

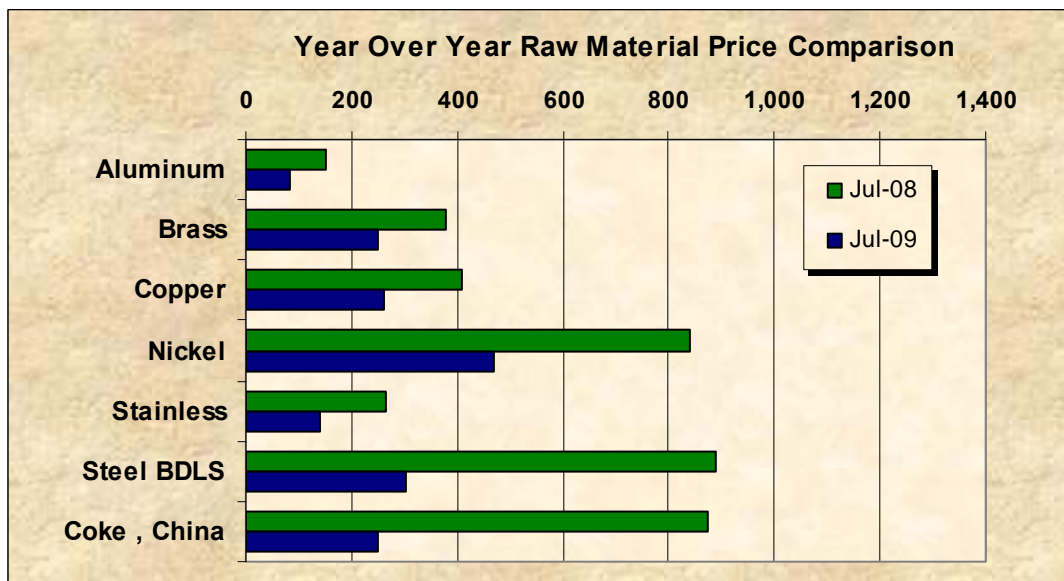


Material Impacts On The Precision Machining Industry

August 2009

Fasten Your Seat Belt Edition: Here We Go Again.

Executive Summary



Quick Summary: *The prices of the raw materials that we track have reversed course and are now higher than they were in January with two exceptions: AMM report of stainless steel 303 bars and China Coke. Year over year, all prices are down significantly. Price swing (Δ) July 2009 compared to May and January 2009:*

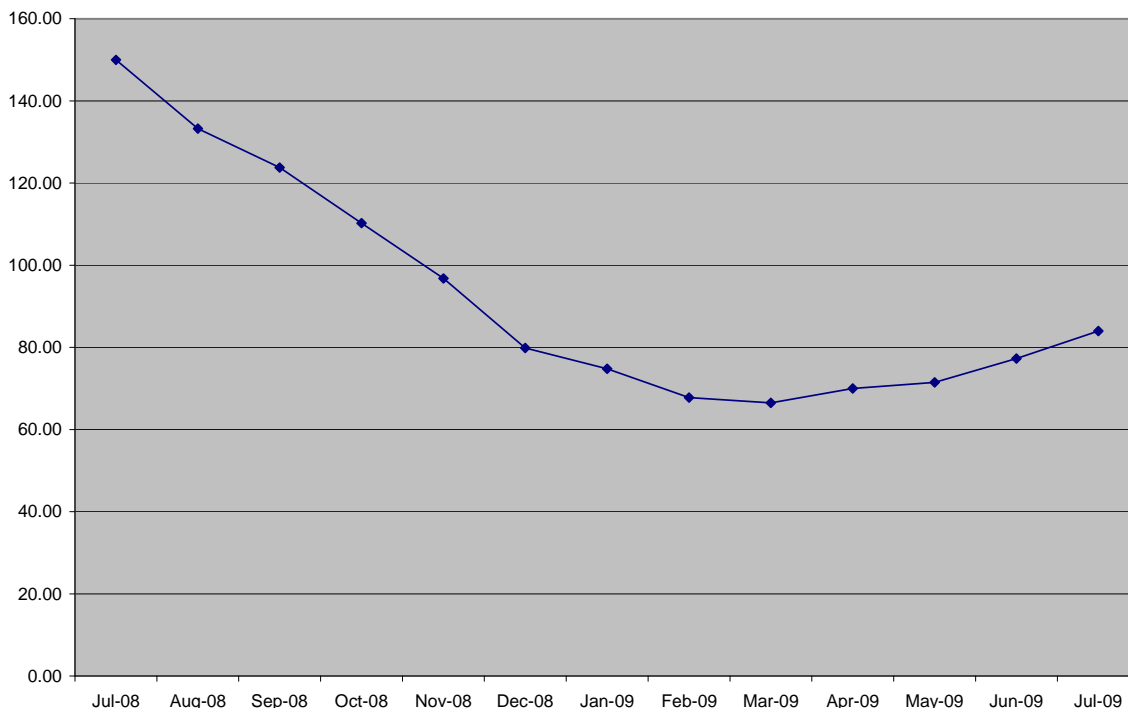
- Aluminum: Up 17% from May, up 12.3% from January*
- Copper, Up 19% from May, up 64% from January.*
- Nickel: Up 27% from May, up 4.44 % since January.*
- Steel, Busheling: Up 40% from May, up 18.3% from January.*
- China Coke, Up 2% from May, down 2.25% from January.*

In our research we found news stories indicating “hoarding” behaviors by Japanese and Taiwanese companies, indicating that price rises are expected and foreseeable globally. Based on demand, the escalation in copper prices appears to be fueled more by speculation than by industrial consumption. According to one press report there’s a complete “...disconnect between the price of the commodity (copper) and underlying demand.”

Our first glimpse of a steel surcharge for September for Electrical Steel was \$170/ton; \$8.50/cwt! (AK Steel website) Fasten those seatbelts!

Aluminum *(cents per pound Comex Spot close)*

Aluminum (Comex spot close)



Aluminum in May 2009 is selling for just 47% of the 2Q 2008 price of \$141.10.

Aluminum	Jun-09	Jul-09
Minimum	67.25	71.75
Maximum	77.25	84.00
\$ Δ	10.00	12.25
% Δ	14.9%	17.1%

U.S. service center aluminum shipments totaled 89,700 tons in June, a reduction of 39.1% from a year ago, while first-half shipments of 524,600 tons of aluminum were down 43.2% year-over-year. Inventories at the end of June totaled 269,800 tons, a reduction of 44.1% from a year ago and, at current shipping rates, equal to a 3.0-month supply.

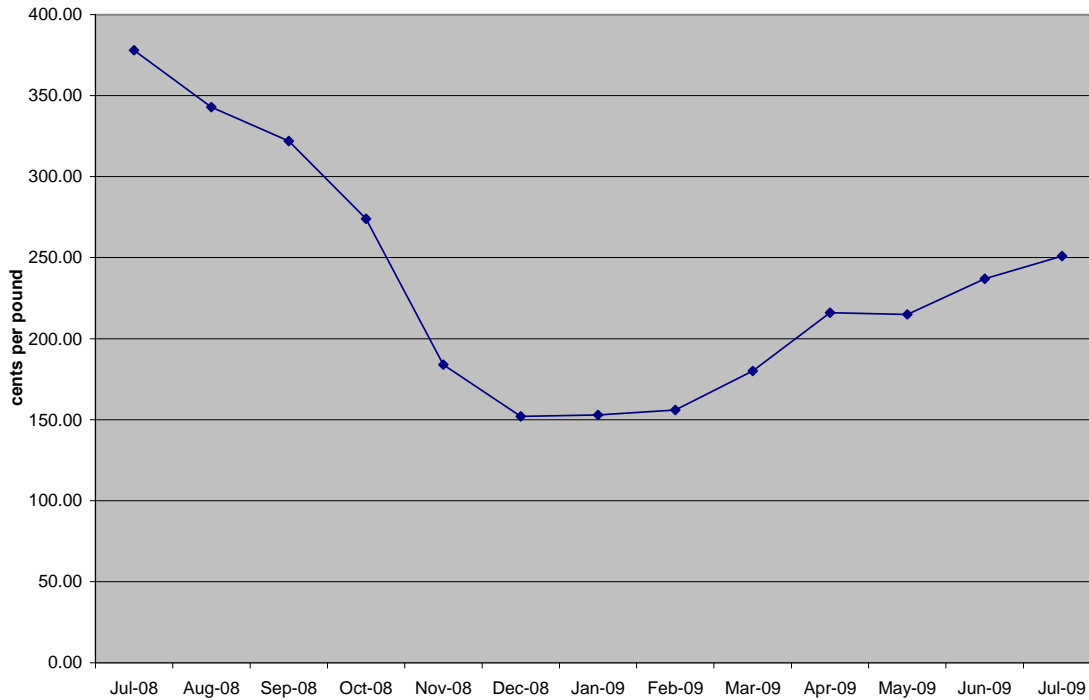
In Canada, aluminum shipments from metals service centers totaled 11,200 tons, 26.2% below volume for the same month last year. First-half aluminum shipments totaled 65,100 tons, a decline of 26.4%. Month-end inventories totaled 31,700 tons, a decline of 15.7% from a year ago and, at current shipping rates, equal to a 2.8-month supply.

Source: <http://www.ssci.org/news/details.aspx?ArticleID=146>

Average price in 2008: \$1.27 per pound

Brass (cents per pound copper brass mill number 1)

Brass (copper brass mill #1 scrap)



Brass and Copper are up ~64+ % since January 2009.

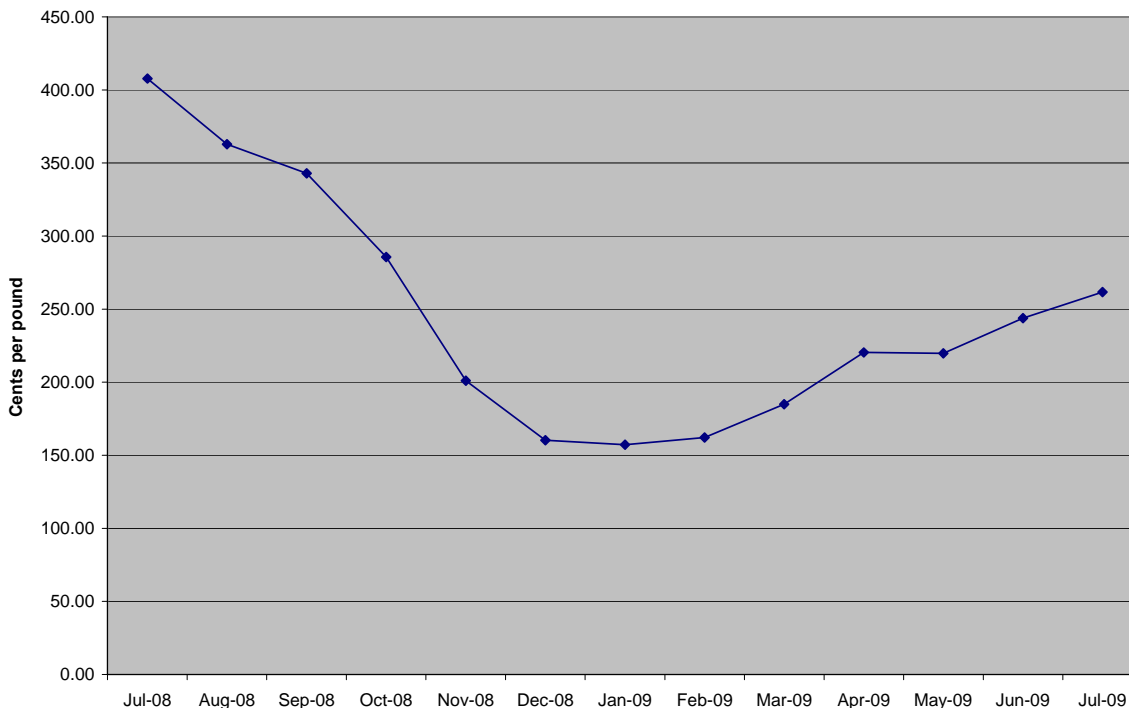
Brass	Jun-09	Jul-09
Minimum	207.00	204.00
Maximum	237.00	251.00
\$ Δ	30.00	47.00
% Δ	14.49%	23.0%

Average Price in 2008 (cents per pound): **322.50**

Exports of Copper scrap declined about 2 % in May according to US Commerce Department figures. China was the largest destination at 66000+ tons, 76% of scrap copper exports.

Copper cents (per pound Comex high grade cathode, spot close price)

Copper (comex High grade cathode spot close)



Price increases announced effective August 4, 2009. Surcharge remains Zero. The Freight Fuel surcharge now 24% over the standard freight rate.

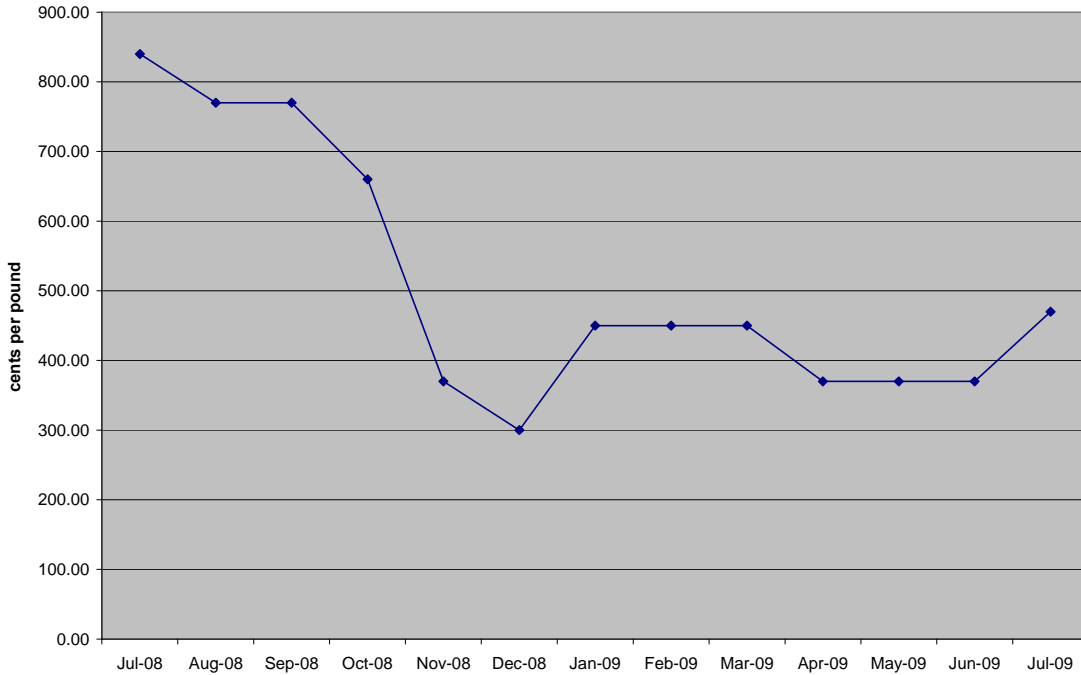
The metal selling price has increased 15 cents to \$3.31 per pound. Scrap price has increased 15 cents to \$3.10 per pound. Comex Copper tags are dizzyingly high. Up over 25% in just a week. We don't see the growth in consumption on our order books that the speculators seem to have built into the futures price.

Copper	Jun-09	Jul-09
Minimum	212.70	214.80
Maximum	243.80	261.65
\$ Δ	31.11	46.85
% Δ	14.6%	21.8%

Average price in 2008 (cents per pound): 338.99 per pound.

Nickel (cents per pound, New Clips and Solids Chicago)

Nickel scrap (new clips and solids)



Nickel has been level since March- now up 27%. Nickel is a substantial ingredient by weight in stainless steel barstock. At \$4.70 per pound, Nickel is currently still priced well below last years' average.

Nickel	Jun-09	Jul-09
Minimum	360.00	360.00
Maximum	370.00	470.00
\$ Δ	10	110
% Δ	2.8%	30.6%

Average price in 2008: \$7.83per pound.

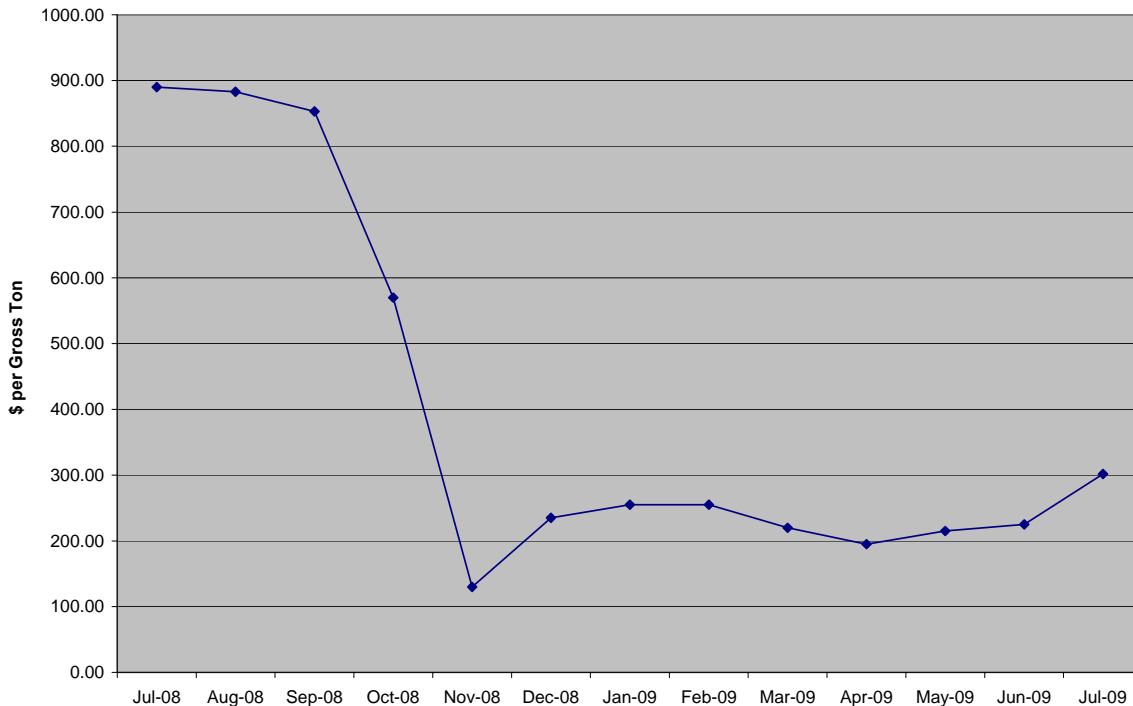
(Nickel is a key component of many steel alloy systems, stainless steels, superalloys, and many other nickel base materials.)

Stainless

Stainless Surcharges: Smolz + Bickenbach USA Stainless 303 per pound **Raw Materials Surcharge-July** \$0.43; August \$0.55 last posted on website. These are calculated on a two month lag. NAS Surcharges announced for September: 304: \$0.6637; 316:\$1.0092

Steel (dollars per gross ton, Number 1 Busheling composite, Chicago, Cleveland, and Pittsburgh)

Steel Scrap (#1 Busheling)



Surcharges: August 2009 Surcharges for Cold Finished Bars (per CWT) Scrap: \$7.00; Manganese: \$.11 (Leaded & Bismuth Grades); Alloy: 41XX= \$2.07, 43XX=\$10.08, 86XX=\$4.20.

Steel scrap commodity that we track is highly volatile- up 40% since last report. This volatility, coupled with economic uncertainty, is keeping imports out of the picture in our opinion.

Steel Busheling	Jun-09	Jul-09
Minimum	223.00	225.00
Maximum	225.00	301.67
\$ Δ	2	76.67
% Δ	1%	34.1%

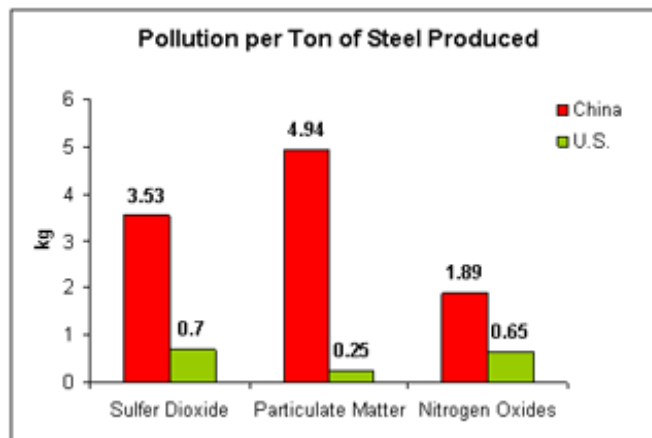
June shipments of steel products from U.S. metals service centers of 2.46 million tons were 41.8% below June 2008 shipments. First-half steel shipments totaled 14.8 million tons, down 43.9% year-over-year. Inventories at the end of the month of about 5.98 million tons were down 44.4% from those of last year and, at current shipping rates, represented a 2.4-month supply.

Steel shipments from Canadian metals service centers totaled 399,200 tons, a decline of 31.7% from June 2008, and brought first-half shipments to 2.46 million tons, down 35% compared with a year ago. Inventories at the end of June totaled about 1.05 million tons, 33% below last year and, at current shipping rates, equal to a 2.6-month supply.

Source: <http://www.ssci.org/news/details.aspx?ArticleID=146>

Commentary: We believe that it is time to fasten our seatbelts as an industry. Inventories continue to decrease, foreign nations (Japan and Taiwan) are actively seeking to accumulate scrap, Primary mills see no compelling reason to restart facilities, and the Chinese are 'arresting' employees of the iron ore supplier companies that they are in 'negotiations' with. Surcharges are volatile, as a result of the 40% increase in steel scrap this month alone. Severstal announced it was ceasing all North American operations today as I prepared this report (5 August 2009). I cannot confirm that any BOF melt bar capacity is currently running in North America.

Average price in 2008: \$575.50 per gross ton

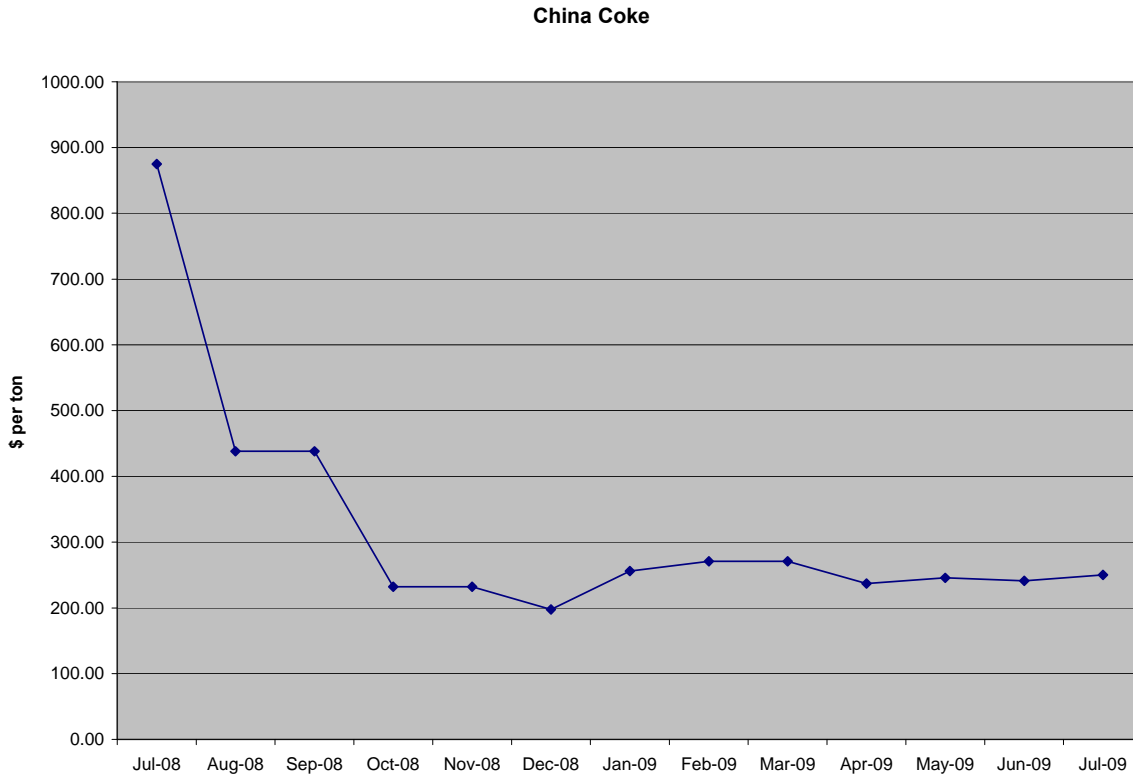


Source: National Bureau of Statistics, "China Environmental Statistics Yearbook," 2006 (China); 2002 National Emissions Inventory Data and Documentation," September 2007 (U.S.)

"The fact that China is now responsible for at least 50 percent of total global steelmaking CO₂ emissions generated and levels of pollution nearly 20 times higher per ton of steel in overall emissions of particulate matter than in the U.S, makes it obvious that any CO₂ regulatory scheme in the U.S. involving the American steel industry that does not provide for similar measures to be taken by other major steel-producing nations such as China on a contemporary time line, will distort or adversely impact the competitiveness of U.S. steelmakers in comparison to global steelmakers."- Thomas J. Gibson, president and CEO, AISI

Read More: <http://www.americanmanufacturing.org/wordpress/wp-content/uploads/2009/03/chinaenvironmental-report-march-2009.pdf>

China Coke (Chinese) (\$ per metric tonne)



China Coke	Jun-09	Jul-09
Minimum	241.22	250.24
Maximum		
\$ Δ	0	0
% Δ	0%	0%

China coke is down ~\$137 from last year's average.

Average price in 2008: \$382.34 per tonne.

(Coke is used in blast furnaces to make hot metal iron for use in the basic oxygen steelmaking process. China accounts for half of the world's supply of coke, one third of which went to the European Union.)

According to Mr. Huang Jingan, Chairman of the China Coking Industry Association, "Although steel price has climbed and coke price has increased, the whole coking industry still suffer losses. Only some independent coking enterprises can gain profits."

He added that coke production in China was at such a level that he anticipates "...coking coal imports into China of more than 20 million tonnes."

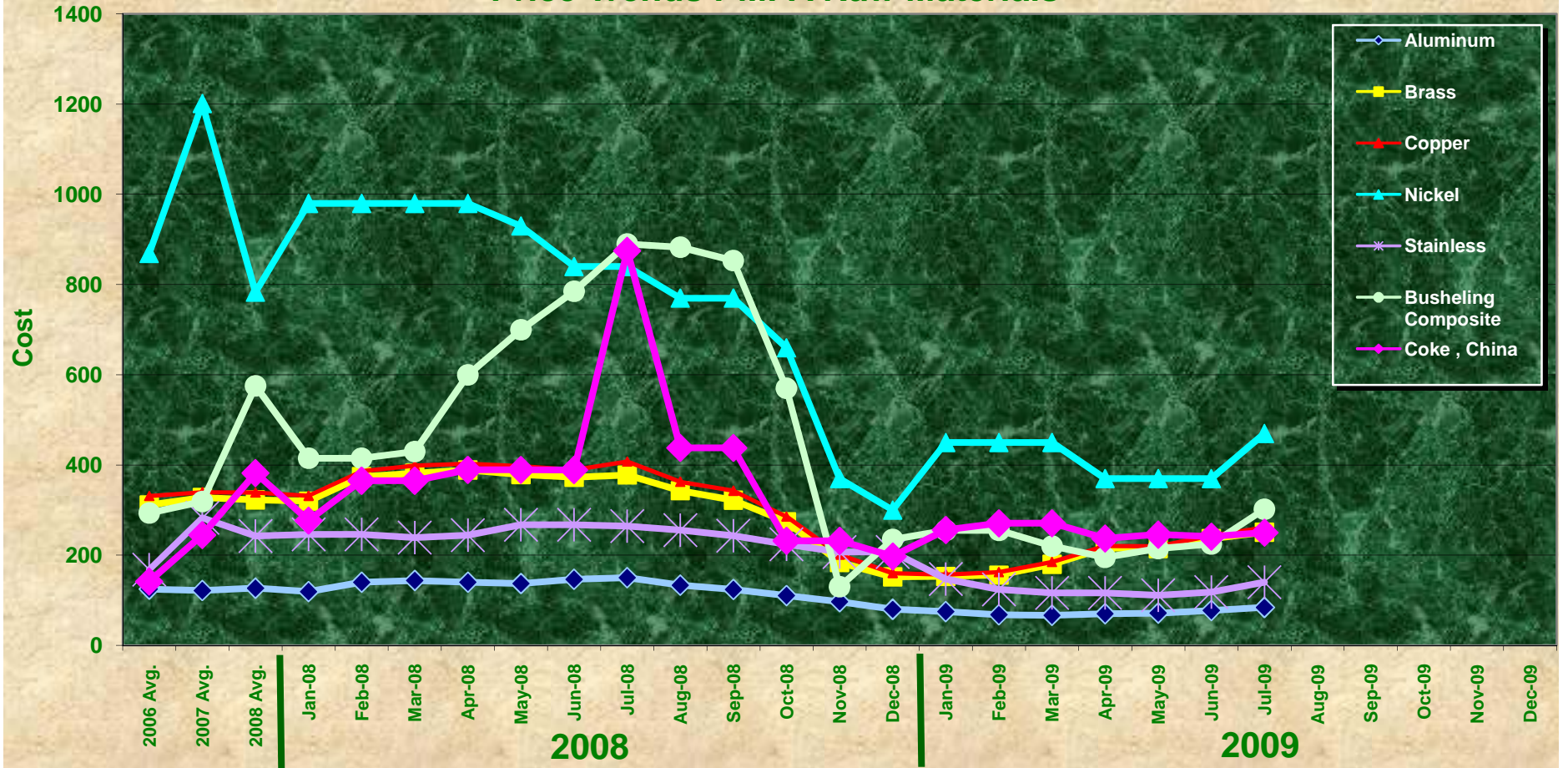
With the North American BOF's shut down, we don't really give a 'heck' about China Coke. Today. But without BOF low residual steels being input into the scrap stream, at some point, we're going to start having issues with parts unable to be cold worked. Actions have consequences.

Knowing where to find material is a key competitive advantage in today's roller coaster market. PMPA members can take advantage of PMPA staff expertise, suppliers, and fellow members knowledge via member only Listserves to assure that material can be found when needed.

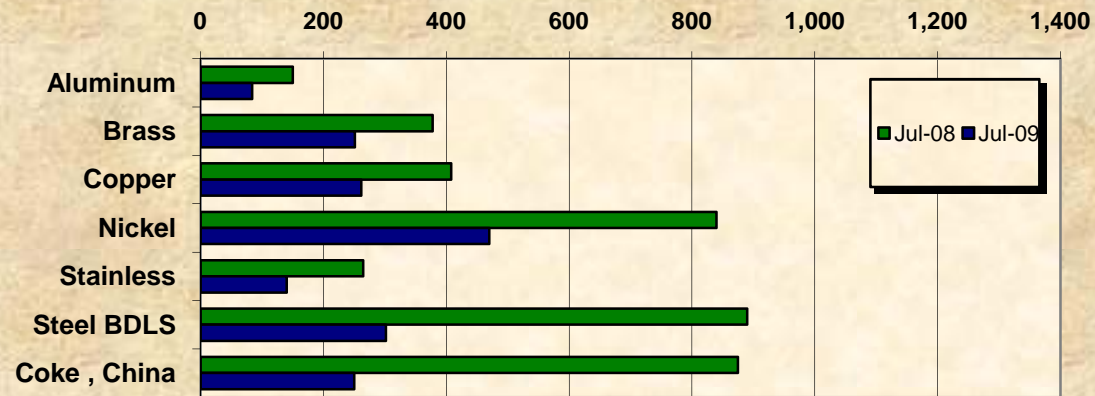
-Miles Free

Director, Industry Research and Technology
Precision Machined Products Association

Price Trends PMPA Raw Materials



Year Over Year Raw Material Price Comparison



PMPA Raw Materials Index

	Aluminum	Brass	Copper	Nickel	Stainless	Busheling Composite	Coke , China
2006 Avg.	124.62	311.58	331.19	869.17	167.50	293.25	141.75
2007 Avg.	121.49	328.17	339.86	1201.67	282.65	319.17	244.75
2008 Avg.	126.64	322.50	338.99	783.33	242.43	575.50	382.34
Jan-08	119.00	320.00	331.70	980.00	246.06	415.00	277.00
Feb-08	139.75	374.00	386.35	980.00	246.06	415.00	365.30
Mar-08	143.75	382.00	398.95	980.00	238.62	430.00	365.30
Apr-08	140.00	389.00	402.80	980.00	244.09	600.00	389.40
May-08	137.00	379.00	397.85	930.00	267.10	700.00	389.40
Jun-08	146.30	373.00	389.55	840.00	267.10	785.00	389.00
Jul-08	150.00	378.00	407.75	840.00	264.47	890.00	875.00
Aug-08	133.25	343.00	362.85	770.00	255.35	883.00	438.07
Sep-08	123.75	322.00	342.95	770.00	243.21	853.00	438.07
Oct-08	110.25	274.00	285.70	660.00	223.94	570.00	232.00
Nov-08	96.75	184.00	201.10	370.00	206.58	130.00	232.00
Dec-08	79.85	152.00	160.35	300.00	206.58	235.00	197.50
Jan-09	74.80	153.00	157.20	450.00	147.00	255.00	256.00
Feb-09	67.75	156.00	162.25	450.00	124.00	255.00	270.80
Mar-09	66.50	180.00	184.95	450.00	116.00	220.00	270.80
Apr-09	70.00	216.00	220.35	370.00	116.00	195.00	236.93
May-09	71.50	215.00	219.75	370.00	110.90	215.00	245.71
Jun-09	77.25	237.00	243.80	370.00	118.00	225.00	241.22
Jul-09	84.00	251.00	261.65	470.00	140.00	301.67	250.24
Aug-09							
Sep-09							
Oct-09							
Nov-09							
Dec-09							
Jan09- Jan 08	-44.20	-167.00	-174.50	-530.00	-99.06	-160.00	-21.00
\$Change							
Jan09-Jan08	-37.14	-52.19	-52.61	-54.08	-40.26	-38.55	-7.58
%Change							
July 09- Jan 09	9.20	98.00	104.45	20.00	-7.00	46.67	-5.76
\$Change							
July09-Jan09	12.30	64.05	66.44	4.44	-4.76	18.30	-2.25
%Change							
2008 Average	126.64	322.50	338.99	783.33	242.43	575.50	382.34

PMPA Raw Materials Index

Prices are as published, do not include surcharges.

Aluminum , Comex Spot close, cents/pound

Brass Scrap, Copper Brass mill #1, cents/pound

Copper, Comex High Grade Cathode, cents/pound

Nickel, Scrap clips and solids, cents per pound

Stainless, 303 CD bars, cents/pound

Steel Busheling, #1, AMM Composite, \$/gross Ton

Coke- anecdotal reports

About the commodities selected for tracking:

The items selected were chosen as indicators of costs for the materials commonly used by our industry.

They were selected because they were available and published, rather than a transaction price which might be confounded with other commercial objectives or geographic market peculiarities.

Aluminum- The use of the Comex Spot close price should need no explanation.

Brass Scrap, Copper Brass mill, #1 was chosen as indicative of the general trend for high quality Brass Scrap for recycling.

Copper, Comex High Grade Cathode was chosen as indicative of costs for "new Copper" to be added to the existing Brass Metal inventory available.

Nickel, Scrap clips and solids was chosen as a proxy indicator for understanding Stainless Steel and High Temp alloys which typically are high % Nickel content. (303-8-10%; 316 10-12%; Hastelloy- Greater than 50%)

Stainless- 303 bars this number is published but we do not see it as realistic and provide it strictly for information.

Steel- Busheling Composite. This indicator was selected as it correlated to the #1 bundles we used prior, now obsolete. It is a factor in the determination of most mill surcharges.

Coke- Coke is used in blast furnace production of Iron in order to produce steel by the Basic Oxygen Process (BOP). Blast furnaces use the coke to provide support for the burden (iron ore, limestone, bushellings, sinter etc.), sensible heat, and carbon monoxide reactant to reduce the oxide in the ore to pure iron. Coke itself is produced by blending a mixture of low- and high- volatility and ash coals and processing them at very high temperatures to distill out volatile organics leaving a strong porous cellular solid which is the critical ingredient for the Blast furnace- BOP producer. This process is daunting from an environmental impact point of view. ***Without coke, there is no blast furnace iron; Without blast furnace iron, there is no BOP steel.***

Quarterly averages have been calculated and used for this report for years prior to 2005 in order to tidy up the presentation of data.

Miles Free

**Quarterly Averages
PMPA Material Impacts**

	Aluminum	Brass	Copper	Nickel	Stainless	Steel BDLS	Coke , China
2003	65.60	77.50	78.21	310.23	111.00	114.55	
	65.84	79.48	80.15	312.50	105.00	124.05	
	66.77	81.93	82.02	325.12	102.00	131.00	
3rd Qtr.	66.07	79.64	80.13	315.95	106.00	123.20	
	69.79	87.04	88.20	359.67	102.00	132.00	
	70.67	92.22	92.76	419.72	105.33	145.33	
	73.52	98.76	99.67	452.50	106.00	162.43	
4th Qtr.	71.33	92.67	93.54	410.63	104.44	146.59	
2004	76.29	108.80	110.28	562.50	106.00	182.00	
	80.40	120.00	121.60	565.00	106.00	275.00	182.00
	84.65	137.00	139.70	525.00	121.50	295.00	460.00
1st Qtr.	80.45	121.93	123.86	550.83	111.17	250.67	321.00
	88.65	136.00	137.10	500.00	121.50	270.00	450.00
	80.85	123.50	124.70	425.00	121.50	240.00	410.00
	83.45	128.00	129.25	500.00	121.50	250.00	325.00
2nd Qtr.	84.32	129.17	130.35	475.00	121.50	253.33	395.00
	84.30	130.00	131.30	550.00	121.50	395.00	
	84.30	131.00	131.55	520.00	121.50	395.00	
	90.95	135.00	139.90	520.00	153.50	375.00	310.5
3rd Qtr.	86.52	132.00	134.25	530.00	132.17	388.33	310.50
	91.30	142.00	147.35	600.00	157.00	415.00	239.00
	89.45	140.00	144.50	500.00	157.00	430.00	239.00
	94.25	145.00	149.10	500.00	157.00	430.00	280.00
4th Qtr.	91.67	142.33	146.98	533.33	157.00	425.00	252.67
2005	93.60	145.00	149.50	500.00	157.00	370.00	280.00
	95.05	144.00	150.25	550.00	157.00	315.00	230.00
	96.65	146.00	151.05	550.00	157.00	255.00	230.00
1st Qtr.	95.10	145.00	150.27	533.33	157.00	313.33	246.67
	93.50	149.00	154.20	600.00	157.00	270.00	230.00
	85.50	144.00	161.40	650.00	160.00	215.00	230.00
	80.25	149.00	153.00	650.00	160.00	145.00	210.00
2nd Qtr.	86.42	147.33	156.20	633.33	159.00	210.00	223.33
	84.40	153.00	163.00	560.00	160.00	170.00	210.00
	89.80	168.00	177.95	540.00	160.00	230.00	210.00
	89.00	173.00	187.65	540.00	160.00	285.00	210.00
3rd Qtr.	87.73	164.67	176.20	546.67	160.00	228.33	210.00
	91.90	181.00	196.80	520.00	166.00	235.00	185.00
	101.55	193.00	218.00	480.00	166.00	285.00	130.00
	105.10	208.00	228.00	500.00	166.00	280.00	150.00
4th Qtr.	99.52	194.00	214.27	500.00	166.00	266.67	155.00
2005 Average	92.19	162.75	174.23	553.33	160.50	254.58	208.75

Table A Supplemental Calculations

**Quarterly Averages
PMPA Material Impacts**

	Aluminum	Brass	Copper	Nickel	Stainless	Steel BDLS	Coke , China
2006	115.50	221.00	229.65	550.00	166.00	280.00	120.00
	122.25	229.00	233.65	550.00	166.00	275.00	148.00
	116.50	245.00	250.35	550.00	135.00	294.00	148.00
1st Qtr.	118.08	231.67	237.88	550.00	155.67	283.00	138.67
	130.60	320.00	348.30	700.00	135.00	294.00	138.00
	146.00	373.50	407.55	810.00	135.00	315.00	138.00
	120.00	345.00	369.10	810.00	135.00	342.00	140.00
2nd Qtr.	132.20	346.17	374.98	773.33	135.00	317.00	138.67
	121.50	357.00	382.95	910.00	135.00	342.00	140.00
	116.60	351.00	366.50	1150.00	135.00	342.00	125.00
	122.25	348.00	372.20	1150.00	135.00	285.00	125.00
3rd Qtr.	120.12	352.00	373.88	1070.00	135.00	323.00	130.00
	129.10	327.50	356.00	1050.00	245.00	275.00	164.50
	127.10	318.00	334.55	1050.00	245.00	245.00	164.50
	128.00	304.00	323.45	1150.00	243.00	230.00	150.00
4th Qtr.	128.07	316.50	338.00	1083.33	244.33	250.00	159.67
2006 Average	124.62	311.58	331.19	869.17	167.50	293.25	141.75
2007	128.50	266.00	265.15	1250.00	243.00	260.00	185.00
	130.00	281.00	285.25	1250.00	253.00	295.00	185.00
	125.50	306.50	314.35	1350.00	265.00	365.00	190.00
1st Qtr.	128.00	284.50	288.25	1283.33	253.67	306.67	186.67
	128.85	358.00	367.40	1350.00	287.00	365.00	185.00
	129.25	367.00	375.05	1350.00	335.00	335.00	190.00
	125.35	338.50	346.55	1350.00	335.00	295.00	245.00
2nd Qtr.	127.82	354.50	363.00	1350.00	319.00	331.67	206.67
	122.65	353.00	375.40	1350.00	342.80	295.00	260.00
	117.30	339.00	359.50	1250.00	342.80	305.00	250.00
	110.00	347.00	363.60	980.00	262.63	330.00	250.00
3rd Qtr.	116.65	346.33	366.17	1193.33	316.08	310.00	253.33
	113.25	359.00	374.95	980.00	235.04	330.00	360.00
	117.25	320.00	335.60	980.00	245.25	320.00	360.00
	110.00	303.00	315.50	980.00	245.25	335.00	277.00
4th Qtr.	113.50	327.33	342.02	980.00	241.85	328.33	332.33
2007 Average	121.49	328.17	339.86	1201.67	282.65	319.17	244.75

Table A Supplemental Calculations

**Quarterly Averages
PMPA Material Impacts**

	Aluminum	Brass	Copper	Nickel	Stainless	Steel BDLS	Coke , China
2008	119.00	320.00	331.70	980.00	246.06	415.00	277.00
	139.75	374.00	386.35	980.00	246.06	415.00	365.30
	143.75	382.00	398.95	980.00	238.62	430.00	365.30
1st Qtr.	134.17	358.67	372.33	980.00	243.58	420.00	335.87
	140.00	389.00	402.80	980.00	244.09	600.00	389.40
	137.00	379.00	397.85	930.00	267.10	700.00	389.40
	146.30	373.00	389.55	840.00	267.10	785.00	389.00
2nd Qtr.	141.10	380.33	396.73	916.67	259.43	695.00	389.27
	150.00	378.00	407.75	840.00	264.47	890.00	875.00
	133.25	343.00	362.85	770.00	255.35	883.00	438.07
	123.75	322.00	342.95	770.00	243.21	853.00	438.07
3rd Qtr.	135.67	347.67	371.18	793.33	254.34	875.33	583.71
	110.25	274.00	285.70	660.00	223.94	570.00	232.00
	96.75	184.00	201.10	370.00	206.58	130.00	232.00
	79.85	152.00	160.35	300.00	206.58	235.00	197.50
4th Qtr.	95.62	203.33	215.72	443.33	212.37	311.67	220.50
2008 Average	126.64	322.50	338.99	783.33	242.43	575.50	382.34
2009	74.80	153.00	157.20	450.00	147.00	255.00	256.00
	67.75	156.00	162.25	450.00	124.00	255.00	270.80
	66.50	180.00	184.95	450.00	116.00	220.00	270.80
1st Qtr.	69.68	163.00	168.13	450.00	129.00	243.33	265.87
	70.00	216.00	220.35	370.00	116.00	195.00	236.93
	71.50	215.00	219.75	370.00	110.90	215.00	245.71
	77.25	237.00	243.80	370.00	118.00	225.00	241.22
2nd Qtr.	72.92	222.67	227.97	370.00	114.97	211.67	241.29