

Mineral Industry Surveys

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COPPER IN DECEMBER 2002

Though mine, smelter, and refinery production changed little from production levels in November, all were down significantly (15%, 29%, and 32%, respectively) from production levels in December 2001. Consumption of refined copper in December fell by 18% owing to the traditional holiday vacation period.

Despite apparent weakness in the market, copper prices strengthened in November and December, the Comex price averaging above \$0.72 per pound, the highest level since a mid-year price rise in June. The price rise was sustained by several industry announcements affecting the supply of copper. On October 30, Southern Peru Copper Corp. (SPCC) announced that workers at its Toquepala Mine in Peru had struck, the first such action at SPCC in more than 10 years (Platts Metals Week, 2002). The strike ultimately led to the loss of only about 2,700 metric tons (t) of copper in the fourth quarter of the year (Southern Peru Copper Corp., 2003). ASARCO Incorporated's announcements concerning the fate of its Mission Mine in Arizona in October and December, as well as concerns over its stalled attempt to raise capital through the sale of its SPCC subsidiary, signaled additional production cuts. (See Copper In November 2002.) At the end of November, striking workers at Noranda Inc.'s Horne smelter in Rouyn-Noranda, Quebec, voted to reject the company's latest offer, extending their strike that began on June 18. Noranda anticipated that anode production in 2002 would be down by 42,000 t from production

in 2001 (Pisculli, 2002). On December 4, BHP Billiton announced that it would continue its program of "demand-based" production, originally announced in November 2001, that would reduce annual production at the Escondida Mine in Chile by 200,000 t and the Tintaya Mine in Peru by 90,000 t. It also announced its intent to keep its Pinto Valley Mine in Arizona and its Robinson Mine in Nevada on standby (BHP Billiton, 2002).

PRELIMINARY ANNUAL REVIEW OF 2002

- Mine production in 2002 continued its downward trend, declining by 16% to 1.13 million tons. Production cutbacks previously imposed in the United States continued into 2002. In January, Phelps Dodge Corp. implemented most of the cutbacks announced in October 2001, curtailing 165,000 tons per year of production by closing its Miami, AZ, leach operations, and halving production at the Sierrita, AZ, and Bagdad, AZ, mines. Its Chino, NM, electrowon operation, however, continued to operate. Asarco further reduced output at its Mission Mine, which operated at about 40% of capacity during the year. (See Copper in August 2001.) The San Manuel, AZ, residual leach operation also ceased production early in the year and the shuttered San Manuel underground mine was allowed to flood.

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- Downstream smelter and refinery production fell by 26% and 16%, respectively. Phelps Dodge closed its Chino, NM, smelter and Miami electrolytic refinery, responding to the reduced availability of concentrates from its mine cutbacks. Only 3 primary smelters and no secondary smelters operated during the year. Production at Asarco's Amarillo, TX, refinery was reduced significantly following closure of Chemetco's secondary smelter in 2001, which supplied anode to Amarillo, and the cut back at its Mission Mine. (See Copper in October 2001.)
- Preliminary annual consumption data for refined copper indicate an 8% drop compared with consumption in 2001, and a 20 % decline from the peak annual consumption experienced in 2000. Demand was especially weak at wire-rod mills where consumption of refined copper and production of wire rod declined by about 9%. While consumption of refined copper at brass mills fell by about 3.5%, a 2% increase in semifabricate output was supported by increased consumption of copper scrap. According to data compiled by the American Bureau of Metal Statistics, Inc. (ABMS) (2003), copper alloy mill shipments rose by 6.6% in 2002, while copper mill products shipments fell by about 3%, underpinning the increased reliance on scrap at the expense of refined copper. According to ABMS, combined shipments rose by 1.4% in 2002, only slightly offsetting the 18.6% drop in 2001.
- According to preliminary world data released by the International Copper Study Group (ICSG) (2003), world mine production declined by 0.7%, 95,000 t, and world refined production fell by 1.5%, 240,000 t. World refined copper use rose by 2.1% compared with that in 2001: Weak demand in both the United States and the European Union (-4.8%) was offset by an 11.2% growth in Asia. The apparent surplus in refined copper production fell from 780,00 t in 2001 to 240,000 t in 2002. Owing to higher than anticipated refined production and weaker than anticipated demand in the fourth quarter, the 2002 apparent surplus was about 100,000 t higher than projected by the ICSG at its November meetings.

References Cited

- American Bureau of Metal Statistics, Inc., 2003, Copper and copper alloy mill product markets: Chatham, NJ, American Bureau of Metal Statistics, Inc., February 25, 8 p.
- BHP Billiton, 2002, BHP Billiton announces extension to copper cutbacks: London, BHP Billiton news release, December 4, 1 p.
- International Copper Study Group, 2003, Copper—Preliminary data for December 2002: Lisbon, Portugal, International Copper Study Group press release, March 10, 1 p.
- Pisculli, Alysson, 2002, Noranda's offer to Horne strikers rejected: American Metal Market, v. 110, no. 96-1, November 25, p. 3.
- Southern Peru Copper Corp., 2003, SPCC reports fourth quarter and full-year results: Phoenix, Southern Peru Copper Corp. press release, January 30, 3 p.
- Platts Metals Week, 2002, SPCC strike, Asarco news lift copper market: Platts Metals Week, v. 73, no. 44, November 4, p. 1, 8.

TABLE 1
SALIENT STATISTICS OF THE COPPER INDUSTRY IN THE UNITED STATES 1/

(Metric tons, unless otherwise specified)

	Source table 2/	2002			
		2001	November	December	January - December
Production:					
Primary:					
Mine, recoverable	(2)	1,340,000	93,700	95,400	1,130,000
Refinery:					
Electrolytic:					
Domestic	(4)	808,000	67,900 r/	64,600	801,000
Foreign	(4)	192,000	W	W	40,000 3/
Electrowon	(4)	628,000	45,600	49,000	592,000
Total	(4)	1,630,000	113,000 r/	114,000	1,430,000
Secondary recoverable copper:					
Refineries					
Ingot makers 4/	(5)	172,000	5,090 r/	3,920	69,100
Brass and wire-rod mills	(5)	122,000 r/	10,200 r/	10,200	122,000
Foundries, etc. 4/	(5)	727,000	61,800 r/	63,200	797,000
Smelter, total	(5)	64,800 r/	5,400 r/	5,400	64,800
Smelter, total	(3)	919,000	57,500	56,500	683,000
Consumption:					
Apparent	(8)	2,500,000 r/	200,000	NA	NA
Refined (reported)	(7)	2,620,000 r/	196,000 r/	161,000	2,420,000
Purchased copper-base scrap	(9)	1,380,000 r/	104,000 r/	105,000	1,330,000
Stocks at end of period:					
Total refined	(11)	956,000 r/	1,030,000	1,030,000	XX
Blister, etc.	(11)	98,000	76,300 r/	44,400	XX
Prices:					
U.S. producer cathode (cents per pound) 5/	(12)	76.854	76.729	76.541	75.805
Imports: 6/					
Ores and concentrates 7/	(14)	47,000	4	NA	NA
Refined	(14)	991,000	82,000	NA	NA
Exports: 6/					
Ores and concentrates 7/	(15)	45,300	1,670	NA	NA
Refined	(15)	22,500	506	NA	NA

r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; included in "Domestic."
XX Not applicable.

1/ Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

2/ Numbers in parentheses refer to the detailed tables where these data are located.

3/ January - April only; excludes withheld data.

4/ Monthly data and 2002 cumulative data estimated based on 2001 monthly average.

5/ Source: Platts Metals Week.

6/ Source: U.S. Census Bureau.

7/ Copper content.

TABLE 2
MINE PRODUCTION OF RECOVERABLE COPPER IN THE UNITED STATES 1/

(Metric tons)

Period	Recoverable copper			Contained copper		
	Arizona	Others 2/	Total	Electrowon	Concentrates 3/	Total
2001:						
December	75,900	35,800	112,000	54,200	59,100	113,000
Year	885,000	457,000	1,340,000	628,000	732,000	1,360,000
2002:						
January	65,400	28,600	94,100	52,700	42,500	95,300
February	59,200	31,000	90,300	45,700	45,900	91,500
March	66,100	35,200	101,000	51,400	51,200	103,000
April	61,100	32,800	93,900	49,600	45,500	95,100
May	66,900	29,900	96,800	50,700	47,500	98,200
June	62,800	29,800	92,600	50,400	43,400	93,800
July	63,000	29,700	92,700	50,300	43,400	93,700
August	64,400	28,400	92,800	50,100	43,900	94,000
September	62,200	34,500	96,600	48,300	49,700	98,000
October	61,300	32,000 r/	93,300 r/	47,700	46,800 r/	94,500 r/
November	60,900	32,800	93,700	45,600	49,400	95,000
December	64,900	30,500	95,400	49,000	47,700	96,700
January - December	758,000	375,000	1,130,000	592,000	557,000	1,150,000

r/ Revised.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes production from Alaska, Idaho, Missouri, Montana, Nevada, New Mexico, and Utah.

3/ Includes copper content of precipitates and other metal concentrates.

TABLE 3
COPPER PRODUCED AT SMELTERS IN
THE UNITED STATES, BY SOURCE 1/ 2/

(Metric tons, copper content)

Period	Anode production
2001:	
December	79,600
Year	919,000
2002:	
January	64,300
February	50,300
March	61,900
April	60,400
May	62,200
June	55,400
July	50,400
August	50,300
September	54,400
October	59,800
November	57,500
December	56,500
January - December	683,000

1/ Includes blister, anode and copper from primary or secondary sources.

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 4
PRODUCTION OF REFINED COPPER, BY SOURCE AND METHOD OF RECOVERY 1/

(Metric tons)

Period	Primary materials				Scrap	Total refined
	Electrolytic 2/		Electrowon	Total		
	Domestic 3/	Foreign				
2001:						
December	74,700	14,800	54,200	144,000	5,980	150,000
Year	808,000	192,000	628,000	1,630,000	172,000	1,800,000
2002:						
January	66,100	10,600	52,700	129,000	4,290 r/	134,000 r/
February	57,900	8,410	45,700	112,000	5,020 r/	117,000 r/
March	55,900	10,700	51,400	118,000	6,430 r/	124,000 r/
April	62,300	10,300	49,600	122,000	7,200 r/	129,000 r/
May	76,100	W	50,700	127,000	7,590 r/	134,000 r/
June	70,000	W	50,400	120,000	7,090 r/	128,000
July	74,100	W	50,300	124,000	5,500 r/	130,000 r/
August	67,600	W	50,100	118,000	5,880 r/	124,000 r/
September	66,100	W	48,300	114,000	4,820 r/	119,000 r/
October	73,100	W	47,700	121,000	6,290 r/	127,000
November	67,900 r/	W	45,600	113,000 r/	5,090 r/	119,000 r/
December	64,600	W	49,000	114,000	3,930	117,000
January - December	801,000	40,000 4/	592,000	1,430,000	69,100	1,500,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Domestic."

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Based on source of material at smelter level.

3/ Includes fire-refined copper.

4/ January - April only; excludes withheld data.

TABLE 5
COPPER RECOVERABLE IN UNALLOYED AND ALLOYED FORM FROM PURCHASED COPPER-BASE SCRAP 1/

(Metric tons, copper content)

Period	Refineries 2/		Ingot makers 3/		Brass and wire-rod mills		Foundries, etc. 3/		Total 4/
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
	2001:								
December	1,840	4,140	2,310 r/	7,860 r/	58,500	1,880	1,980 r/	3,420 r/	82,000
Year	35,800	137,000	27,700 r/	94,300 r/	707,000	19,800	23,700 r/	41,100 r/	1,090,000
2002:									
January	3,110	1,180 r/	2,310 r/	7,860 r/	61,300 r/	1,790	1,980 r/	3,420 r/	82,900 r/
February	3,370 r/	1,640 r/	2,310 r/	7,860 r/	63,700 r/	1,820	1,980 r/	3,420 r/	86,100 r/
March	2,910	3,520 r/	2,310 r/	7,860 r/	66,100 r/	1,770	1,980 r/	3,420 r/	89,800 r/
April	3,330 r/	3,860 r/	2,310 r/	7,860 r/	64,700 r/	904	1,980 r/	3,420 r/	88,400 r/
May	3,740 r/	3,850 r/	2,310 r/	7,860 r/	65,600 r/	1,840	1,980 r/	3,420 r/	90,600 r/
June	3,430	3,650 r/	2,310 r/	7,860 r/	70,800 r/	1,780	1,980 r/	3,420 r/	95,200
July	2,810 r/	2,690 r/	2,310 r/	7,860 r/	66,200 r/	1,720	1,980 r/	3,420 r/	89,000 r/
August	3,400	2,480 r/	2,310 r/	7,860 r/	69,500 r/	1,570	1,980 r/	3,420 r/	92,500 r/
September	2,940 r/	1,870 r/	2,310 r/	7,860 r/	69,000 r/	1,190	1,980 r/	3,420 r/	90,600 r/
October	2,570 r/	3,720 r/	2,310 r/	7,860 r/	59,300 r/	1,080	1,980 r/	3,420 r/	82,200 r/
November r/	2,080	3,010	2,310	7,860	59,700	2,110	1,980	3,420	82,400
December	1,980	1,950	2,310	7,860	62,100	1,110	1,980	3,420	82,700
January - December	35,700	33,400	27,700	94,300	778,000	18,700	23,700	41,100	1,050,000

r/ Revised.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Electrolytically refined and fire-refined scrap based on source of material at smelter level.

3/ Monthly data and 2002 cumulative data estimated based on 2001 annual data.

4/ Does not include an estimate, based on reported 2001 data, of 3,189 tons per month from new scrap and 2,018 tons per month from old scrap of copper recovered from scrap other than copper-base.

TABLE 6
 PRODUCTION, SHIPMENTS, AND STOCKS OF BRASS AND WIRE-ROD MILL SEMIFABRICATES 1/

(Metric tons, gross weight)

Period	Production		Shipments		Stocks, end of period	
	Brass mills	Wire-rod mills	Brass mills	Wire-rod mills	Brass mills	Wire-rod mills
2001:						
December	113,000	134,000	111,000	134,000	54,200	27,900
Year	1,470,000	1,890,000	1,470,000	1,880,000	XX	XX
2002:						
January	122,000 r/	146,000	125,000	143,000	49,500	30,300
February	121,000 r/	139,000	122,000 r/	134,000	48,500	35,600
March	130,000 r/	148,000	130,000	145,000	48,900	38,800
April	130,000	155,000	130,000	157,000	48,800	36,400
May	130,000 r/	155,000	131,000 r/	158,000	48,200	33,000
June	133,000 r/	139,000	132,000 r/	143,000	51,900	28,500
July	122,000 r/	144,000	123,000	147,000	51,400	25,400
August	131,000 r/	148,000	131,000 r/	152,000	51,900	21,500
September	127,000	145,000	125,000	148,000 r/	54,600	18,600 r/
October	130,000	158,000 r/	128,000 r/	155,000 r/	57,200 r/	20,900 r/
November	117,000	138,000	119,000	129,000 r/	54,800 r/	28,900 r/
December	109,000	108,000	107,000	108,000	56,000	29,000
January - December	1,500,000	1,720,000	1,500,000	1,720,000	XX	XX

r/ Revised. XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 7
 CONSUMPTION OF REFINED COPPER 1/

(Metric tons)

Period and item	Wire-rod mills	Brass mills	Other plants 2/	Total
2001:				
December	132,000	41,800	4,950 r/	179,000
Year	1,940,000	623,000	59,400 r/	2,620,000 r/
2002:				
January	143,000	45,000 r/	4,950 r/	193,000 r/
February	140,000	47,400 r/	4,950 r/	192,000 r/
March	149,000	52,100 r/	4,950 r/	206,000
April	157,000	52,300 r/	4,950 r/	214,000
May	157,000	56,100 r/	4,950 r/	218,000 r/
June	143,000	55,400 r/	4,950 r/	203,000 r/
July	150,000	49,900 r/	4,950 r/	204,000
August	157,000	52,000 r/	4,950 r/	214,000 r/
September r/	148,000	51,600	4,950	205,000
October r/	155,000	50,900	4,950	210,000
November r/	144,000	46,900	4,950	196,000
December:				
Cathodes	115,000	29,300	1,140	145,000
Wire bars	--	--	(3/)	(3/)
Ingots and ingot bars	--	1,520	1,690	3,220
Cakes and slabs	--	(3/)	(3/)	(3/)
Billets and other	W	10,100	2,120	12,200
Total	115,000	40,900	4,950	161,000
January - December	1,760,000	601,000	59,400	2,420,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Cathodes". -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Consumption by ingot makers, chemical plants, foundries, and miscellaneous manufacturers is estimated based on 2001 annual data.

3/ Withheld to avoid disclosing company proprietary data; included with "Billets and other."

TABLE 8
U.S. APPARENT CONSUMPTION OF COPPER 1/

(Metric tons)

Period	Refined copper production	Copper in old scrap 2/	Refined general imports 3/	Refined exports 3/	Stock change during period	Apparent consumption
2001:						
January - November	1,480,000 r/	297,000 r/	1,100,000	25,200	561,000	2,290,000 r/
December	144,000	19,300 r/	101,000	571	56,600	207,000 r/
Year	1,630,000	316,000 r/	1,200,000	25,800	617,000	2,500,000 r/
2002:						
January	129,000	16,300 r/	134,000	393	56,000 r/	223,000 r/
February	112,000	16,800 r/	113,000	699	31,900 r/	209,000 r/
March	118,000	18,600 r/	64,300	3,150	20,100 r/	178,000 r/
April	122,000	18,100 r/	105,000	652	16,900 r/	228,000 r/
May	127,000	19,000 r/	70,200	814	(15,000) r/	230,000 r/
June	120,000	18,700 r/	79,500	6,770	(33,900) r/	246,000 r/
July	124,000	17,700 r/	83,500	7,690	13,500	204,000 r/
August	118,000	17,400 r/	98,200	2,550	(7,350) r/	238,000 r/
September	114,000	16,400 r/	64,000	1,320	(4,620) r/	198,000 r/
October	121,000	18,100 r/	91,500	606	(14,300) r/	244,000 r/
November	113,000 r/	18,400 r/	74,900	506	6,190 r/	200,000
December	114,000	16,400	NA	NA	4,920	NA
January - November	1,320,000	195,000	979,000	25,200	69,300	2,400,000

r/ Revised. NA Not available.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes reported monthly production of copper from old scrap of copper-base, an estimate for annual reporters, and a monthly average of copper from non-copper-base materials based on 2001 data.

3/ Source: U.S. Census Bureau.

TABLE 9
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP 1/

(Metric tons, gross weight)

Period	Smelters and refineries		Ingot makers 2/		Brass and wire-rod mills 3/		Foundries, etc. 2/		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
2001:									
December	1,950 r/	3,900 r/	3,690 r/	10,900 r/	73,900	1,930	3,500 r/	3,700 r/	103,000
Year	59,300 r/	137,000 r/	44,300 r/	131,000 r/	898,000	20,400	42,000 r/	44,400 r/	1,380,000 r/
2002:									
January	2,390	1,190 r/	3,690 r/	10,900 r/	77,600 r/	1,840	3,500 r/	3,700 r/	105,000
February	3,410	1,660 r/	3,690 r/	10,900 r/	80,400 r/	1,880	3,500 r/	3,700 r/	109,000 r/
March	2,940	3,740 r/	3,690 r/	10,900 r/	83,500 r/	1,830	3,500 r/	3,700 r/	114,000 r/
April	3,370 r/	4,120 r/	3,690 r/	10,900 r/	81,500 r/	951	3,500 r/	3,700 r/	112,000 r/
May	3,800 r/	4,060 r/	3,690 r/	10,900 r/	82,700 r/	1,900	3,500 r/	3,700 r/	114,000 r/
June	3,470	3,970 r/	3,690 r/	10,900 r/	89,300 r/	1,840	3,500 r/	3,700 r/	120,000 r/
July	2,840	2,900 r/	3,690 r/	10,900 r/	83,700 r/	1,770	3,500 r/	3,700 r/	113,000
August	3,450	2,580 r/	3,690 r/	10,900 r/	87,200 r/	1,630	3,500 r/	3,700 r/	117,000 r/
September	3,000	1,960 r/	3,690 r/	10,900 r/	87,400 r/	1,250	3,500 r/	3,700 r/	115,000
October	2,610	2,490 r/	3,690 r/	10,900 r/	74,900 r/	1,130	3,500 r/	3,700 r/	103,000
November	2,100	3,270 r/	3,690 r/	10,900 r/	74,400 r/	2,160	3,500 r/	3,700 r/	104,000 r/
December	2,100	1,990	3,690	10,900	77,700	1,160	3,500	3,700	105,000
January - December	35,500	33,900	44,300	131,000	980,000	19,300	42,000	44,400	1,330,000

r/ Revised.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Monthly data and 2002 cumulative data estimated from 2001 annual data.

3/ Consumption at brass and wire-rod mills assumed equal to receipts.

TABLE 10
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP 1/ 2/

(Metric tons, gross weight)

Scrap type and processor	2001	2002			Year
		October	November	December	
No. 1 wire and heavy:					
Smelters and refiners	82,600 r/	6,460 r/	4,400 r/	5,830	73,800
Brass and wire-rod mills	395,000	31,100 r/	34,600 r/	35,100	430,000
No. 2 mixed heavy and light:					
Smelters and refiners	103,000	2,520 r/	4,840 r/	2,130	42,100
Brass and wire-rod mills	5,340	795 r/	674 r/	398	6,630
Total unalloyed scrap:					
Smelters and refiners	186,000 r/	8,980 r/	9,250 r/	7,970	116,000
Brass and wire-rod mills	400,000	31,900 r/	35,300 r/	35,500	436,000
Red brass: 3/					
All plants	56,300 r/	4,410 r/	4,140 r/	3,990	52,900
Leaded yellow brass:					
All plants	352,000 r/	30,500 r/	28,700 r/	24,900	356,000
Yellow and low brass:					
All plants	111,000 r/	3,800 r/	3,810 r/	10,700	108,000
Cartridge cases and brass:					
Smelters and refiners	W	W	W	W	W
Brass mills	35,500	7,840 r/	7,040 r/	6,250	70,300
Auto radiators:					
Smelters and refiners	45,400 r/	3,470 r/	3,470 r/	3,470	41,600
Bronzes:					
Smelters and refiners	11,800 r/	983 r/	983 r/	983	11,800
Brass mills	8,300	1,040 r/	1,020 r/	1,030	12,600
Nickel-copper alloys:					
All plants	19,300 r/	952 r/	840 r/	836	15,300
Low grade and residues:					
Smelters and refiners	50,000	1,160 r/	1,160 r/	1,160	13,900
Other alloy scrap: 4/					
Smelters and refiners 5/	8,580 r/	182 r/	182 r/	182	2,190
Brass mills	5,570	580 r/	583 r/	579	6,980
Total alloyed scrap:					
Smelters and refiners	185,000	10,700	10,700	10,700	128,000
Brass mills	518,000	44,200 r/	41,300 r/	43,300	563,000
Total scrap:					
Smelters and refiners	371,000 r/	19,700 r/	19,900 r/	18,700	244,000
Brass and wire-rod mills	919,000	76,100 r/	76,500 r/	78,900	1,000,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Other alloy scrap: Smelters and refiners."

1/ Does not include: consumption by foundries, chemical plants, and miscellaneous manufacturers, estimated to total about 7,260 tons of scrap per month in 2001; monthly data include estimates of about 14,600 tons of scrap per month consumed by ingot makers and several smelters that report on an annual basis.

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Includes composition turnings, silicon bronze, zincy bronze, railroad car boxes, cocks and faucets, gilding metal, and commercial bronze.

4/ Includes refinery brass, beryllium copper, phosphor copper, and aluminum bronze.

5/ Includes items indicated by symbol W.

TABLE 11
COPPER STOCKS AT END OF PERIOD 1/

(Metric tons)

Period	Crude copper 2/	Refined copper					LME 6/	Total refined
		Refineries 3/	Wire rod mills 3/	Brass mills 3/	Other 4/	Comex 5/		
2001:								
December	98,000	28,600	27,600	25,500	3,490 r/	244,000	617,000	956,000 r/
2002:								
January	98,900 r/	26,500	42,100	27,400 r/	3,490 r/	258,000	654,000	1,010,000
February	89,000 r/	28,700	26,100	27,200 r/	3,490 r/	275,000	683,000	1,040,000
March	95,800 r/	22,100	24,200	26,000 r/	3,490 r/	284,000	704,000	1,060,000
April	90,100 r/	17,400	31,900	25,400 r/	3,490 r/	296,000	707,000	1,080,000
May	91,900 r/	16,100 r/	26,800	24,500 r/	3,490 r/	304,000	691,000	1,070,000 r/
June	88,700 r/	16,500	20,700	22,800 r/	3,490 r/	322,000	646,000	1,030,000
July	101,000 r/	15,500	25,500	27,200 r/	3,490 r/	338,000	636,000	1,050,000 r/
August	81,500 r/	12,100 r/	24,600	28,500 r/	3,490 r/	341,000	628,000	1,040,000
September	76,700 r/	11,600	27,100 r/	26,200 r/	3,490 r/	344,000	621,000	1,030,000
October	76,500 r/	10,600	29,300 r/	22,200 r/	3,490 r/	346,000	607,000	1,020,000 r/
November	76,300 r/	14,400	21,200 r/	32,300 r/	3,490 r/	347,000 r/	607,000 r/	1,030,000
December	44,400	11,700	23,000	28,700	3,490	362,000	601,000	1,030,000

r/ Revised.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Copper content of blister and other materials in transit and in process of refining.

3/ Stocks of refined copper as reported; no estimates are made for nonrespondents.

4/ Monthly estimates based on reported and 2001 annual data, comprising stocks at ingot makers, chemical plants, foundries, and miscellaneous manufacturers.

5/ Commodity Exchange Inc., New York.

6/ London Metal Exchange Ltd., U.S. warehouses.

TABLE 12
AVERAGE PRICE OF COPPER IN THE UNITED STATES AND
ON THE LONDON METAL EXCHANGE

(Cents per pound)

Period	U.S. producers delivered price cathode 1/	Comex first position 2/	LME cash price Grade A
2001:			
December	72.050	67.832	66.740
Year	76.854	72.567	71.574
2002:			
January	73.944	69.786	68.202
February	76.384	72.226	70.831
March	78.683	74.525	72.779
April	76.966	73.107	72.118
May	77.378	73.220	72.362
June	80.386	76.228	74.715
July	76.487	72.329	72.082
August	71.981	67.823	67.097
September	71.863	67.705	67.057
October	72.319	68.161	67.286
November	76.729	72.571	71.758
December	76.541	72.383	72.365
Year	75.805	71.672	70.721

1/ Listed as "U.S. producer cathode."

2/ Listed as "Comex high grade first position."

Sources: Platts Metals Week and American Metal Market.

TABLE 13
NEW YORK AVERAGE BUYING PRICES FOR COPPER SCRAP

(Cents per pound)

Month	Brass mills No. 1 scrap	Refiners No. 2 scrap	Dealers (New York)	
			No. 2 scrap	Red brass turnings and borings
2001:				
December	65.87	54.47	41.47	37.00
Year	69.57	58.90	48.71	40.77
2002:				
January	67.12	55.40	41.48	37.00
February	69.45	57.34	43.00	37.00
March	72.19	59.62	43.71	37.00
April	71.82	58.80	44.00	37.00
May	71.98	60.39	44.00	37.00
June	74.78	71.38	44.00	37.00
July	71.91	60.59	44.00	37.00
August	66.89	55.66	42.27	37.00
September	66.80	55.68	40.80	37.00
October	66.83	56.70	39.09	37.00
November	71.38	60.50	41.00	37.00
December	71.60	61.31	41.00	37.00
Year	70.23	59.45	42.36	37.00

Source: American Metal Market.

TABLE 14
U.S. IMPORTS FOR CONSUMPTION OF COPPER (UNMANUFACTURED), BY CLASS 1/

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	2002			2002			2002			2002		
	2001	January - November	November 2/	2001	January - November	November 2/	2001	January - November	November 2/	2001	January - November	November 2/
Brazil	--	--	--	--	--	--	--	--	--	12,000	--	37,400
Canada	7,210	--	8,350	43	--	75	79,700	6,730	76,400	270,000	19,200	218,000
Chile	19,600	--	91,100	--	--	--	87,700	4,160	33,300	174,000	20,500	232,000
Indonesia	6,010	--	2,910	--	--	--	--	--	--	--	--	--
Italy	--	--	--	--	--	--	12,200	--	--	--	--	--
Kazakhstan	--	--	--	--	--	--	--	--	--	82,400	--	2,060
Malayasia	--	--	--	25	14	16	--	--	--	--	--	--
Mexico	2,550	4	4	317	24	290	48,900	3,730	14,400	131,000	5,690	51,500
Namibia	--	--	--	--	--	--	6,840	--	6,340	--	--	--
Peru	11,600	--	5,960	--	--	--	22,600	--	4,730	280,000	27,800	261,000
Philippines	--	--	--	--	--	--	4,990	--	--	999	--	--
Russia	--	--	--	--	--	--	115	--	--	22,800	6,360	28,800
Spain	--	--	--	--	--	--	4,420	--	--	--	--	--
Taiwan	--	--	17	560	81	555	--	--	--	34	(3/)	(3/)
Turkey	--	--	2,910	--	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	29	(3/)	1	39	912	2,130
Other	--	--	2	(3/)	r/	2	3,480	70	70	17,400	r/ 1,490	21,400
Total	47,000	4	111,000	945	119	939	271,000	14,700	135,000	991,000	82,000	854,000

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes revisions to previous months' data.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau; data adjusted by the U.S. Geological Survey.

TABLE 13
NEW YORK AVERAGE BUYING PRICES FOR COPPER SCRAP

(Cents per pound)

Month	Brass mills No. 1 scrap	Refiners No. 2 scrap	Dealers (New York)	
			No. 2 scrap	Red brass turnings and borings
2001:				
December	65.87	54.47	41.47	37.00
Year	69.57	58.90	48.71	40.77
2002:				
January	67.12	55.40	41.48	37.00
February	69.45	57.34	43.00	37.00
March	72.19	59.62	43.71	37.00
April	71.82	58.80	44.00	37.00
May	71.98	60.39	44.00	37.00
June	74.78	71.38	44.00	37.00
July	71.91	60.59	44.00	37.00
August	66.89	55.66	42.27	37.00
September	66.80	55.68	40.80	37.00
October	66.83	56.70	39.09	37.00
November	71.38	60.50	41.00	37.00
December	71.60	61.31	41.00	37.00
Year	70.23	59.45	42.36	37.00

Source: American Metal Market.

TABLE 14
U.S. IMPORTS FOR CONSUMPTION OF COPPER (UNMANUFACTURED), BY CLASS 1/

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined			
	2002			2002			2002			2002			
	2001	January - November	November 2/	2001	January - November	November 2/	2001	January - November	November 2/	2001	January - November	November 2/	
Brazil	--	--	--	--	--	--	--	--	--	12,000	--	37,400	
Canada	7,210	--	8,350	43	--	75	79,700	6,730	76,400	270,000	19,200	218,000	
Chile	19,600	--	91,100	--	--	--	87,700	4,160	33,300	174,000	20,500	232,000	
Indonesia	6,010	--	2,910	--	--	--	--	--	--	--	--	--	
Italy	--	--	--	--	--	--	12,200	--	--	--	--	--	
Kazakhstan	--	--	--	--	--	--	--	--	--	82,400	--	2,060	
Malayasia	--	--	--	25	14	16	--	--	--	--	--	--	
Mexico	2,550	4	4	317	24	290	48,900	3,730	14,400	131,000	5,690	51,500	
Namibia	--	--	--	--	--	--	6,840	--	6,340	--	--	--	
Peru	11,600	--	5,960	--	--	--	22,600	--	4,730	280,000	27,800	261,000	
Philippines	--	--	--	--	--	--	4,990	--	--	999	--	--	
Russia	--	--	--	--	--	--	115	--	--	22,800	6,360	28,800	
Spain	--	--	--	--	--	--	4,420	--	--	--	--	--	
Taiwan	--	--	17	560	81	555	--	--	--	34	(3/)	(3/)	
Turkey	--	--	2,910	--	--	--	--	--	--	--	--	--	
United Kingdom	--	--	--	--	--	--	29	(3/)	1	39	912	2,130	
Other	--	--	2	(3/)	r/	--	2	3,480	70	70	17,400	r/ 1,490	21,400
Total	47,000	4	111,000	945	119	939	271,000	14,700	135,000	991,000	82,000	854,000	

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes revisions to previous months' data.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau; data adjusted by the U.S. Geological Survey.

TABLE 15
U.S. EXPORTS OF COPPER (UNMANUFACTURED), BY CLASS 1/

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	2002			2002			2002			2002		
	2001	November	January - November	2001	November	January - November	2001	November	January - November	2001	November	January - November
Australia	--	--	11	12	--	5	65	11	77	17	--	1,650
Belgium	18	--	42	--	(2/)	(2/)	1,550	--	179	30	--	--
Canada	30,300	1,240	16,200	6,860	104	2,160	13,800	926	16,700	6,520	263	3,030
Chile	--	--	--	2	--	--	24	146	243	73	--	--
China	2,310	101	1,080	3	--	63	87	25	441	8,520	127	14,000
Egypt	--	--	--	--	--	--	2	--	--	2,160	--	2,200
France	1	--	--	64	--	2	2,130	--	100	62	--	42
Germany	443	--	28	50	--	74	982	20	202	169	--	65
Hong Kong	87	4	25	2	--	160	2,470	267	2,500	2,330	--	38
India	8	5	9	261	--	153	125	2	70	--	20	762
Israel	836	--	--	18	3	3	65	--	44	6	--	19
Italy	20	--	--	--	--	--	376	39	208	27	--	56
Japan	19	--	36	8	--	1,330	216	--	40	460	--	40
Korea, Republic of	699	--	197	1,090	5	40	1,320	153	656	78	37	505
Mexico	9,130	35	2,520	15,300	1,560	9,890	22	--	34	821	8	134
Netherlands	44	5	38	70	--	35	4	129	1,100	35	--	16
Peru	--	255	1,230	--	--	39	--	--	--	--	--	--
Philippines	--	--	--	--	--	3	96	22	5,880	--	--	3
Singapore	159	--	60	(2/)	--	(2/)	407	211	614	14	--	7
Sri Lanka (Ceylon)	--	--	--	--	--	--	--	--	80	--	25	100
Switzerland	--	--	--	1	--	7	--	2	6	2	19	23
Taiwan	347	21	61	50	--	97	1,130	20	942	146	--	1,610
Thailand	22	--	5	--	--	--	264	56	297	--	--	--
United Kingdom	280	8	16	49	--	65	451	60	444	457	--	527
Venezuela	501	--	--	--	--	--	5	--	8	140	--	205
Other	99	--	47	59 r/	8	67	455 r/	21	553	449 r/	7	177
Total	45,300	1,670	21,600	23,900	1,680	14,200	26,000	2,110	31,400	22,500	506	25,200

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 16
U.S. COPPER SCRAP TRADE 1/

(Metric tons, gross weight)

Country or territory	Imports						Exports					
	Unalloyed			Alloyed			Unalloyed			Alloyed		
	2002			2002			2002			2002		
	2001	November	January - November	2001	November	January - November	2001	November	January - November	2001	November	January - November
Belgium	--	--	--	388	--	--	1,260	172	2,010	1,470	762	6,010
Canada	10,600	694	13,300	45,800	3,010	35,500	38,700	1,430	18,800	33,100	1,220	18,600
Chile	119	354	590	474	--	78	78	54	144	--	--	66
China	41	--	--	15	--	547	156,000	13,700	109,000	136,000	18,400	138,000
Colombia	--	--	--	899	28	593	--	--	--	18	--	2
Costa Rica	868	123	1,010	635	49	405	--	--	--	3	--	2
Dominican Republic	1,550	118	1,290	1,570	59	830	--	--	--	--	--	--
France	--	--	--	188	(2/)	102	11	301	1,830	59	348	2,140
Germany	27	8	13	62	248	941	6,500	933	13,500	9,480	1,300	15,500
Guatemala	499	40	500	1,990	85	1,090	--	--	--	--	--	(2/)
Honduras	484	57	368	656	55	323	--	--	--	--	--	--
Hong Kong	--	--	3	--	--	--	4,300	33	7,130	5,440	675	5,770
India	--	--	--	--	--	(2/)	2,770	225	3,710	33,400	3,580	40,600
Italy	309	--	116	--	--	--	117	--	30	143	207	456
Jamaica	283	6	316	470	5	225	--	--	--	--	--	--
Japan	169	16	83	--	23	151	13,800	953	10,500	13,200	970	8,120
Korea, Republic of	--	--	19	20	--	40	24,400	830	13,100	17,800	1,760	17,100
Mexico	13,500	650	8,690	24,000	1,590	16,800	2,760	121	2,140	4,370	12	246
Nicaragua	276	9	280	54	17	148	--	--	--	--	--	--
Panama	161	4	168	804	83	753	--	--	--	--	--	79
Peru	347	--	--	112	--	--	--	--	--	--	--	--
Switzerland	--	--	--	45	37	207	596	56	172	3,720	--	1,290
Taiwan	--	--	15	554	--	355	9,120	754	9,270	5,870	534	8,210
United Kingdom	64	--	118	919	138	1,690	36	17	17	570	1	1,360
Venezuela	42	--	54	874	229	1,890	--	--	--	--	--	--
Other	873 r/	27	558	3,840 r/	156	2,380	1,450 r/	125	2,460	7,170 r/	675	5,960
Total	30,300	2,110	27,400	84,400	5,810	65,000	262,000	19,700	193,000	272,000	30,500	270,000

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: U.S. Census Bureau.