



Material Impacts On The Precision Machining Industry

December 2007

Supply base transition: Our Suppliers are Global Companies

Executive Summary

Brazilian steel maker Gerdau SA announced November 19, 2007 that it has agreed to acquire the vehicular products business of Quanex. Macsteel Division of Quanex has a capacity of just over 1 million tons and is a major supplier of special bar quality steel to the automotive industry. Gerdau is said to be the largest steelmaker in the Americas.

Quanex announcement: <http://tinyurl.com/ys98ym>

Gerdau announcement: <http://tinyurl.com/yt929j>

Macsteel joins Republic Engineered Products and Mittal Steel as US steel producers under foreign ownership. Republic Engineered Products, North America's largest producer of SBQ bars was purchased in 2005 by Industrias CH. S.A. de C.V. (ICH), a steel producer and processor based in Mexico City.

Mittal Steel USA is the largest steel producer in the USA, producing SBQ products at their Indiana Harbor Bar Products (former Ispat Inland) facility. Mittal Steel is a technical member of PMPA. Mittal Steel owns steel-making facilities in 16 countries, spanning four continents, and has been a driver of global consolidation in the steel industry.

Olin Corporation announced November 19th the completion of its sale of its metals business to Global Brass and Copper, Inc., an affiliate of KPS Capital Partners, LP. Global will manage the Olin Metals group which included Olin Brass, AJ Oster, and Chase Brass. Chase Brass is a technical member of PMPA.

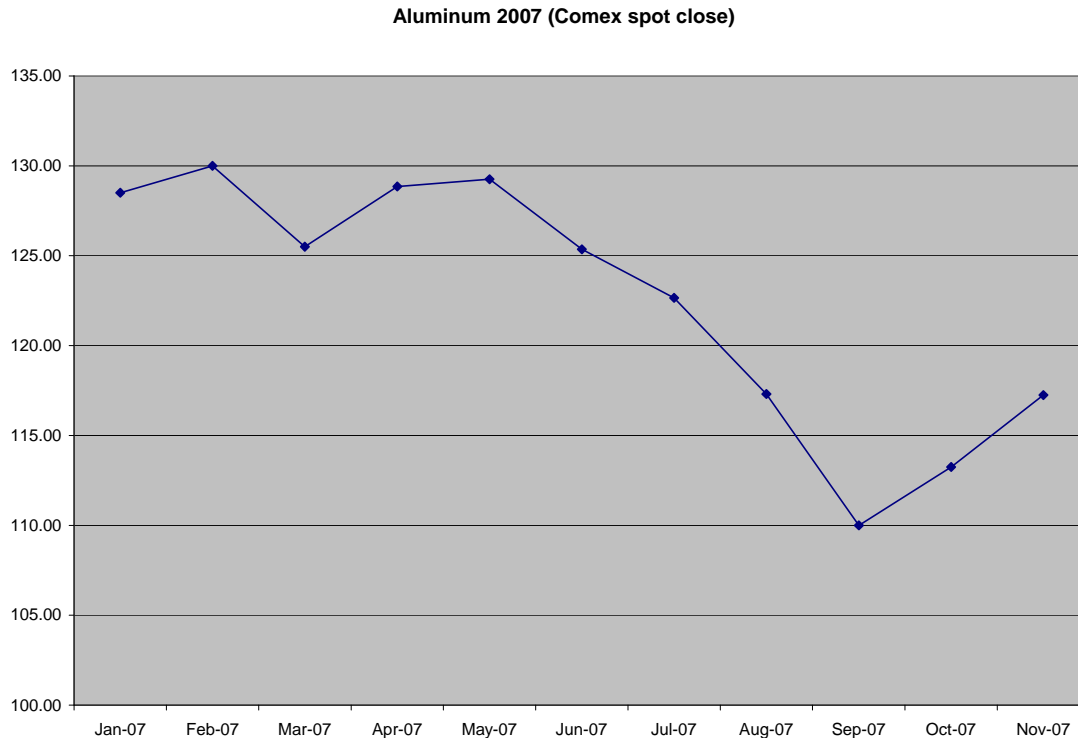
Olin announcement: <http://www.shareholder.com/olin/news/20071119-276380.cfm>

We tend to think of globalism as meaning cheap products from overseas. As the above points out, globalism increasingly means that buying American means buying globally... if the dollar stays low, more North American companies may be in play...

Material inventories continue to fall and are currently at record lows. According to the November 2007 report by MSCI, October Service Center steel inventories fell 2.4% to 12.3 million tons (mt), the lowest level since March 1998 and down 27% from last year's peak. Bar inventories fell by 3.1%; bar inventories are lowest on record since 1987 at 1.448 mt. Months' supply of bars fell to 2.6 months. These figures reflect short supply conditions; we expect price hikes based on three factors: shortage in inventories compared to level of shipments; declining import penetration due to low value of the dollar; and the fact that steel prices here are below global averages.

All data following complete thru November 23, 2007.

Aluminum (cents per pound Comex Spot close)



<i>Interval</i>	<i>% Change</i>	<i>\$ Change</i>	<i>Commodity Price (cents/lb)</i>	<i>Oct 2007</i>	<i>Nov 2007</i>
<i>Jan2007-Jan2006</i>	11.26	13.00	<i>Maximum</i>	113.25	117.25
<i>Jan2007-Nov 2007</i>	-11.25	-8.75	<i>Most Frequent</i>	110-111	113-114

The average price of aluminum in 2006 was up 35.16% over the average in 2005.

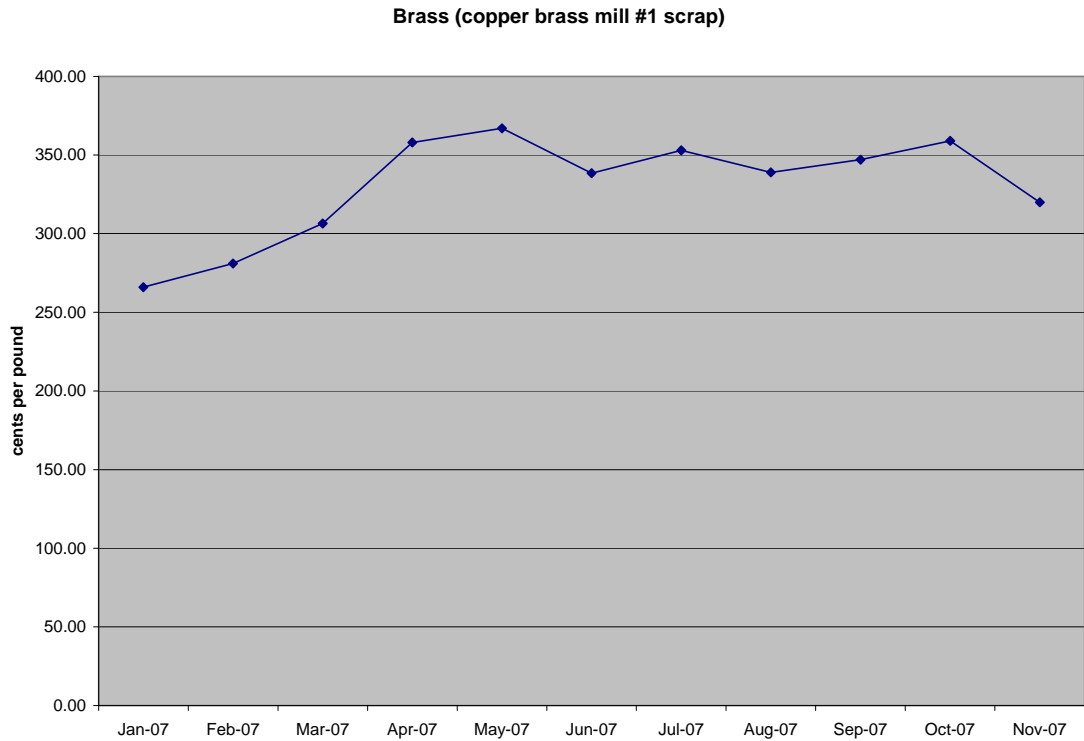
Based on Aluminum Association surveys, (www.aluminum.org) the US annual rate of primary aluminum production totaled 2,632,710 metric tons (tonnes) in October 2007, an increase of 17.8 percent over the October 2006 annual rate of 2,234,989 tonnes. Year to date, the annual rate of production totaled 2,532,907 tonnes, up 11.2 percent over the 2006 annual rate of 2,278,116 tonnes.

The aluminum commodity that we track is currently selling for below last year's average price.

Average price in 2006: \$1.25 per pound

(Energy is the main issue for aluminum producers, and increases in energy costs find their way quickly into the light metal's pricing. Increasing energy prices do not bode well for a strong and sustainable aluminum industry in North America. China is power short, which makes this material especially problematic for their planners.)

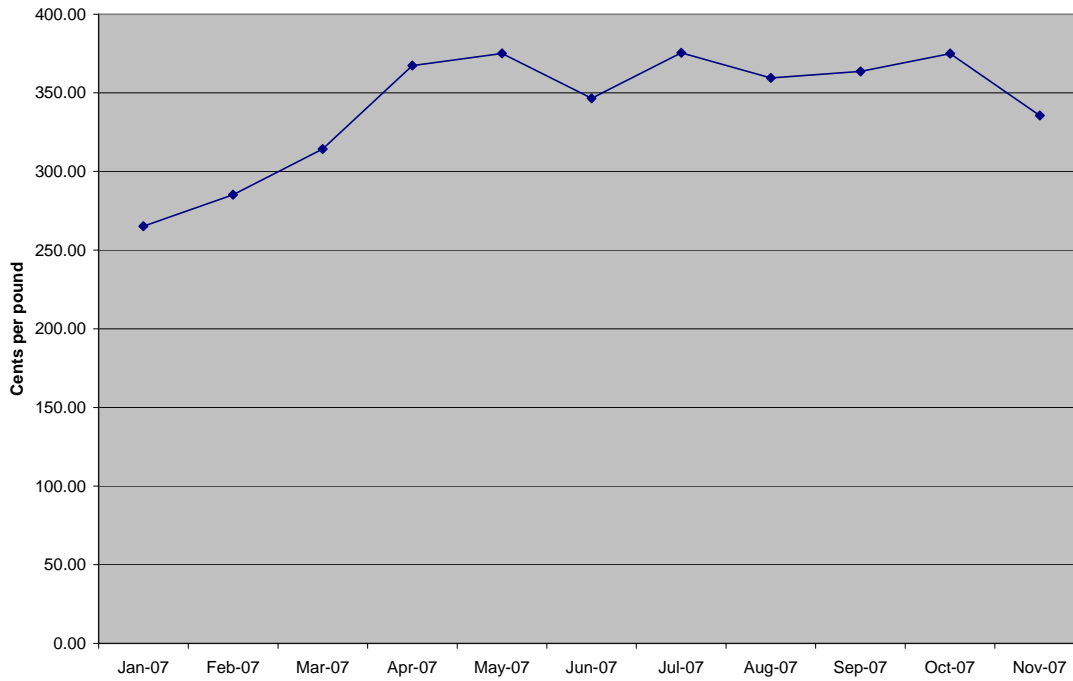
Brass (*cents per pound copper brass mill number 1*)



<i>Interval</i>	<i>% Change</i>	<i>\$ Change</i>	<i>Commodity Price (cents/lb)</i>	<i>Oct 2007</i>	<i>Nov 2007</i>
<i>Jan2007-Jan2006</i>	20.36	45.00	<i>Maximum</i>	359	320
<i>Jan2007-Nov 2007</i>	20.30	54.00	<i>Most Frequent</i>	328	319

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

Copper (comex High grade cathode spot close)



Interval	% Change	\$ Change	Commodity Price (cents/lb)	Oct 2007	Nov 2007
Jan2007-Jan2006	15.46	35.50	Maximum	374.95	335.60
Jan2007-Nov 2007	26.57	70.45	Most Frequent	347	310

Fuel surcharge seen increased by 3% to ~30% above standard freight rate. Energy Surcharge Zero.

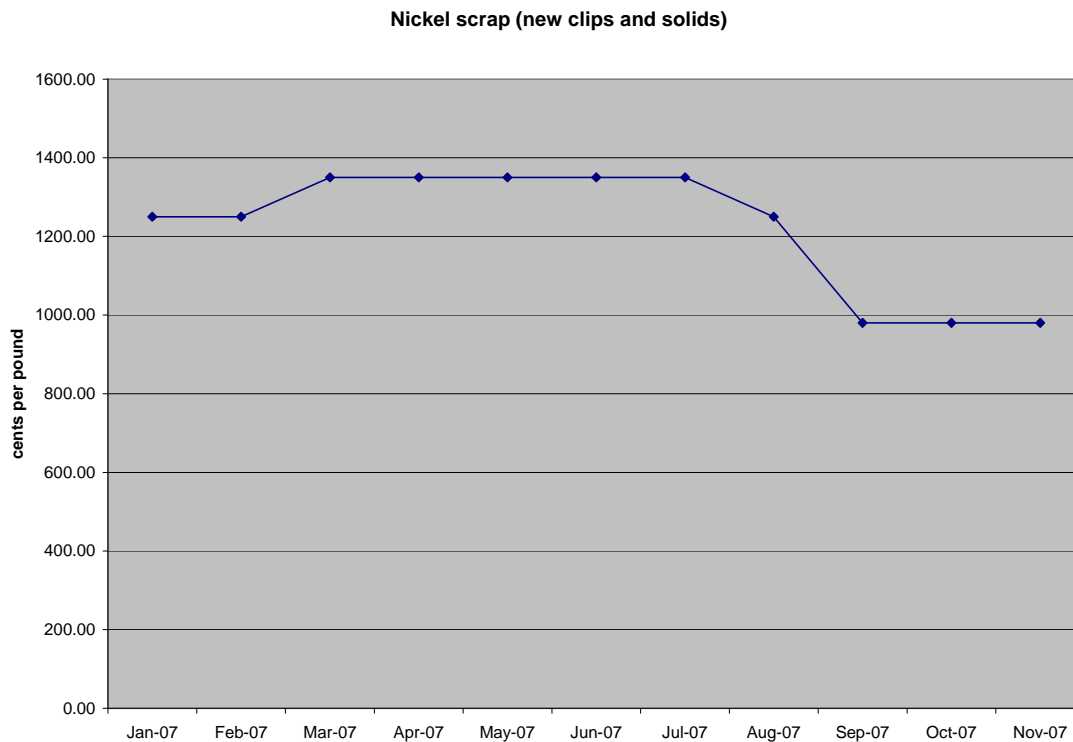
Prices have fallen about 8% since last report, as inventories rise in light of weaker demand. We have seen price decreases in the trade in the area of \$0.15-.18 per pound for metal and chips. November prices are close to last year's average of \$3.31.

Copper and brass imports and exports were down significantly in September according to published reports.

MKF Opinion: The purchase of the Olin Metals Division by Global Brass and Copper, Inc. can be read as an expectation by the buyer of a viable metals business in the years ahead. Of course, the flip side of the transaction may be that the seller felt that that future may not be an easy one. Our best wishes to all parties in this transaction.

Average price in 2006: \$3.31 per pound.

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



<i>Interval</i>	<i>% Change</i>	<i>\$ Change</i>	<i>Commodity Price (cents/lb)</i>	<i>Oct 2007</i>	<i>Nov 2007</i>
<i>Jan2007-Jan2006</i>	127.27	700	<i>Maximum</i>	9.80	9.80
<i>Jan2007-Nov 2007</i>	-21.60	-270	<i>Most Frequent</i>	9.70-9.80	9.70-9.80

The average price of nickel in 2006 was up 57.08% over the average in 2005.

Nickel markets remain unsettled as a result of a press release from the International Nickel Study Group announcing that 2007 will close with a **120,000 metric tonne surplus in nickel production this year.**

A freshman congressman from Ohio is trying to overturn the treasury dept.'s ban on melting coins to benefit a company in his district estimated cost to taxpayers-\$1,000,000 per day if his bill is enacted.

Link: <http://www.numismaster.com/ta/numis/Article.jsp?ad=article&ArticleId=3227>

Average price in 2006: \$8.69 per pound.

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

Stainless

Stainless Surcharges : UgitechUSA Stainless 303 per pound **Raw Materials Surcharge**- November \$1.31; December 2007: \$1.41; these are calculated on a two month lag.

Surcharges on Stainless Steel are approximately 60% of this years peak of \$2.34 for 303 free machining bar based on the leveling off of Nickel prices worldwide. The UgitechUSA USA website: <http://www.ugitechusa.com/surcharges.html>

Stainless Steel

The Specialty Steel Industry of North America (SSINA) released the latest available (November 15, 2007) statistical data on imports YTD August 2007 compared to the same 2006 eight-month period. Stainless steel bar: Imports in YTD August 2007 were 85,317 tons, a 12% increase compared to YTD August 2006; U.S. consumption was 158,497 tons, a 4% increase; eight-month import penetration was 54%, a four percentage point increase.

ITA data released today (November 15, 2007) show that overall **steel imports in October 2007 increased 13 percent from September 2007**. The change in September's total amount of steel imports was due largely to an increase in blooms, billets and slabs; which increased by 119% from September to October. Changes were mixed in other carbon categories and **most stainless categories decreased**.

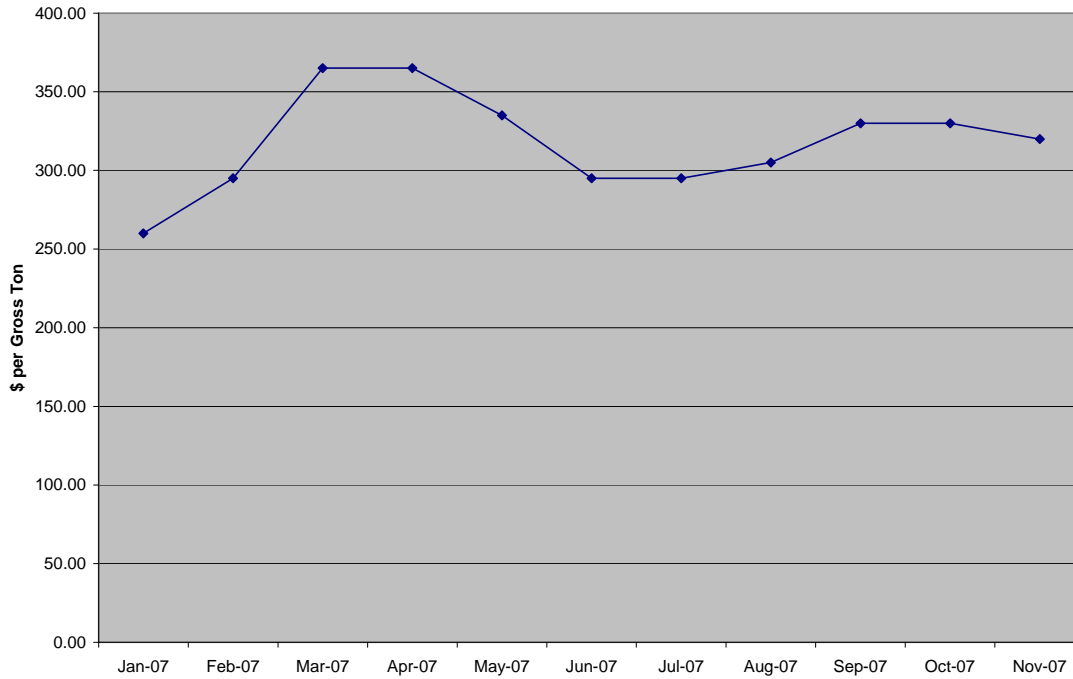
October 2007 imports of steel mill products were down 30 percent compared to October 2006. Link: http://ia.ita.doc.gov/steel/license/news/monthly_SIMA_factsheet.pdf

No, there is NOT any Hexavalent Chromium in Stainless Steels:

http://www.ssina.com/news/releases/pdf_releases/02_22_06.pdf

Steel *(dollar per gross ton, Consumer Number 1 bundles, Chicago)*

Steel Scrap (#1 Bundles)



Steel, cont'd

<i>Interval</i>	<i>% Change</i>	<i>\$ Change</i>	<i>Commodity Price (\$/gr.ton)</i>	<i>Oct 2007</i>	<i>Nov 2007</i>
<i>Jan2007-Jan2006</i>	-7.14	-20.00	<i>Maximum</i>	330	320
<i>Jan2007-Nov 2007</i>	23.08	60.00	<i>Most Frequent</i>	320	300

The average price of steel bundles in 2006 was up 15.2% over the average in 2005. Up 12.5% year to date.

Surcharges: November 2007 Material Surcharges for Cold Finished Bars: \$7.85; December 2007 \$6.75

Production, Shipments, Inventories

In the week ending November 24, 2007, domestic raw steel production was 2,044,000 net tons while the capability utilization rate was 85.7 percent. Production was 1,887,000 tons in the week ending November 24, 2006, while the capability utilization then was 81.5 percent. The current week production represents an 8.3 percent increase from the same period in the previous year. Production for the week ending November 24, 2007 is down 0.4 percent from the previous week ending November 17, 2007 when production was 2,054,000 tons and the rate of capability utilization was 86.1 percent.

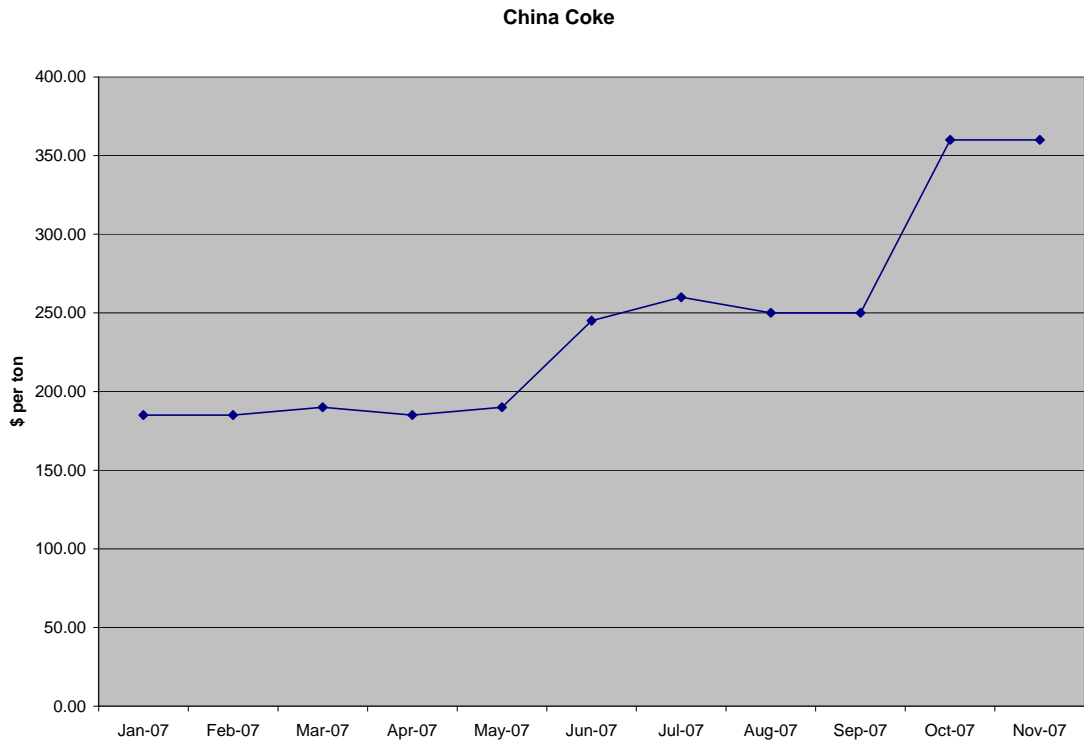
Adjusted year-to-date production through November 24, 2007 was 96,206,000 tons, at a capability utilization rate of 86.1 percent. That is a 3.2 percent decrease from the 99,456,000 tons during the same period last year, when the capability utilization rate was 89.0 percent. Source: www.steel.org

Shipments of steel products from U.S. metals service centers totaled 4.7 million tons in October, up 1.7% from October 2006 but off 2.3% on a seasonally adjusted basis. Steel product inventories at the end of October totaled nearly 12.26 million tons, 27% below year-ago levels and the lowest since March 1998, when inventories totaled 12.25 million tons. At current shipping rates, U.S. steel inventories represented a very low 2.6-month supply.

In Canada, metals service centers shipped 331,700 tons of steel during October, or 1.7% below year-ago shipments (down 6.6% on a seasonally adjusted basis). Month-end steel inventories totaled 1.1 million tons, 19.7% below October 2006 supplies. At current shipping rates, Canadian steel inventories were sufficient for 3.3 months. Source: www.MSCI.org

Average price in 2006: \$293.25 per gross ton.

Coke (Chinese) (\$ per metric tonne)



The average price of Chinese Coke in 2006 was down 32.1% over the average in 2005.

Our last documented price for China coke was \$250 FOB port. Export licensing rules for 2008 have been revised. And China's exports of coal increased 18.8 % in October compared to same month last year due to higher prices in international markets.

We have evidence of Coke export prices as high as \$360 per tonne. This is over 2-1/2 X last year's average price of \$141.75 per tonne. This is a significant development for steel globally as China is the coke producer for the world. Environmental pressure, supply constraints, changes in export tax schemes, prioritizing steam coal for much needed power are apparent drivers.

Look for higher steel prices down the road as a result of coke doubling in price.

Average price in 2006: \$141.75 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.)

China Developments

China and Materials: here's a couple of reports about the filling stations running out of gas in China:

http://www.sxcoal.com/en/doc/show.asp?typeid=1000&f_id=18418&menu_1=

http://www.sxcoal.com/en/doc/show.asp?typeid=1000&f_id=18436&menu_1=

China announces first off shore wind generator:

http://www.sxcoal.com/en/doc/show.asp?typeid=1000&f_id=18457&menu_1=

European Union targets Chinese Steel for dumping:

<http://english.eastday.com/eastday/englishedition/nation/userobject1ai3195962.html>

Outlook for 2008: we are seeing reports for increases in export taxes in China in 2008 for lead and steel. Tungsten which is used for tool inserts, is primarily sourced from China. Press reports indicate that China plans to cut their tungsten export quota by 500 tonnes next year. We expect this will impact tooling and insert prices.

Currency: Still no substantive action on the revaluation of the Yuan.

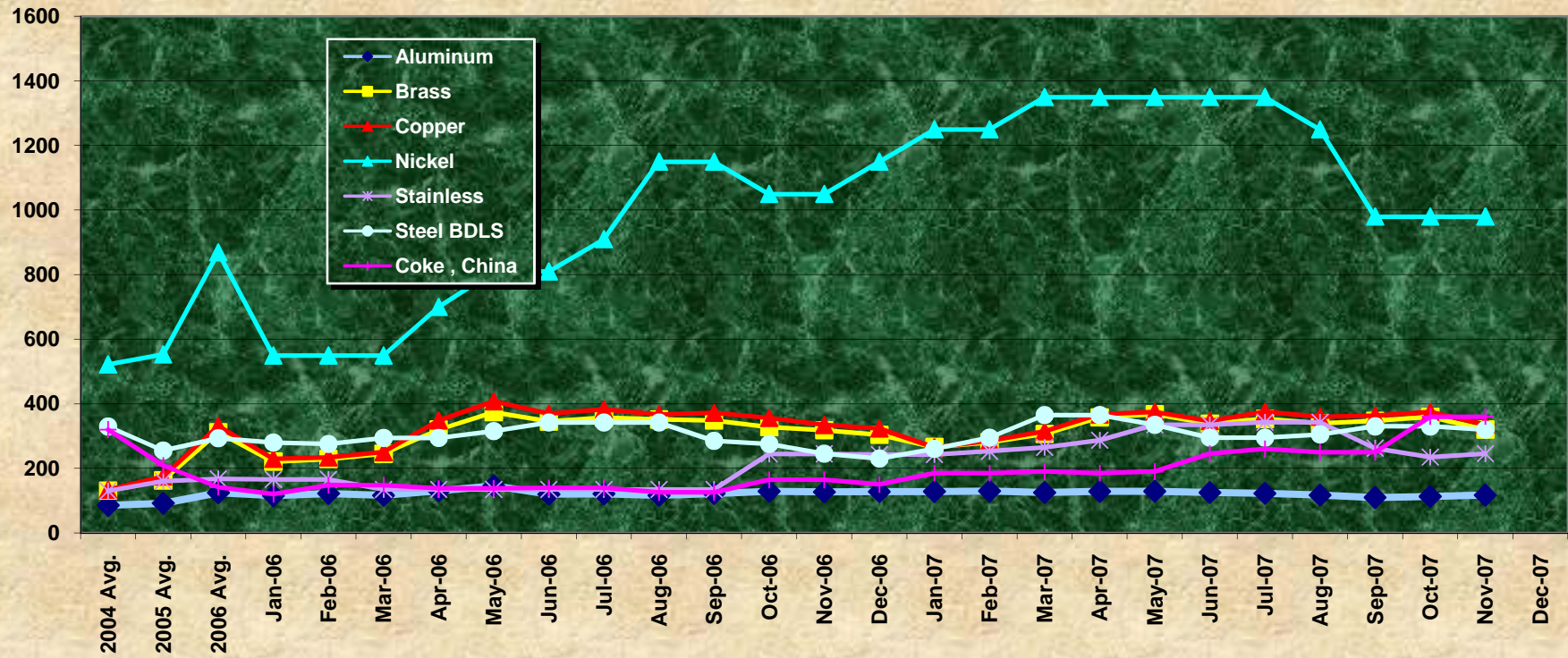
<http://tinyurl.com/22t7fj>

The federal government's lack of **ACTION** on the manipulation of currency exchange rates by the Chinese government remains a critical concern for the sustainability of North American Manufacturing. *If not now, when?*

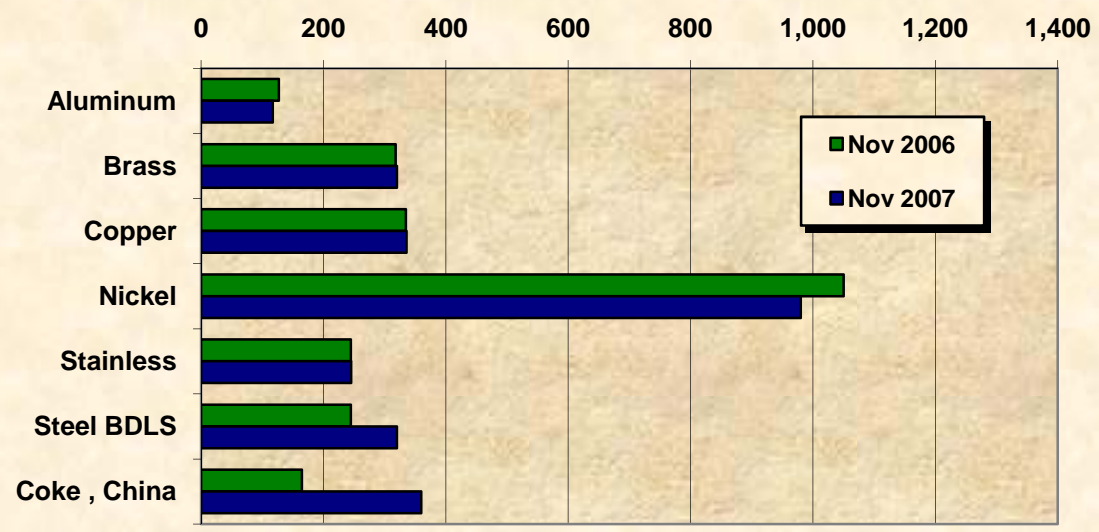
-Miles Free

Director, Industry Research and Technology
Precision Machined Products Association

PMPA RAW MATERIAL PRICE TRENDS



Year Over Year Raw Material Price Comparison



PMPA Raw Materials Index

	Aluminum	Brass	Copper	Nickel	Stainless	Steel BDLS	Coke , China
2004 Avg.	85.74	131.36	133.86	522.29	130.46	329.33	319.79
2005 Avg.	92.19	162.75	174.23	553.33	160.50	254.58	208.75
2006 Avg.	124.62	311.58	331.19	869.17	167.50	293.25	141.75
Jan-06	115.50	221.00	229.65	550.00	166.00	280.00	120.00
Feb-06	122.25	229.00	233.65	550.00	166.00	275.00	148.00
Mar-06	116.50	245.00	250.35	550.00	135.00	294.00	148.00
Apr-06	130.60	320.00	348.30	700.00	135.00	294.00	138.00
May-06	146.00	373.50	407.55	810.00	135.00	315.00	138.00
Jun-06	120.00	345.00	369.10	810.00	135.00	342.00	140.00
Jul-06	121.50	357.00	382.95	910.00	135.00	342.00	140.00
Aug-06	116.60	351.00	366.50	1150.00	135.00	342.00	125.00
Sep-06	122.25	348.00	372.20	1150.00	135.00	285.00	125.00
Oct-06	129.10	327.50	356.00	1050.00	245.00	275.00	164.50
Nov-06	127.10	318.00	334.55	1050.00	245.00	245.00	164.50
Dec-06	128.00	304.00	323.45	1150.00	243.00	230.00	150.00
Jan-07	128.50	266.00	265.15	1250.00	243.00	260.00	185.00
Feb-07	130.00	281.00	285.25	1250.00	253.00	295.00	185.00
Mar-07	125.50	306.50	314.35	1350.00	265.00	365.00	190.00
Apr-07	128.85	358.00	367.40	1350.00	287.00	365.00	185.00
May-07	129.25	367.00	375.05	1350.00	335.00	335.00	190.00
Jun-07	125.35	338.50	346.55	1350.00	335.00	295.00	245.00
Jul-07	122.65	353.00	375.40	1350.00	342.80	295.00	260.00
Aug-07	117.30	339.00	359.50	1250.00	342.80	305.00	250
Sep-07	110.00	347.00	363.60	980.00	262.63	330.00	250
Oct-07	113.25	359.00	374.95	980.00	235.04	330.00	360
Nov-07	117.25	320.00	335.60	980.00	245.25	320.00	360
Dec-07							
Jan07- Jan 06	13.00	45.00	35.50	700.00	77.00	-20.00	65.00
\$Change							
Jan07-Jan06	11.26	20.36	15.46	127.27	46.39	-7.14	54.17
%Change							
Nov07- Jan07	-11.25	54.00	70.45	-270.00	2.25	60.00	175.00
\$Change							
Nov07-Jan07	-8.75	20.30	26.57	-21.60	0.93	23.08	94.59
%Change							

Table A

PMPA Raw Materials Index

2005 Average	92.19	162.75	174.23	553.33	160.50	254.58	208.75
2006 Average	124.62	311.58	331.19	869.17	167.50	293.25	141.75
YTY%Change	-7.75	0.63	0.31	-6.67	0.10	30.61	118.84

2005 Average Calculation updated August 2006

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

SteelBdls, #1, AMM Chicago, \$/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 and can provide a "calibration" of your actual numbers to compare to your own experience.

Steel Bdls #1- AMM Chicago. This indicator was selected as it is indicative of make up of Electric Furnace process Steels for Special bar quality. While other scrap types are blended into a heat, the #1 bundle indicator is the best glimpse of price vs quality for electric furnace melted steels. Typically 95% or more of an electric furnace melt is scrap. This indicator was also chosen because it plays a part in the calculation of some suppliers material 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

Table A

PMPA Raw Materials Index

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

**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	150.00
	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	175.00
	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