

Metals Outlook (June – Dec 2011)

Dear Customer:

We work with 16 of the world's largest Original Equipment Manufacturers (OEMs) and thousands of their affiliated part manufacturers to provide the best tools and processes for purchasing common raw materials across the OEM extended Supply Chain. In that capacity, one of the questions we are constantly asked is "Where are metals prices headed?" While the process of managing consolidated raw material requirements across the extended supply chain is our forte, fortunetelling *is not*. However, we've been goaded into taking a crack at it anyway. First, a look in the rear-view mirror - here is what we said in our January Outlook and what has happened:

January-June 2011 Price Predictions	What Actually Happened (as of June 7, 2011)
Nickel Alloys: ↑	↑ Ni values rose/declined for no net change, demand grew slightly, and alloy prices had modest growth of 5-8%
Aluminum Alloys: ↑	↑↑ Alloy and scrap prices grew by 9-10%
Stainless Steels: • Sheet ↔ • Bar ↑	↔ Ni elemental values were flat and Cr elemental values rose, mills announced increases, and stainless bar transactional prices rose by 2-4% while sheet transaction prices remained flat.
Carbon Steels: ↑↑	↑↑ Flats rose by 25-30%, and mill announced price increases were 30-35%
Copper Alloys: ↑	↑ Cu values rose by 5-8% over the period, but has shown recent downturns

Key: ↑Up; ↗ Slightly Up; ↔ Flat; ↓ Down; ↘ Slightly Down

We've consulted with the smartest people we know as well as the usual financial analysts and news services to construct an educated guess. If you are looking for spreadsheet, graphs and specific monetary projections, you won't find them here. Just as our previous Metals Outlooks, this is merely a "thumb in the air" prognostication intended to suggest which way we think the wind is blowing. We have identified six main drivers of metals price (some of which are closely correlated). While there are other factors to be considered, these are the things that we believe really move the proverbial needle:

1. **Global Economic Health & Risks**
2. **Interest Rates/ Currency Exchange**
3. **Mill Capacities & Lead-Times**
4. **Energy Costs**
5. **Carbon Scrap & Elemental Costs**
6. **International Trade Issues and the "Known Unknowns"**

I hope this Outlook is useful to you. At least now you have one more data point with which to construct your own opinion. We would love to hear what *you* think, so please let us know.

Sincerely,

Trevor Stansbury

Commentary:

As we assess the overall picture for the next six months, we see sustained, albeit modest economic growth in what will continue to be a very nervous and volatile financial market. In our opinion, a limiting factor that seems to be keeping a lid on what might be a more robust recovery is what can only be described as a pervasive feeling of uncertainty. Major metal consuming industries (aerospace, energy and farm equipment) are notable exceptions. We are especially impressed with prospects in the aviation industry which bodes well for aluminum, titanium, nickel and stainless demand. We think steel and copper fundamentals will remain sufficiently strong to prevent dramatic price decreases and we will probably see some increases once the dog days of summer are behind us. Even though we have seen a “double dip” of sorts in the residential housing market, a modest, even anemic recovery in both residential and commercial construction will continue to build but not in a way that measurably impacts metal markets. With QE2 ending, the speculative run-up in base metal prices should reverse course, the only question is how abruptly and to what degree this will influence metal prices. A significant factor impacting a “soft landing” will be the persistence of underlying demand or market fundamentals, especially in China and in emerging markets. This is why you’ll read so much below about the factors we view as risks to what has been a fairly tenuous recovery so far. Notwithstanding the serious challenges to global economic health, for now, we think the fundamentals remain intact to support current or slightly higher prices for aluminum, nickel, and stainless. While carbon and copper appear to be taking a bit of a breather, we think both should begin to get their footing again towards the end of the year, especially if recent jitters subside and confidence in economic growth returns. We don’t foresee the kind of significant material-input disruptions we experienced in the first six months (with coking coal, for example), although the things that would cause those are impossible to predict.

1. Global Economic Health & Risks and Prospects for Continued Economic Expansion:

While I would not go as far as the Boston Consulting Group (BCG) in predicting that the US is on the verge of a “manufacturing renaissance,” we believe prospects for a continued, gradual recovery in the US manufacturing sector are good through the remainder of 2011 and even better as we move into 2012-13. Our friends at MetalMiner, recently cited this attention-grabbing quote from the previously mentioned BCG report: “Sometime around 2015, manufacturers will be indifferent between locating in America or China for production for consumption in America.” This reminded me of a Goldman Sachs (GS) report issued back in July of 2008 that said “we are in the middle of an unprecedented explosion in the world middle class.” To our knowledge, those predictions are tracking fairly closely to actual demographics. According to the GS Report, between 2008 and 2018, approximately 750 million people will join the ranks of the middle class (defined as those with incomes between \$6,000 and \$30,000). 250 M of those people will come from nine BRIC/N-11 countries. In recorded history, no other socio-economic expansion on that scale even comes close. That’s a lot of people who can suddenly afford to buy cars, televisions and iPods and it certainly bodes well for manufacturing and metals demand *over the long haul*. The near-term economic picture is less rosy. Here are a few of our concerns in relation to the next six months of 2011:

- **The Sovereign Debt Crisis in Europe and the threat of a bond-induced financial panic in Portugal, Ireland and Spain.** Like a bad dream that won’t go away, these concerns continue to pose what we believe to be one of the biggest threats to sustained global economic recovery. At best, it erodes confidence. At worst, it could push budgets more deeply into the red, spawn defaults, and drive interest rates up very quickly. The apparent decision of Germany to back a new round of financial aid for Greece is hardly cause for celebration. It merely postpones the pain of restructuring by kicking the can a bit further down the road (again). Euro-zone manufacturing activity dropped 5% in May.
- **US Debt.** The unprecedented expansion of US government and continued deficit spending at both the Federal and State levels continue to extract a heavy price on growth. America is learning its own hard lessons in the “crowding out effect” and would be well advised to get its fiscal house in order.
- **High Oil Prices.** Oil prices may be down but they’re not out by any means. MetalMiner recently reported: “Although oil prices have come off in a more risk-averse, Euro-crisis-fretting investment environment, the Financial Times holds that demand is not slowing and yet the rate of new supply growth is. Sooner rather than later, this disconnect will resolve itself in rising prices again.” The IMF

warned in its most recent Economic Outlook that oil prices could spike again as they did in 2008. That would certainly pose a threat to continued economic recovery and growth.

- **China and slowing 'Emerging Market' growth.** Of all the factors impacting global metal prices, China's sustained demand for steel and other metals matters more than any other factor. Concerns here are that inflation, and slowing economic growth in China and the emerging markets could be a spoiler. The WSJ recently reported that India's economy grew 7.8% in the January-March period, compared with 9.4% in the year earlier quarter. The WSJ also reported that growth in South Korea (a bellwether of sorts for global manufacturing) contracted in April by a seasonally adjusted 1.5%. The silver lining here (if there is one) is that much of the deceleration in these markets has been deliberate as governments have stepped up efforts to raise interest rates and tighten lending standards. Policymakers hope that as long as underlying demand remains strong, their policies will keep troublesome bubbles from bursting and that more moderate growth will ensue. One has to admit that Chinese economic planners have done an admirable job (so far) of pulling the right levers in order to keep a variety of alleged economic "bubbles" from bursting while, at the same time, appeasing the rising expectations of a burgeoning middle class with wage increases and other pacifying measures. I am confident that their luck or central planning skills (or both) will continue to hold out – at least through the remainder of this year.
- **The end of 'Qualitative Easing' (QE2) and the threat of rising interest rates.** Until recently, inflation in the US has not been much of a problem and when combined with a weak dollar has been good medicine for the US economy. The two factors have contributed to a recovery in the US manufacturing sector (9% in the first quarter of 2011). That rate of recovery was five times faster than the rate of recovery in the US economy as a whole. All of that changes if, in order to combat inflation, the Federal Reserve raises interest rates too quickly. A debate raging even among Federal Reserve Bank Presidents about "core" versus "headline" inflation pits those who say "people can't eat iPads for dinner" versus those that see no harm in adjusting inflation for food and energy prices. If more policymakers are persuaded that headline inflation 'counts' it certainly increases the likelihood of interest rate hikes in the future. While we are worried about it, we're taking the Fed's word that for now, that's not going to happen. For those that are curious about why this matters, one unpredictable consequence of interest rate hikes is what it would mean in relation to the mountains of base metal inventories that are out there backing Exchange Traded Funds (ETFs) or in warehouses associated with more anomalous financial hedge-funds and bank plays. Stuart Burns of MetalMiner reminded us that the ETF inventories are a shadow of the volumes held in the latter. Apparently we are not the only ones worrying about this. In a recent Financial Times article, Max Layton, a Metals Analyst at Macquarie, warned, "that when interest rates start to rise, 3m-4m tons of aluminum could be released on to the market, triggering a price collapse." Bear in mind that similar ETF inventories exist for nickel, copper and other base metals. Could metal flood the market at the whim of a few Wall Street financial analysts? It appears plausible. The good news is that if that happens, we think the impact would likely be temporary and that it could be absorbed relatively quickly. If it happened in the next six months, however, it could certainly have a short-term disruptive impact. We were cautioned that it would be too simplistic to assume that rising interest rates will necessarily result in a mad rush to exit ETFs or that it would immediately impact LME warehouses or inventories held in off-warrant warehouses. According to Mark Motley of Foster & Motley, the important factor to watch is rising 'real interest rates.' If, for example, inflation rises and interest rates rise in lock-step (resulting in no increase in real interest rates), that could trigger increased ETF demand, not less. According to Mark, "net inventory carrying costs are mostly a function of real interest rates, as higher nominal rates are offset by higher expected price inflation when rates rise purely in response to inflation." Like Mark, we believe the long term impact of ETFs will be to increase volatility - price moves up and down will be bigger than they would otherwise have been because of money moving in and out of those funds.
- **Consumer sentiment.** The news has been awash in negative press about economic growth of late and may be a bit overblown. The sentiment at the OEM, mill and distribution level (including many of our own customers and sister companies) is decidedly more optimistic. A recently published survey by the Institute for Supply Management, found that "purchasing managers at US factories anticipate sales will grow 7.5 percent this year, up from 5.6 percent last year." On the other hand, the Federal Reserve disclosed last week that factory orders actually slowed for the first time in 10 months in April. If you adjust for the automotive industry (which was hit hard by the tsunami in Japan), factory orders

actually rose a bit (0.2%). Still 0.2% growth is hardly anything to brag about. The sense we get is that most people are crossing their fingers and agreeing with the current Administration's view that this is merely "a bump in the road to recovery" and that the dreaded double dip or "Greatest Recession" will NOT materialize. Let's hope they're right.

2. Mill Capacities and Lead-times

Carbon steel mill capacities have shown good availability, and nothing indicates that the trend will reverse in the near-term. During the January- June 2011 period, the carbon steel flat products showed compressed lead-times from 10 weeks to 8 weeks, and bar lead-times remained stable in the 8-9 week range.

High-performance alloy and stainless steel mills are beginning to fill and lead-times are extending over the first six months of 2011. The lead-times for nickel alloy bar products have extended from 27 weeks to 30 weeks, and stainless steel bar lead-times have extended from 17 weeks to 20 weeks. Stainless steel sheet lead-times have remained in the 5-7 week range throughout the period, and nickel alloy sheet lead-times have extended to 16-19 weeks, with the longest lead-times assigned to vacuum-melted grades.

3. Energy Prices

Natural Gas prices have dropped in the first half of 2011 by 7%, and no supply constraints have been announced.

Coking Coal remained flat through March of 2011, but showed a 10% climb in early April and has maintained the higher position. Carbon steel production changes, specifically for blast furnace operations will be a good indicator for coking coal demand. At this time we do not anticipate the supply interruptions of prior periods, or any fast-paced rebound for steel production to upset this balance.

Industrial Electric Power was stable over the first six months with net increases of less than 1%. While it is likely that we will see the normal seasonal rise for the July to October period, no appreciable impact on metal prices is anticipated.

4. International Trade Issues

Limited news continues to circulate regarding China's restrictions for their export of rare earth metals, and additional exploration has been funded in the US to reduce a portion of the molybdenum shortage risks. The EU is currently pressing China to respect a reciprocal extension of trade relations. The EU is alleging that China's subsidies are creating large barriers for open trade. The issue impacts many product types from electronics to metal fasteners.

5. Elemental & Scrap Costs

- Nickel increased for the first two months of 2011, but has decreased by approximately 15% across the balance of the period. As stainless steel and nickel alloy lead-times extend to reflect growing demand we should see a nickel price rebound. The speculative market will continue to play a strong role in this USD-based commodity, and the speculators' impact on the nickel cost will be notable if interest rates change materially or if the value of the USD takes a sudden turn. The costs to mine and refine the nickel should limit any further reductions to 8-10% over the balance of the year.
- Chrome has risen approximately 10% from January to May of 2011. Much like nickel, stainless steel demand growth is a leading driver for chrome costs, but there is no immediate indication that stainless steel demand will spike in the near term.

- Iron ore showed a good deal of volatility for the first six months of 2011, and the net effect of the activity was a 4% increase. With plans for a measured re-building of Japanese structures, and reduced steel production in the near-term for China we should see iron ore remain stable for the balance of the year.
- Steel scrap has dropped 8-10% over the first half of the year; however, short-term US demand and demand from Turkey is expected to be strong. Prime scrap is expected to increase by 5% by the end of June, as Turkey works in July to acquire materials before Ramadan in order to support the high rebar demand levels. German steel officials see steel demand reducing over the balance of the year, and US backlogs are not strong enough to support large price increases for the scrap.
- Cobalt has cycled around an average cost of \$18/lb over the first half of 2011, and follows the same pattern we have seen since mid-to-late 2009. This element is known for its rapid spikes, with a high of \$48/lb in early 2008. We anticipate the industries that use cobalt to recover in a measured fashion and assume that we will not see political unrest in the central African region resulting in interrupted supply.
- Titanium has shown solid increases from January to June 2011 of 45%, and with the expected growth of the aerospace forecasted demand we believe that this is an element to watch for the balance of 2011. USA ingot costs are approximately \$12/lb and were as high as \$30/lb in mid-2006.
- Molybdenum increased during the 1st quarter of 2011, followed by a drop and then a stabilized pattern beginning the 2nd quarter and holding throughout the period. The industries that drive moly demand range from industrial uses and alloy steels to high-temperature aerospace applications. As we expect these industries to show measured growth, we also expect the cost for moly to remain stable for the balance of 2011.
- Copper is often regarded as a good indicator for base-metal commodities, and we have seen copper move erratically with a net decline of 7% in the first half of the year. Analysts are predicting a slight price recovery in the 3rd quarter with a stronger recovery in the 4th quarter. The year should end with copper near the January 2011 price level of \$4.42/Lb. Our friends at MetalMiner citing several newly launched, physically backed industrial metal ETFs, picked copper out as a non-ferrous metal “to keep an eye on.” They went on to predict that I may have “the highest investor interest through the year and into 2012.” An increase in speculator activity could drive prices higher, even if market fundamentals lag.

July- December 2011 Outlook:

Category Price Predictions:	Comments
Nickel Alloys: ←→ <ul style="list-style-type: none"> • Long Products ←→ • Flat Products ←→ 	Although Ni values may drop further, capacities continue to tighten. We see the prices flat over the majority of the period with slight 4Q increases.
Aluminum Alloys: ↗	Aluminum has been on a steady climb since 1Q '09, but has not reached the average seen over the 2006-2008 period. We see 3Q reductions with some recovery at year-end for a slight increase overall. The correlation between production of this energy intensive commodity and the price of oil is quite pronounced. In the last month, the price has fallen about 10 percent on the back of falling oil prices and a strengthening dollar.

<p>Stainless Steels: ↔</p> <ul style="list-style-type: none"> • Long Products ↔ • Flat Products ↔ 	<p>Mills continue to attempt to push the prices higher but the first half of the year showed market resistance. Without a significant shift in demand we see little change for the remainder of 2011.</p>
<p>Carbon Steels: Mixed</p> <ul style="list-style-type: none"> • Long Products and Structural ↔ • Flat Products ↗ 	<p>The commodity has enjoyed some recent price growth, but the slower summer cycle coupled with reduced global demand should leave prices flat, sideways or even slightly up for the remainder of the year depending upon product form. We think HR Coil prices will be flat to declining. Prices for plate products slightly up.</p>
<p>Copper Alloys: ↗</p>	<p>The demand from China is expected to rebound from the deep April decline, and China represents 30% of the global copper demand. Limited industrial growth elsewhere and a strengthening US dollar should temper the copper price increases. We believe copper has a growth potential of 5-7% over the second half of the year.</p>

Key: ↑ Up; ↗ Slightly Up; ↔ Flat; ↓ Down; ↘ Slightly Down

About Supply Dynamics:

Supply Dynamics helps Original Equipment Manufacturers (OEMs) obtain real time visibility and control over the materials (metals, fasteners, etc.) that go into their products, irrespective of where and by whom product parts and components are manufactured. As an integral part of this “extended enterprise” solution, Supply Dynamics has developed and delivers a commercial software solution in a software-as-a-service model to customers in a variety of industries, including Aviation, Energy, Medical and Transportation. Our mission is to provide customers with real-time visibility and control over the material requirements of their extended supply chain. Our innovative processes and solutions allow customers to improve efficiency and predictability and to reduce the cost of the raw materials and component parts that go into their products. We strive to build trusting relationships with our customers, employees, and affiliated companies by doing the right thing at all times. Our commitment to this ideal is visible to all through our exceptional customer service, passion to perform, integrity, and family-centered culture. For more information please visit us a www.supplydynamics.com.