule 6:	· •	
076 10		T6 annual during the second from talk 20	1 ·	
720.10		1987 through October 19 1987 inclusive:	1. T	
		Arcenting		
		Canada	<u><u></u>.</u>	268 E4
		Ianan	1 1/	3 442 0
		Korea	½	454 -
				400
		Sain	1 1/	1.069
		/eden	<u>1/</u>	3306
		her, execpt as provide in headnote	1 1/	
		)(e)(ii) to this submert		80 6
			L <u>-</u> 4	
926.11		ered during the period from October 20.		
		through July 19, 1988, inclusive, ex-		Y
· ·	5 . s	a provided in headnote 10(g)(ii) to	1 · ·	
2 . · · · ·		subpart	1 12	17.717 0
	1		1 -	
926.12		If entered during the period from July 20.	1	
	•	1988, through July 19, 1989, inclusive.		1
. 1		except as provided in headnote $lO(g)(ii)$ to		
- 1		this subpart	1 1/	24.159
		, <b>-</b>	1 -	
926.13		If entered during the period from July 20.	1	
		1989, through September 30, 1989, in-		
		clusive, except as provided in headnote 10(g)		
· · ·		(ii) to this subpart	1 1/	4,977 6
			<u>∸</u> ′	
		Wire rod of stainless steel (except stainless		
		steel of the type described in headnote 10(a)(v)),		
		provided for in items 607.26 and 607.43, part 2B,		
		schedule 6:	1	
		the second design and the second difference to be 100		
920.14		r entered during the period from July 20,		
		, through October 19, 1967, inclusive:		
			1/	1,342
		Jpain	1 1/	6 430
		Jwegen Taiwan	1 1/	50 3
			1/	
: .	·	lo(a)(ii) as this subset	1	200 0
· ·		INTRATIA CO ENTE SUDPERCONCOLONIO	1 1/	477 🐨
976 16		If entered during the navial from October	1	1
	· '	20 1987 through tute 10 1089 inclusion	[	
		except as provided in headnote 10(a)(ii) to	1	· · ·
		this subpart	1	10.213
			1 1/	
926.16		If entered during the period from July 20	1	· ·
	[ ]	1988, through Inte 10 1980 inclusion	1	1
l l		except as provided in headnests 10(s)(ii)	I	
		to this subpart	1 17	13,926
		· · · · · · · · · · · · · · · · · · ·	∸′	
926.17		If entered during the period from July 20.	ł	1
		1989, through September 30, 1989, inclusive.	1	
1		except as provided in headnote 10(g)(ii) to	1	· ·
I		this subpart	1 1/	2,869 🚯
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		1/ See Appendix statistical headnose 1	1	
			1	11/2/8/)

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Item	Stat Suf- fix	Articles	Units of Quantity	Quota Quantity (in short tons)
		Whenever the respective aggregate quantity of articles the product of a foreign country specified below for items 926.10 through 926.21, inclusive, (con.): Bars, wire rods, plates, sheets, and strip, all the foregoing of alloy tool steel (except chipper knife steel, band saw steel, rotor steel for hysteresis motors and tool steel of the type described in headnote 10(a)(viii)), provided for in items 606.95, 607.28, 607.34, 607.46, 607.54, 607.72, 607.88, 608.34,608.49, and 608.64, and round wire of high speed tool steel, provided for in item 609.45, part 28, schedule 6:		
926.18		If entered during the period from July 20, 1987, through October 19, 1987 inclusive: Argentina		56 386 1,123 76 69 45 2,120 396 2 396
926.19		If entered during the period from October 20, 1987, through July 19, 1988, inclusive, ex- cept as provided in headnote 10(g)(ii) to this subpart	<u>1</u> /	13,182 🕑
926.20		If entered during the period from July 20, 1988, through July 19, 1989, inclusive, ex- cept as provided in headnote 10(g)(ii) to this subpart	1/	17,977 3
926.21		If entered during the period from July 20, 1989, through September 30, 1989, inclusive, except as provided in headnote 10(g)(ii) to this subpart	<u>1</u> /	3,703 🛛
1		$\frac{1}{2}$ See Appendix statistical headnote 1.		(?nd supp. 11/2/87)