



MINERAL INDUSTRY SURVEYS

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON, D.C. 20241



Donald Paul Hodel, Secretary

David S. Brown, Acting Director

For information call Peter H. Kuck
Telephone: (202) 634-1023

Iron Ore, Monthly

IRON ORE IN JUNE 1987

U.S. mine production and shipments of iron ore were slightly higher than those in May, according to the Bureau of Mines, U.S. Department of the Interior. Shipments from U.S. loading docks on the Great Lakes, however, totaled only 4.9 million long tons and were 13% less than those of the previous month. Imports rose 23% while exports, primarily to Canada, dropped 43%. Stocks of ore and agglomerates at consuming plants and U.S. receiving/transfer docks increased 13% during June to 11.0 million tons. Monthly consumption declined from 5.3 million tons to 5.0 million tons as the result of a 4% cutback in pig iron production. On June 30, 47 blast furnaces were in operation, 2 more than on May 31.

Data for the first 6 months of 1987 indicated declines in mine production (10.0%), mine shipments (13.6%), imports (19.5%), and consumption (10.0%), compared with those for the same period of 1986. Exports, in contrast, rose 31.3% to 2.0 million tons. Total stocks of ore and agglomerates reported at mines, docks, and furnace yards on June 30 were 23.4% lower than those of a year earlier. The stock average for the second quarter of 1987 was the lowest in more than 45 years.

In mid-June, union workers at Eveleth Mines reluctantly ratified a new 34-month contract that cut their wages 99 cents per hour and benefits 63 cents per hour. The cut lowered the average union wage to about \$12 per hour. At the same time, the 483 workers became eligible for incentive pay and regained some jobs lost to outside contractors. The new contract, which took effect July 1, also improved job security and streamlined grievance procedures. The workers, members of Local 6860 of the United Steelworkers of America, had been negotiating with Oglebay Norton Co., the operator and co-owner of Eveleth, for almost a year. The Eveleth agreement was similar to one worked out last January between the union and USX Corp.'s Minntac operation. Rouge Steel Co., which has a 31.7% equity in Eveleth, had threatened to cancel a 400,000-ton order for pellets unless labor costs were reduced.

On June 13, Wheeling-Pittsburgh Steel Corp. halted all agglomerating operations at its Follansbee, WV, by-product coke and sinter plant. The U.S. District Court ordered the sintering part of the complex closed indefinitely because it failed to meet air pollution standards established under the Federal Clean Air Act. The ruling was an outgrowth of a suit brought against Wheeling-Pittsburgh by the U.S. Environmental Protection Agency. The company has been operating under the protection of Federal bankruptcy laws since April 1985 and has been unable to provide the \$3 million needed for additional emission control equipment. The closure forced the layoff of 100 workers and complicated pig iron production at the company's five blast furnaces across the Ohio River in Steubenville.

Prepared in the Branch of Ferrous Metals, December 16, 1987.

Price update: Japanese ore buyers were able to complete most of their fiscal year 1987 ^{1/} price negotiations with foreign producers by September 9. In almost every case, irrespective of ore type, the new price was lower than that for fiscal year 1986. Prices listed below are f.o.b., in U.S. cents per dry long ton unit of iron unless otherwise indicated:

Country and Producer	Ore type	Prices	
		FY 1986	FY 1987
Australia--Hamersley and Goldsworthy..	lump ore	30.29	28.78
Do.....	finer	25.97	24.67
Mount Newman.....	lump ore	30.29	^{2/} 29.38
Do.....	finer	25.97	^{2/} 25.19
Robe River.....	finer	22.97	21.50
Savage River.....	pellets	36.02	34.72
Brazil--C.V.R.D. and M.B.R.....	lump ore	23.66	22.24
C.V.R.D. (Carajás).....	finer	23.66	22.24
M.B.R.....	finer	24.21	22.76
Samarco.....	pellet feed	19.46	18.29
Nibrasco.....	pellets	35.29	^{3/}
Canada--I.O.C. (Carol Lake).....	finer	22.44	21.25
Chile--C.M.P. (Algarrobo).....	pellets	36.10	35.28
India--M.M.T.C. (Bailadila).....	lump ore	29.21	27.75
Do.....	finer	24.95	23.70
Peru--Hierro Peru.....	pellet feed	18.32	17.15
Do.....	pellets	27.59	25.83
South Africa--ISCOR.....	lump ore	^{4/} 23.91	^{4/} 22.34
Do.....	finer	^{4/} 20.55	^{4/} 19.15

^{1/} April 1987 to March 1988.

^{2/} Excludes special discount. Actual price cut was 5%.

^{3/} Price negotiations were still in progress at the beginning of August.

^{4/} Price per dry metric ton unit.

Source: TEX Report (Tokyo), v. 19, Nos. 4433, 4434 and 4458, May 11, May 12, and September 9, 1987.

Note: Selected tables of iron ore statistics, to be published in Volume I of the 1986 Minerals Yearbook, are included with this issue of Mineral Industry Surveys.

U.S. IRON ORE

MONTHLY PRODUCTION AND SHIPMENTS

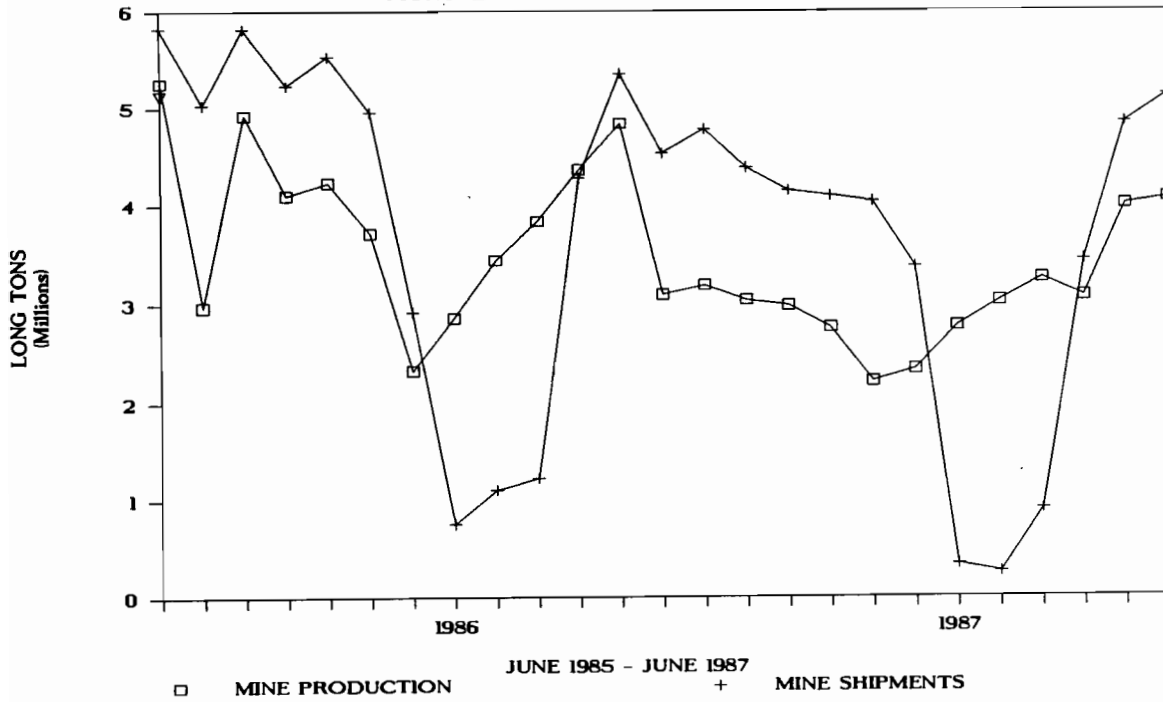


Table 1. - U.S. production and shipments of iron ore, by districts 1/
(Exclusive of ore containing 5% or more manganese)
(Thousand long tons)

Period	Lake Superior	Other U.S.	Total 2/	
			1987	1986
Production:				
1986 p/-----	38,179	809	--	38,988
1987:				
1st Quarter-----	8,898	171	9,069	10,144
April-----	3,020	56	3,076	4,363
May-----	3,942	58	4,000	4,838
June-----	4,008	56	4,064	3,096
Shipments:				
1986 p/-----	41,225	823	--	42,048
1987:				
1st Quarter-----	1,341	142	1,484	3,087
April-----	3,366	70	3,437	4,277
May-----	4,783	61	4,844	5,354
June-----	5,068	60	5,128	4,527

p/ Preliminary.

1/ Excludes byproduct ore, except where noted.

2/ Includes estimated data. Data may not add to totals shown because of independent rounding.

Table 2. - U.S. mine production, shipments, and stocks of iron ore 1/
(Exclusive of ore containing 5% or more manganese)
(Thousand long tons)

District	Production June		Shipments June		Mine Stocks June 30	
	1987	1986	1987	1986	1987	1986
Lake Superior:						
Michigan-----	1,054	1,018	1,071	1,197	2,481	3,739
Minnesota-----	2,954	2,019	3,997	3,252	5,485	7,199
Other U.S.-----	56	59	60	78	259	272
Total <u>2/</u> -----	4,064	3,096	5,128	4,527	8,225	11,210

1/ Excludes byproduct ore.

2/ Includes estimated data. Data may not add to totals shown because of independent rounding.

Table 3. - U.S. exports of iron ore
(Thousand long tons)

Period	Canada	Other	Total <u>1/</u>	
			1987	1986
1986 p/-----	4,478	3	--	4,482
1987:				
1st Quarter-----	92	(<u>2/</u>)	92	157
April-----	440	(<u>2/</u>)	440	218
May-----	911	(<u>2/</u>)	911	533
June-----	522	(<u>2/</u>)	522	589

p/ Preliminary.

1/ Data may not add to totals shown because of independent rounding.

2/ Less than one-half unit.

Source: Bureau of the Census.

Table 4. - Canada: Shipments of iron ore
(Thousand dry long tons)

Period	Newfound- land	Quebec	Ontario	British Columbia	1987 Total <u>1/</u>	1986 Total <u>1/</u>
1986 <u>p/</u> -----	20,086	13,285	3,329	26	--	36,724
1987:						
1st Quarter---	2,249	2,977	848	6	6,080	5,648
April-----	1,623	1,225	266	2	3,115	3,769
May-----	1,144	1,654	271	2	3,071	3,874
June-----	1,813	1,686	302	2	3,803	<u>r/</u> 2,936

p/ Preliminary. r/ Revised.

1/ Data may not add to totals shown because of independent rounding.

Source: Energy, Mines, and Resources Canada.

Table 5. - U.S. imports for consumption of iron ore, by country
(Exclusive of ore containing 10% or more manganese)

Country of origin	June 1987		Year to date 1987			Year to date 1986 (thousand long tons)
	Thousand long tons	Value <u>1/</u> (thousand dollars)	Thousand long tons	Value <u>1/</u> (thousand dollars)	Value <u>1/</u> (dollars per ton)	
Australia-----	32	1,661	32	1,661	51.53	--
Brazil-----	416	7,085	2,082	36,458	17.51	1,793
Canada-----	1,080	30,051	2,658	85,946	32.33	4,244
Chile-----	--	--	329	5,709	17.33	36
China-----	28	395	28	395	13.99	67
Liberia-----	201	2,714	574	7,753	13.50	705
Mauritania-----	--	--	66	1,049	15.95	--
Peru-----	(<u>2/</u>)	2	41	825	20.32	55
Spain-----	--	--	1	27	51.76	--
Sweden-----	--	--	55	1,083	19.64	35
Venezuela-----	138	3,041	1,036	21,014	20.28	1,745
Other-----	<u>3/</u> 54	<u>3/</u> 1,187	112	2,776	24.78	35
Total <u>4/</u> ----	1,948	46,135	7,015	164,695	23.48	8,714

1/ Customs value. Excludes international freight, insurance, and other c.i.f. charges.

2/ Less than one-half unit.

3/ Part being questioned.

4/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census data reported under item 601.24 of the Tariff Schedules of the United States.

Table 6. - U.S. consumption and stocks of iron ore and agglomerates
at consuming plants and production of pig iron
(Thousand long tons)

State or Region	Consumption			Stocks	
	June 1987	Year to date		June 30 1987	June 30 1986
		1987	1986		
Alabama, Kentucky, Tennessee, Texas, and Missouri-----	320	1,901	2,488	834	844
California, Colorado, and Utah-	--	--	934	--	156
Delaware, Maryland, and West Virginia-----	550	3,656	3,202	1,574	1,849
Illinois and Indiana-----	2,023	11,163	12,143	4,132	4,890
Michigan and Minnesota-----	468	2,859	2,653	1,349	1,368
New York, Ohio, Pennsylvania, New Jersey, and Rhode Island-	1,673	8,880	10,214	2,118	3,646
Total <u>1</u> /-----	5,035	28,459	31,633	10,006	12,754

Stocks at U.S. receiving/transfer docks----- 965 1,109

Consuming Sector	Consumption by process			Pig iron produced		
	June 1987	Year to date		June 1987	Year to date	
		1987	1986		1987	1986
Blast furnaces-----	4,638	25,229	27,462	3,642	20,137	22,361
Steel furnaces-----	9	39	147	--	--	--
Agglomerating plants <u>2</u> /--	387	3,178	3,957	--	--	--
Miscellaneous <u>3</u> /-----	(<u>4</u> /)	13	68	--	--	--
Total <u>1</u> /-----	5,035	28,459	31,633	3,642	20,137	22,361

1/ Data may not add to totals shown because of independent rounding.

2/ Iron ore and iron ore concentrates consumed in agglomerating plants not located at the mine site.

3/ Sold to nonreporting companies or used for purposes not listed.

4/ Less than one-half unit.

Source: American Iron Ore Association (consumption of iron ore).
American Iron and Steel Institute (production of pig iron).

Table 7. - U.S. imports for consumption of iron ore, by customs district
(Exclusive of ore containing 10% or more manganese)
(Thousand long tons)

Customs district	June 1987	Year to date	
		1987	1986
Baltimore-----	649	2,092	2,614
Buffalo-----	(1/)	(1/)	(1/)
Charleston, SC-----	--	134	127
Chicago-----	366	881	481
Cleveland-----	133	537	838
Detroit-----	99	177	115
Houston-----	(1/)	(1/)	7
Mobile-----	2/229	2/635	1,683
New Orleans-----	109	845	850
New York-----	(1/)	(1/)	r/(1/)
Philadelphia-----	364	1,713	2,000
San Juan, PR-----	--	1	--
Wilmington, NC-----	--	(1/)	--
Total 3/-----	1,948	7,015	8,714

r/ Revised.

1/ Less than one-half unit.

2/ Part being questioned.

3/ Data may not add to totals shown because of independent rounding.

Table 8.--Salient iron ore statistics
(Thousand long tons and thousand dollars unless otherwise specified)

	1982	1983	1984	1985	1986
United States:					
Iron ore (usable, <u>1</u> / less than 5% manganese):					
Production-----	35,433	37,562	51,269	48,751	38,825
Shipments-----	35,756	44,596	50,883	49,411	41,327
Value-----	\$1,491,809	\$1,944,988	\$2,247,686	\$2,076,730	\$1,472,511
Average value at mines, dollars per ton-----	\$41.72	\$43.61	\$44.17	\$42.03	\$35.63
Exports-----	3,178	3,781	4,993	5,033	4,482
Value-----	\$150,522	\$182,744	\$239,257	\$240,557	\$204,738
Imports for consumption-----	14,501	13,246	17,187	15,771	16,743
Value-----	\$470,847	\$445,731	\$529,065	<u>r</u> /\$452,267	\$460,643
Consumption (iron ore and agglomerates)-----	63,916	70,629	72,514	70,575	61,116
Stocks, Dec. 31:					
At mines ² /-----	12,129	<u>3</u> /4,122	<u>3</u> /5,265	<u>3</u> /5,951	<u>3</u> /3,255
At consuming plants-----	29,923	25,494	24,017	21,290	17,163
At U.S. docks-----	5,750	3,174	2,942	2,404	1,987
Manganiferous iron ore (5% to 35% manganese):					
Shipments-----	28	30	79	18	13
World: Production-----	<u>r</u> /768,566	<u>r</u> /728,510	821,926	<u>p</u> /839,865	<u>e</u> /847,775

e/ Estimated. p/ Preliminary. r/ Revised.

1/ Direct-shipping ore, concentrates, agglomerates, and byproduct ore.

2/ Excludes byproduct ore.

3/ These stocks are not comparable to those of previous years owing to the reclassification of some stocks from the usable to the byproduct category.

PRELIMINARY

Table 9.--Crude iron ore 1/ mined in the United States in 1986,
by district, State, and mining method
(Thousand long tons and exclusive of ore containing 5% or more manganese)

District and State	Number of mines	Open pit	Underground	Total quantity
Lake Superior:				
Michigan-----	2	33,819	--	33,819
Minnesota-----	9	84,923	--	84,923
Total-----	11	118,742	--	118,742
Other States:				
Missouri-----	1	--	1,111	1,111
Other ² /-----	7	109	--	109
Total-----	8	109	1,111	1,220
Grand total-----	19	118,851	1,111	119,962

1/ Excludes byproduct ore.
2/ Includes California, Nevada, New Mexico and Texas.

PRELIMINARY

Table 10.--Usable iron ore produced in the United States in 1986,
by district, State, and type of product
(Thousand long tons and exclusive of ore containing 5% or more manganese)

District and State	Direct- shipping ore	Concentrates	Agglomerates	Total quantity 1/
Lake Superior:				
Michigan-----	--	--	10,558	10,558
Minnesota-----	--	1,124	25,882	27,005
Total 1/-----	--	1,124	36,440	37,564
Other States:				
Missouri-----	--	47	758	805
Other 2/-----	72	385	--	457
Total 1/-----	72	432	758	1,262
Grand total 1/-----	72	1,556	37,198	38,825

1/ Data may not add to totals shown because of independent rounding.

2/ Includes California, Nevada, New Mexico, Texas, and Utah.

PRELIMINARY

Table 11.--Shipments of usable iron ore 1/ from mines in the United States in 1986
(Exclusive of ore containing 5% or more manganese)

District and State	Gross weight of ore shipped (thousand long tons)			Average iron content (natural) percent	Total value (thousand dollars)
	Direct- shipping ore	Concen- trates	Agglom- erates		
Lake Superior:					
Michigan-----	--	--	10,957	10,957	64.4
Minnesota-----	--	1,345	27,435	28,779	64.0
					W
					1,017,261
Total reportable 2/-	--	1,345	38,392	39,737	64.2
					1,017,261
Other States:					
Missouri-----	--	48	754	803	65.2
Other 3/------	149	640	--	789	56.0
					W
					15,740
Total reportable 2/-	149	688	754	1,591	60.7
					15,740
Total withheld-----	--	--	--	--	--
					439,510
Grand total 2/------	149	2,033	39,146	41,327	64.0
					1,472,511

W Withheld to avoid disclosing company proprietary data; included in "Total withheld."

1/ Includes byproduct ore.

2/ Data may not add to totals shown because of independent rounding.

3/ Includes California, Montana, Nevada, New Mexico, New York, Texas, and Utah.

PRELIMINARY

Table 12.--U.S. consumption of iron ore and agglomerates in 1986, by State
(Thousand long tons and exclusive of ore containing 5% or more manganese)

State	Iron ore and concentrates 1/		Agglomerates 2/		Miscellaneous 3/	Total reportable
	Blast furnaces	Steel furnaces	Blast furnaces	Steel furnaces		
Alabama, Kentucky, Texas, Utah----	W	W	5,327	W	W	5,327
Illinois, Indiana, Michigan-----	W	W	28,356	W	W	28,356
Maryland and Pennsylvania-----	609	W	9,543	W	W	10,152
Ohio and West Virginia-----	42	W	15,620	W	W	15,662
Undistributed-----	139	77	--	321	1,082	1,619
Total 4/-----	789	77	58,845	5/321	1,082	61,116

W Withheld to avoid disclosing company proprietary data; included with "Undistributed."

1/ Excludes pellets or other agglomerated products.

2/ Includes approximately 36,407 units of pellets produced at U.S. mines and 8,371 units of foreign pellets and other agglomerates.

3/ Includes iron ore consumed in production of cement and iron ore shipped for use in manufacturing paint, ferrites, heavy media, cattle feed, refractory and weighting materials, and for use in lead smelting.

4/ Data may not add to totals shown because of independent rounding.

5/ Includes an estimated 240 units of ore and agglomerates used for production of direct-reduced iron for steelmaking.

PRELIMINARY

Table 13.--Iron ore consumed in production of sinter at
iron and steel plants in the United States in 1986, by State
(Thousand long tons)

State	Iron ore consumed <u>1/</u>	Sinter produced
Indiana, Kentucky, Michigan, and Utah-----	3,087	6,854
Maryland and Pennsylvania----	3,792	4,937
Ohio and West Virginia-----	1,373	2,261
Total-----	<u>2/8,251</u>	14,052

1/ Includes domestic and foreign ores.

2/ Data do not add to total shown because of independent rounding.

PRELIMINARY

Table 14.--U.S. production of iron ore agglomerates, 1/ by type
(Thousand long tons)

Type	1985	1986
Sinter-----	2/16,557	3/14,052
Pellets-----	46,970	37,198
Total-----	63,527	51,250

- 1/ Production at mines and consuming plants.
- 2/ Includes 7,256 units of self-fluxing sinter.
- 3/ Includes 5,056 units of self-fluxing sinter.

PRELIMINARY

Table 15.--U.S. exports of iron ore, by country
(Thousand long tons and thousand dollars)

Country	1984		1985		1986	
	Quantity	Value	Quantity	Value	Quantity	Value
Canada-----	4,988	238,856	5,033	240,435	4,479	204,600
India-----	(1/)	2	--	--	(1/)	17
Mexico-----	(1/)	24	(1/)	10	1	45
Netherlands-----	3	262	--	--	(1/)	17
United Kingdom-----	(1/)	32	--	--	--	--
Venezuela-----	(1/)	15	(1/)	22	(1/)	39
Other-----	1	66	(1/)	87	(1/)	20
Total 2/-----	4,993	239,257	5,033	240,557	4,482	204,738

1/ Less than ½ unit.

2/ Data may not add to totals shown because of independent rounding.

PRELIMINARY

Table 16.-- U.S. imports for consumption of iron ore, by country
(Thousand long tons and thousand dollars)

Country	1984		1985		1986	
	Quantity	Value	Quantity	Value	Quantity	Value
Brazil-----	2,533	55,132	2,540	49,322	3,693	71,045
Canada-----	11,190	413,473	8,557	325,248	8,696	311,757
Chile-----	--	--	164	2,320	93	2,126
Liberia-----	1,745	25,270	2,206	<u>r/31,014</u>	1,487	21,855
Mauritania-----	--	--	--	--	65	1,158
Peru-----	7	76	121	2,722	91	2,429
Spain-----	34	877	--	--	--	--
Sweden-----	84	1,659	65	1,503	104	2,473
Venezuela-----	<u>1/1,524</u>	<u>1/31,377</u>	<u>2/2,068</u>	<u>2/39,369</u>	<u>3/2,309</u>	<u>3/42,126</u>
Other-----	70	1,201	50	769	204	5,674
Total-----	17,187	529,065	15,771	<u>r/452,267</u>	<u>4/16,743</u>	460,643

r/ Revised.

- 1/ Excludes approximately 64,000 long tons of sponge iron valued at \$5,016,000, originally reported as iron ore.
2/ Excludes approximately 214,000 long tons of sponge iron valued at \$15,635,828, originally reported as iron ore.
3/ Excludes approximately 83,000 long tons of sponge iron valued at \$8,340,609, originally reported as iron ore.
4/ Data do not add to total shown because of independent rounding.

PRELIMINARY

Table 17.--U.S. imports for consumption of iron ore, by customs district
(Thousand long tons and thousand dollars)

Customs district	1984		1985		1986	
	Quantity	Value	Quantity	Value	Quantity	Value
Baltimore-----	4,668	133,448	3,673	r/71,363	5,567	144,725
Buffalo-----	(1/)	(1/)	(1/)	5	(1/)	25
Chicago-----	2,574	59,705	2,594	58,712	1,537	37,958
Cleveland-----	3,859	136,654	1,646	59,853	1,707	67,123
Detroit-----	393	12,927	542	19,107	382	17,798
Houston-----	133	2,758	165	2,541	42	745
Mobile-----	1,548	68,283	2,600	111,772	2,434	64,317
New Orleans-----	643	12,315	878	16,266	1,569	31,052
Philadelphia-----	3,250	98,777	3,408	107,029	3,237	90,592
Other-----	119	4,198	266	5,620	268	6,308
Total 2/-----	17,187	529,065	15,771	r/452,267	16,743	460,643

r/ Revised.

1/ Less than ½ unit.

2/ Data may not add to totals shown because of independent rounding.

PRELIMINARY