

Mineral Industry Surveys

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NICKEL IN JANUARY 2007

Reported domestic nickel consumption in January, on a daily average basis, was 24% greater than the revised total for December 2006, according to the U.S. Geological Survey. Daily average use of nickel metal and ferronickel for stainless and heat resisting steels was 13% greater than the corresponding revised average for December 2006. Use of nickel metal to make superalloys (such as INCONEL 718 and WASPALOY) increased by 19% from revised December levels, on a daily average basis. The increase in the superalloy category was accompanied by a 32% increase in the "Other nickel & nickel alloys" category (such as INCONEL 600 and Nickel 200). Sales to plating companies averaged 28.7 metric tons per day (t/d), 28% greater than the revised December figure of 22.4 t/d. Percentages reported in this paragraph are based on data concealed to avoid revealing individual company proprietary data.

The United States imported 153,000 metric tons (t) of primary nickel during 2006, about 7% more than the 143,000 t for 2005. About 87%, or 133,000 t, of the primary nickel was Class I materials. Class I materials are refined products with a nickel content of 99% or greater (electrolytic cathode, briquets, granules, pellets, powders, rondelles, etc.). Trade data for January 2007 will appear in a subsequent report.

On January 31, stocks in London Metal Exchange (LME) warehouses worldwide totaled 3,366 t, the lowest end-of-month figure reported in at least 12 years. LME stocks have been minimal since mid-2006 owing to growing demand for

austenitic stainless steel in Asia (International Nickel Study Group, 2007). World prices reflected the critically low stock levels. The average LME cash price for January was \$36,795 per metric ton (\$16.690 per pound), a record high at that point in time.

Nickel consumers, producers, and traders continued to be concerned about tight nickel supplies and record high prices, as the LME cash price outpaced forecasts made only one or two months earlier (Metal Bulletin, 2007). Underlying market fundamentals remained strong and hedge funds continued to buy into the market. Nickel prices could remain high for some time if institutional investors do not exit the LME nickel futures market. The average LME three-months mean nickel price for January was \$34,832 per metric ton (\$15.799 per pound) (Markram, 2007; Platts Metals Week, 2007).

References Cited

- International Nickel Study Group, 2007, World nickel statistics: Lisbon, Portugal, International Nickel Study Group Monthly Bulletin, v. 16, no. 4, April, 91 p. including appendices. (Accessed May 7, 2007, via <http://www.insg.org/publics.aspx>.)
- Markram, Bianca, 2007, Nickel approaches \$40,000 per tonne as stocks plunge: Metal Bulletin, no. 8980, January 29, p. 14.
- Metal Bulletin, 2007, 2007 Base metals preview: Metal Bulletin, no. 8977, January 8, p. 6-7.
- Platts Metals Week, 2007, Nickel eyes \$40,000/mt as supply remains tight: Platts Metals Week, v. 78, no. 8, February 19, p. 15-16.

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE¹

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total	Total year to date
2006:					
January	6,730	831	71	7,630	7,630
February	6,360	842	67	7,270	14,900
March	6,370	776	68	7,220	22,100
April	6,510	788	59	7,350	29,500
May	6,500	850	59	7,410	36,900
June	6,520	758	59	7,340	44,200
July	6,170	677	52	6,900	51,100
August	6,370	788	59	7,210	58,300
September	6,090	823	57	6,970	65,300
October	6,300	851	57	7,210	72,500
November	6,030	709	52	6,790	79,300
December	5,170	655	52 [†]	5,880	85,200
January-December	75,100	9,350	712 [†]	85,200	XX
2007:					
January:					
Steel:					
Stainless and heat resisting	2,460	854	W	3,310	3,310
Alloy (excludes stainless)	272	--	--	272	272
Superalloys	1,230	--	W	1,230	1,230
Copper-nickel alloys	W	--	--	W	W
Electric, magnetic, and expansion alloys	12	--	--	12	12
Other nickel & nickel alloys	W	--	W	W	W
Cast iron	W	--	--	W	W
Electroplating (sales to platers)	880	--	W	880	880
Chemical and chemical uses	W	--	--	W	W
Other uses	1,520	--	55	1,580	1,580
Total reported	6,380 ²	854	55	7,290	7,290
Total all companies (calc) ³	XX	XX	XX	14,300	14,300

[†]Revised. W Withheld to avoid disclosing company proprietary data; included in "Other uses" category. XX Not applicable. -- Zero.

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

²Of consumption, 4,058 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

³Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (50.94%) to apparent primary consumption for 2004.

TABLE 2
ENDING STOCKS OF NICKEL (EXCLUSIVE OF SCRAP) HELD BY CONSUMERS,
BY FORM AND USE^{1,2}

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total
2006:				
January	1,830	300	153	2,290
February	1,960	354	154	2,470
March	1,880	409	154	2,440
April	2,100	332	170	2,610
May	2,490	292	154	2,940
June	2,250	307	145	2,710
July	2,010	333	151	2,500
August	1,990	439	166	2,590
September	1,840	413	151	2,410
October	1,550	364	153	2,070
November	1,780	364	165	2,300
December ^f	1,890	380	159	2,430
2007				
January:				
Steel (stainless, heat resisting and alloy)	766	414	(3)	1,180
Nonferrous alloys ⁴	1,130	W	(3)	1,130
Foundry (cast irons)	(3)	W	--	(3)
Chemical (catalysts, ceramics, plating salt, etc.) and unspecified uses	85	W	176	261
Total	1,980	414	176	2,570

^fRevised. W Withheld to avoid disclosing company proprietary data. -- Zero.

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

²Stocks held by companies that consume nickel in more than one end-use category are credited to the major category. Stocks are subject to revisions owing to inventory adjustments.

³Included in the "Chemical and unspecified uses" category.

⁴Includes superalloys, nickel-copper and copper-nickel alloys, permanent magnet alloys, and other nickel alloys.

TABLE 3
CONSUMPTION AND ENDING STOCKS OF PURCHASED SECONDARY NICKEL, BY USE¹

(Metric tons, nickel content)

Period	Consumption			Stocks		
	Ferrous scrap ²	Nonferrous scrap ³	Total scrap	Ferrous scrap ²	Nonferrous scrap ³	Total scrap
2006:						
January	3,710	702	4,410	2,600	54	2,660
February	4,130	646	4,780	2,850	45	2,900
March	4,290	794	5,090	2,930	44	2,980
April	5,250	693	5,950	2,660	49	2,710
May	4,340	644	4,980	2,760	54	2,810
June	3,840	836	4,670	3,090	44	3,130
July	4,450	658	5,100	3,110	57	3,170
August	5,560	705	6,260	2,720	50	2,770
September	5,930	741	6,680	2,350	47	2,400
October	5,040	590	5,630	2,470	58	2,530
November	NA	506	NA	NA	45	NA
December	NA	465	NA	NA	48	NA
January-December	46,500	7,980	53,500	XX	XX	XX
2007, January	NA	674	NA	NA	53	NA

NA Not available. XX Not applicable.

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

²Nickel content is calculated from an average nickel content and the reported gross weight of scrap.

³Combined consumption and stocks of aluminum-base, copper-base, and nickel-base scrap.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

Period and country of origin	Cathodes, pellets, and briquets	Powder and flakes	Ferro-nickel	Metal-lurgical-grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date ⁴	Wrought nickel
2005:										
December	7,310	423	877	110	608	731	291	10,400	159,000	128
January-December	110,000	8,120	19,200	1,540	7,170	8,340	3,620	159,000	XX	1,060
2006:										
January	11,800	971	864	80	651	717	307	15,400	15,400	76
February	9,740	575	1,310	178	379	771	435	13,400	28,800	74
March	12,300	695	1,530	67	567	817	369	16,400	45,200	124
April	12,900	730	1,300	121	621	1,100	287	17,100	62,200	83
May	10,400	1,170	1,090	107	561	1,370	279	15,000	77,200	99
June	10,900	648	1,050	67	713	1,500	326	15,200	92,400	174
July	9,460	802	1,530	98	731	1,540	215	14,400	107,000	105
August	11,000	785	1,200	80	543	1,620	290	15,500	122,000	88
September	10,100	739	1,020	72	418	1,150	336	13,800	136,000	78
October	8,150	542	1,220	161	575	1,060	358	12,100	148,000	88
November	10,300	513	932	99	564	881	311	13,600	162,000	61
December:										
Australia	1,280	21	--	--	10	--	--	1,310	15,500	1
Brazil	--	--	--	--	--	--	--	--	1,110	--
Canada	4,670	266	--	71	103	745	12	5,870	72,800	5
China	196	--	--	--	22	--	--	218	1,450	--
Colombia	--	--	195	--	--	31	(5)	226	3,300	--
Dominican Republic	--	--	1,150	--	--	1	--	1,150	9,360	--
Finland	90	7	--	--	--	1	36	134	6,840	--
France	77	--	--	--	42	--	9	128	2,510	23
Germany	--	10	--	--	9	--	18	37	1,010	24
Japan	(5)	17	22	--	31	--	33	103	1,160	1
Mexico	--	--	--	--	26	155	1	182	3,100	--
New Caledonia	--	--	200	--	--	--	--	200	1,810	--
Norway	626	--	--	--	--	--	--	626	14,800	--
Russia	312	80	--	--	--	--	--	392	29,200	--
South Africa	--	99	--	--	--	--	--	99	828	--
Sweden	--	--	--	--	--	--	--	--	40	(5)
United Kingdom	4	102	--	5	189	--	7	307	3,060	2
Zimbabwe	196	--	--	--	--	--	--	196	1,190	--
Other	--	7	--	--	94	24	52	177	4,140	3
Total	7,450	609	1,570	76	526	957	168	11,400	173,000	59
2006: January-December	125,000	8,780	14,600	1,210	6,850	13,500	3,680	173,000	XX	1,110

XX Not applicable. -- Zero.

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

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴May include revisions for prior months.

⁵Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

Period and country of destination	Cathodes, pellets, and briquets	Powder and flakes	Ferro- nickel	Metal- lurgical- grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date	Wrought nickel
2005:										
December	80	87	21	33	1,080	4,200	430	5,940	63,200	99
January-December	1,190	1,910	72	234	11,700	43,800	4,230	63,200	XX	1,340
2006:										
January	105	107	15	12	1,200	4,100	387	5,920	5,920	158
February	125	87	8	8	860	2,950	370	4,410	10,300	106
March	87	92	5	69	942	2,700	631	4,520	14,900	114
April	189	111	22	8	975	2,540	387	4,230	19,100	151
May	79	100	6	8	2,070	3,420	636	6,320	25,400	119
June	48	64	(4)	4	1,420	2,910	454	4,890	30,300	84
July	39	73	3	4	2,120	3,090	358	5,690	36,000	101
August	25	78	3	5	2,010	3,120	673	5,920	41,900	96
September	68	67	(4)	9	2,000	4,170 ^r	556	6,870 ^r	48,800 ^r	89
October	13	71	1	5	2,420	2,630	591	5,740	54,500 ^r	85
November	47	106	3	11	2,650	3,140	491	6,450	61,000 ^r	66
December:										
Australia	--	--	--	--	37	(4)	--	37	455	11
Belgium	--	1	--	--	--	2	2	5	590	1
Canada	1	13	--	--	721	140	135	1,010	14,100	8
China	--	1	--	--	2	469	18	490	14,100	12
Finland	--	--	--	--	--	10	--	10	3,910	--
Germany	--	16	--	--	214	5	34	269	1,170	2
India	--	1	--	--	10	502	1	514	2,060	(4)
Italy	--	1	--	--	--	7	4	12	1,050	(4)
Japan	--	12	--	1	1,340	60	6	1,410	10,300	6
Korea, Republic of	--	1	--	--	117	182	9	309	2,370	7
Mexico	55	3	--	--	(4)	--	15	73	1,080	1
Netherlands	--	--	--	--	13	27	5	45	821	1
South Africa	--	--	--	2	8	--	--	10	86	--
Sweden	--	--	--	--	33	--	1	34	355	--
Taiwan	--	3	--	--	18	1,130	15	1,170	7,520	1
United Kingdom	--	3	--	--	101	11	12	127	1,250	1
Other	1	16	--	4	(4)	797	132	950	6,340	10
Total	57	71	--	7	2,610	3,350	389	6,480	67,400	61
2006: January-December	882	1,030	67	150	21,300	38,100	5,920	67,400	XX	1,230

^rRevised. XX Not applicable. -- Zero.

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

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of origin	Unwrought alloyed ingot	Bars, rods, and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2005:									
December	429	295	552	221	35	183	243	1,960	23,300
January-December	4,840	3,740	6,580	3,150	350	1,850	2,790	23,300	XX
2006:									
January	557	379	478	354	6	204	137	2,110	2,110
February	434	292	550	276	2	198	335	2,090	4,200
March	1,040	398	516	302	41	335	204	2,840	7,040
April	400	427	472	224	25	251	127	1,930	8,960
May	404	338	596	262	17	382	266	2,270	11,200
June	486	338	524	259	31	373	276	2,290	13,500
July	578	581	526	242	10	457	182	2,580	16,100
August	705	522	427	338	3	217	133	2,350	18,400
September	373	281	501	272	14	183	143	1,770	20,200
October	517	464	492	390	34	316	160	2,370	22,600
November	336	482	755	355	26	237	133	2,330	24,900
December:									
Australia	147	--	5	--	--	7	(2)	159	2,680
Belgium	16	--	1	1	--	2	(2)	20	173
Canada	--	--	2	--	(2)	5	21	28	828
China	--	--	--	1	--	--	39	40	1,030
France	--	1	118	29	--	30	3	181	2,710
Germany	108	105	180	309	18	337	6	1,060	9,450
Italy	--	343	--	--	--	(2)	1	344	2,860
Japan	--	(2)	3	12	7	54	3	79	1,100
Mexico	--	--	(2)	--	--	(2)	10	10	48
Netherlands	--	(2)	--	2	--	--	6	8	113
South Africa	59	--	--	--	--	--	--	59	418
Sweden	--	--	112	6	--	6	--	124	2,890
United Kingdom	17	24	1	3	--	22	38	105	1,810
Other	4	12	9	--	--	2	22	49	1,080
Total	351	485	431	363	25	465	149	2,270	27,200
2006: January-December	6,180	4,990	6,270	3,640	233	3,620	2,240	27,200	XX

XX Not applicable. -- Zero.

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

²Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of destination	Unwrought alloyed ingot	Bars, rods, and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2005:									
December	762	1,510	65	282	3	243	267	3,130	37,700
January-December	10,400	15,000	1,440	4,200	119	3,000	3,580	37,700	XX
2006:									
January	472	1,460	67	358	35	645	251	3,280	3,280
February	411	1,650	91	321	19	277	336	3,110	6,390
March	1,040	1,800	63	473	33	281	360	4,050	10,400
April	955	1,730	71	371	30	245	246	3,650	14,100
May	687	1,610	95	394	19	236	326	3,360	17,400
June	550	1,650	75	426	21	226	286	3,230	20,700
July	317	1,230	61	391	16	194	261	2,470	23,100
August	606	1,460	95	400	16	234	292	3,110	26,200
September	814	1,350	62	443	14	494	207	3,380	29,600
October	829	1,430	66	412	21	1,170	253	4,180	33,800
November	488	1,170	80	361	14	182	223	2,520	36,300
December									
Australia	--	1	1	--	--	3	1	6	88
Belgium	10	264	5	17	--	4	(2)	300	4,240
Canada	27	76	9	21	1	46	14	194	2,510
China	4	114	1	105	--	6	11	241	2,850
France	84	284	2	14	--	(2)	4	388	4,960
Germany	2	153	3	17	(2)	(2)	2	177	1,770
India	--	8	2	7	--	2	1	20	329
Ireland	(2)	--	3	--	--	--	(2)	3	49
Israel	2	163	1	5	--	(2)	(2)	171	1,430
Italy	95	20	(2)	71	--	1	1	188	1,270
Japan	102	35	2	9	1	10	1	160	4,150
Korea, Republic of	4	9	2	61	(2)	5	1	82	972
Mexico	20	75	9	10	7	77	127	325	3,780
Netherlands	4	10	(2)	15	--	3	3	35	335
Singapore	5	7	1	14	(2)	16	2	45	364
Spain	1	2	--	18	--	(2)	(2)	21	150
Sweden	1	1	2	10	--	(2)	10	24	423
Switzerland	(2)	(2)	2	7	(2)	2	(2)	11	418
Taiwan	1	1	(2)	9	1	1	2	15	379
United Kingdom	25	175	5	72	2	6	4	289	5,050
Other	(2)	31	5	55	2	44	14	151	3,660
Total	387	1,430	55	537	14	226	198	2,850	39,200
2006: January-December	7,550	18,000	881	4,890	252	4,410	3,240	39,200	XX

XX Not applicable. -- Zero.

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

²Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8
NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

	Percent	
	Wrought	Cast
January 2007:		
Stainless and heat resisting steels	100	(1)
Alloy steels	100	(1)
Superalloys	91	9
Copper-nickel alloys	96	4
Other nickel-base alloys	100	(1)

¹Less than ½ unit.

TABLE 9
NICKEL PRICES

Date	Platts Metals Week				American Metal Market	American Metal Market	American Metal Market	
	Cathode NY Dealer \$/lb.	LME Cash mean ¹ \$/t	LME Cash mean ¹ \$/lb.	18/8 Stainless steel scrap free market \$/long ton (gw)	18/8 Stainless steel scrap Pittsburgh \$/long ton (gw)	304 Stainless steel scrap: solids,clips Pittsburgh ² \$/long ton (gw)	316 Stainless steel scrap: solids,clips Pittsburgh ² \$/long ton (gw)	
2006:								
Average for month of:								
January	6.408	14,549.643	6.600	1,379	1,275	XX	XX	
February	6.944	14,975.000	6.793	1,497	1,387	XX	XX	
March	6.949	14,893.043	6.755	1,499	1,493	XX	XX	
April	8.184	17,931.806	8.134	1,656	1,531	XX	XX	
May	9.425	21,064.524	9.555	1,909	1,813	XX	XX	
June	9.664	20,747.045	9.411	1,963	2,088	XX	XX	
July	11.750	26,568.571	12.051	2,275	2,138	XX	XX	
August	13.808	30,727.955	13.938	2,493	2,419	XX	XX	
September	13.634	30,117.381	13.661	2,534	2,681	XX	XX	
October	14.822	32,692.500	14.829	2,584	2,662	XX	XX	
November	14.535	32,099.773	14.560	2,561	XX	2,783	3,750	
December	15.657	34,559.079	15.676	2,728	XX	2,805	3,881	
Yearly average	10.982	24,243.860	10.997	2,090	2,090 ²	XX	XX	
2007:								
Average for week ending:								
January	5	15,409-16,144	33,819.375	15.340	2,750-2,800	XX	2,800-2,825	3,900-3,950
January	12	15,373-16,441	34,129.500	15.481	2,750-2,825	XX	2,925-2,950	4,100-4,200
January	20	16,506-17,072	36,193.500	16.417	2,800-2,900	XX	2,925-2,950	4,100-4,200
January	27	17,419-19,236	40,436.500	18.342	3,000-3,100	XX	2,925-2,950	4,100-4,200
February	2	18,235-19,095	41,041.000	18.616	3,000-3,100	XX	2,925-2,950	4,100-4,200
February	9	17,691-19,279	39,321.500	17.836	2,900-3,000	XX	3,150-3,175	4,200-4,300
February	16	17,923-19,372	40,132.500	18.204	3,100-3,225	XX	3,150-3,175	4,200-4,300
February	23	19,386-20,043	42,572.500	19.311	3,350-3,450	XX	3,150-3,175	4,200-4,300
March	2	20,541-21,466	44,529.500	20.198	3,450-3,550	XX	3,150-3,175	4,200-4,300
March	9	20,166-21,559	44,280.000	20.085	3,550-3,650	XX	3,475-3,500	4,850-4,900
March	16	21,434-23,362	47,989.000	21.767	3,800-3,925	XX	3,475-3,500	4,850-4,900
March	23	22,410-23,836	48,020.000	21.782	3,875-3,925	XX	3,475-3,500	4,850-4,900
March	30	21,638-21,729	45,517.500	20.646	3,800-3,850	XX	3,475-3,500	4,850-4,900
Average for month of:								
January		16.177	36,795.227	16.690	2,866	XX	2,913	4,105
February		18.309	41,171.125	18.675	3,141	XX	3,163	4,250
March		21.238	46,303.409	21.003	3,738	XX	3,488	4,875

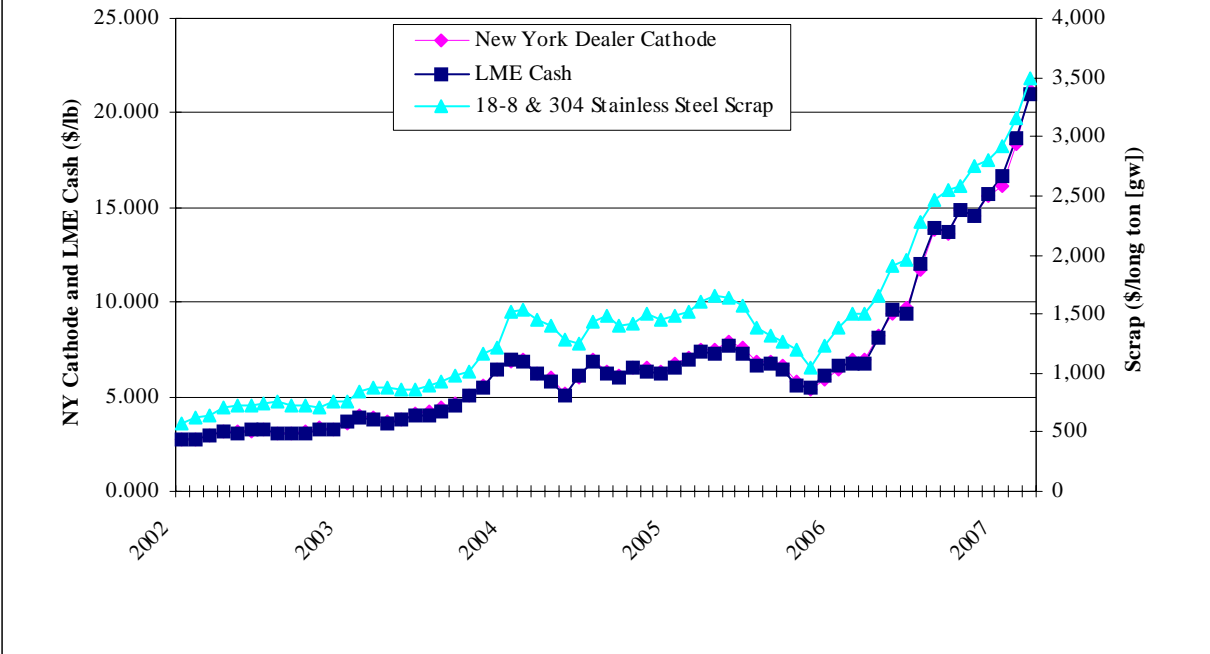
XX Not applicable.

¹Mean of the cash buyer price and the cash seller and settlement price.

²On November 1, 2006, American Metal Market (AMM) changed its price listings for austenitic stainless steel scrap. AMM has begun reporting prices for Type 316 solids & clips and has changed its listing for 18-8 bundles, solids & clips to Type 304 solids & clips. See November AMM Scrap Iron & Steel Prices section for details. All prices remain in dollars per gross (long) ton. More complete AMM price data will appear in subsequent U.S. Geological Survey Mineral Industry Surveys.

2002-2007 AVERAGE MONTHLY PRICES

[Derived from Platts Metals Week (MW) and American Metal Market (AMM) quotations]
 Stainless steel scrap: AMM 2002-2003; MW 2004-Oct. 2006; AMM 304, Nov. 2006 to present



2002-2007 STOCKS

End of month stocks for the London Metal Exchange (LME) actually represent opening reported stocks for the first business day of the following month

