Abstract for presentation by Eric Klenz

The discussion will review the economic factors influencing the significant rises in commodity prices and their impact on producers and consumers of titanium and related metals.

Starting with introductory remarks on the titanium industry, the major producers, and end markets, the discussion elaborates on global growth expectations and demand forecasts for key end markets and/or geographies. Subsequently, the recent price movement of titanium is compared with that of various commodities, including critical natural gas, fuel oil, and other raw materials used by titanium producers, as well as with price increases for carbon and specialty steel, alloy metals, and aluminum. Global supply and demand issues that have contributed to recent run-ups in these metal commodities are also noted.

Macroeconomic effects, such as increases in Producer Price Index (PPI) and Consumer Price Index (CPI), changes in manufacturer profitability, liquidity requirements and employment, are studied in light of the recent run up in commodity prices.

Furthermore, the discussion touches upon the performance and outlook for some of the major titanium manufacturers and/or fabricators serving the aerospace, defense, and construction markets. Publicly announced capacity expansions, and potential industry consolidation are also discussed. Finally, public company valuation metrics and those from recent mergers and acquisitions in the titanium space are also presented to complement the comments on industry momentum and near-term outlook.
Economic Outlook

Presented by:
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KeyBanc Capital Markets
Agenda

Today’s discussion focuses on commodities markets supply and demand and their impacts on the Titanium industry

- Titanium industry overview
- Commodities markets: price movements and trends
- Impact of emerging economies
- Economic impacts
- Implications for the Titanium industry
Titanium Industry Overview
Industry Overview

- In 2007, an estimated $563 million of titanium sponge was consumed.

- The aerospace market accounted for 76% of titanium sponge consumption.

- The remaining 24% was used in applications such as:
  - Chemical processing
  - Power generation
  - Medical equipment
  - Armor
  - Sporting goods

Source: USGS, company reports, KeyBanc research
Titanium Price

Prices have receded from historical highs

- New capacity; several new expansion projects announced
- Delays in several aerospace platforms have impacted near-term demand
- Inflationary factors and slower economic growth have impacted prices

[Titanium Price History][1]

[1] Ti Ingot, 6Al-4V, American Metal Markets
Major Producers

- The critical North American market is dominated by TIE, ATI, and RTI.

- Equity market valuations peaked in Q207 on the basis of strong aerospace demand and manufacturing forecasts.
  - Delays in Boeing’s Dreamliner project have since hurt stocks.
  - Commodity price pressures have added to the decline in valuations.

- Most manufacturers have continued capital investments to address aerospace market.

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**Major Producers**

- ATI: 38.2%
- RTI: 19.1%
- Time: 38.7%
- Other: 4.0%

**Capital Markets Trends**

- CAGR (N.A.): 128%
- CAGR (N.A.): (56%)

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Sources: CapitalIQ, KeyBanc research

[1] As of Friday, September 12, 2008 close
Predominant End Market: Aerospace

- Ti use in commercial aircraft expected to increase significantly with new airframe designs
  - Approx. 250,000 lbs. Ti alloys per Boeing 787 and Airbus A380
  - Major increases from prior generation commercial and military aircraft

- Global RPM\(^1\) has increased nearly 9% per year since 2003
  - Expected to continue to grow at 6% per year with strong demand from emerging economies
  - Steep rise in fuel costs remain a threat to outstanding aircraft orders for the coming years

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**Worldwide Aircraft Deliveries**

- Boeing deliveries
- Airbus deliveries
- Regional jet
- Military A/C

**Titanium Used Per Aircraft**

- Pounds of Ti Per Plane (000's)

Sources: Airline Monitor, Forecast International, Boeing, company presentations, KeyBanc research

\(^1\) Revenue Passenger Miles
The O-Word

Brent Crude Oil Price History

- 5-Yr. Increase: 208% (25% CAGR)
- Sep 17, 2008: $92
- Jan 2007: $52
- Aug 2006: $78
- Jul 2008: $147

Sources: Bloomberg
Commodity Prices: Coal & Gas

- Thermal coal prices for electric utilities and industry have increased nearly 2.5x on average
  - Down slightly in Sep from Aug all-time highs
- Sharpest increases seen in high heat-content coal from the Northern Appalachian basin

- Natural gas remains a volatile commodity
- Sudden price movements, as seen in Q305, were repeated last summer
- Manufacturers regard $8/mbtu as a practical hedging point

Sources: Bloomberg, Wall Street Journal, KeyBanc research

KeyBanc Capital Markets
Global supply shortages, combined with high freight costs, have led to steep price increases for ore.

BHP and Rio Tinto were able to get even higher prices for shipping to Chinese manufacturers than those set by Vale with Japanese producers.

BMA[^1] priced annual hard coking coal contract with Japanese steelmakers at $300/mt in April; 3.0x prior contracts.

Supply deficit of 2 million mt expected for 2009 and 10.6 million mt in 2010.

Australian exports limited by Queensland flooding and other infrastructure constraints.

[^1]: BHP Billiton Mitsubishi Alliance, the world’s largest exporter of hard coking coal.
Commodity Prices: Steel

- Steel prices have doubled since Q3 2007
- Sheet steel prices have retreated in September, but floor over 2007 highs of $500/ton

Sources: American Metal Markets
Commodity Prices: Other Basic Metals

- LME aluminum prices doubled over the last five years
- Nickel and Zinc prices have fallen the most since 2007
- Copper markets have remained stable through September, a result of production outages and related quality issues faced by major producers
- The cash cost curve for miners and smelters of aluminum and copper support continued elevated prices

Sources: American Metal Markets, LME, Wall Street Journal
Commodity Prices: Electricity Power

- Electric utilities worldwide have experienced significant increases in raw material costs across the board for fuel oil, natural gas and coal.

- While U.S. thermal coal spot prices increased 120% YoY as of August on average; premium Pittsburgh seam prices increased nearly 230%.

- Metal producers in US, China, Ireland and other regions across the world have experienced moderate to high energy cost pressures.

### 2008 – U.S. Share by Energy Source

- 50.3% Coal
- 19.0% Natural Gas
- 19.8% Other Energy Sources
- 6.5% Hydroelectric Conventional
- 3.3% Nuclear
- 1.1% Petroleum

### Retail Electricity Prices[1]

- Residential
- Commercial
- Industrial

15% Increase over pre-2000 average prices

Sources: Bloomberg, KeyBanc research

Commodity Prices: Corn

- Corn prices nearly doubled since Jan 2007 to reach all-time highs of $761/bushel in July.
- Prices have since fallen back, but still remain at 2.3x the average prior to the 2007 surge.

Source: Bloomberg
Commodities Market Forecast

- Major exchange-traded futures forecast the continuation of a strong global demand scenario for basic metals like aluminum.

- Crude oil futures do not suggest a return to 2007 price levels.
  - Crude oil activity suggests that Summer 2008 prices reached speculative highs but global demand remains strong and will support a higher floor.

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**Brent Crude Futures (NYMEX)**

- Sep 2008
- Sep 2007

**Aluminum Futures (LME)**

- Sep 2008
- Sep 2007

Sources: Bloomberg, LME
Global Commodities Demand Drivers
Commodities Demand Drivers

- Emerging market economies’ growth has been the most significant driver of commodities demand; strongest continued demand coming from BRIC and Middle-East nations
  - Infrastructure and durable goods demand
  - Increased transportation needs
  - Power generation
  - Higher standards of living

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**Growth in GDP (PPP, current $)\(^{[1]}\)**

**Regional Growth & Contribution to World GDP**

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\(^{[1]}\) International Monetary Fund, based on current USD purchasing power parity
Urbanization of China

- Urbanization of Chinese population is more advanced than other developing economies, but illustrates a demographic trend.
World Demand for Metals

- As developed markets’ metal needs have declined, emerging economies have driven demand.
Demand Intensity – Steel

- Per capita usage of base metals has increased in emerging economies but still significantly lags that of developed nations
- Apparent consumption of steel:
  - China's per capita steel consumption up nearly 2.5x from 272 lbs. in 2001 to 678 lbs. in 2007
  - Total consumption in BRIC countries up 74% in the same period
- Demand intensity relatively flat in industrialized western economies
  - NAFTA steel consumption flat; Euro zone up 19% between 2001-2007

Per Capita Consumption – Steel (2001-2007)

Apparent Steel Consumption

Sources: Bloomberg, IMF, IISI, KeyBanc research

[1] IIS World Steel in Figures - 2008
Demand Intensity – Other Metals

- Per capita consumption of copper and aluminum in emerging economies still have room to grow to match consumption levels of developed economies
  - Chinese per capita consumption of aluminum is about a quarter that of the U.S., but rising at a higher pace while demand intensity in the developed world has flattened
  - Per capita copper consumption is about half that of the U.S.; demand remains strong and is expected to reach 9 lbs by 2010

Per Capita Consumption – Aluminum

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<th>Japan</th>
<th>China</th>
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<tr>
<td>2006E</td>
<td>25.00</td>
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Per Capita Consumption – Copper

<table>
<thead>
<tr>
<th>Year</th>
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</tbody>
</table>

Sources: Bloomberg, IMF, KeyBanc research
Crude Oil Demand

Although the U.S. remains the largest importer of oil, the growth in Chinese demand has far outpaced that in the U.S. and other developed economies.

Sources: Bloomberg
Supply Issues

- Several supply-side constraints have impacted global commodity markets and contributed to increasing prices
  - Underinvestment in the global mining industry has been compounded by long lead times for fixed assets as well as geopolitical issues with access to reserves
  - Power shortages in China, parts of Europe, South Africa and South America
  - Shortage of mining and transportation equipment, including bulk carriers, as trade growth has exceeded growth in maritime shipping fleets
  - Unstable governments and/or political instability in Africa, Middle East
Global Economic Impacts

- Energy and other commodity cost increases have contributed to inflation and, along with capital market turmoil, have led to a broad economic slowdown
  - The U.S. GDP rose 0.5% sequentially from the first quarter of 2008 and 1.8% from the second quarter of 2007
  - The combined gross domestic product of the 30-member OECD increased by only 0.2% and 1.9% sequentially and year-over-year, respectively
  - Japan’s GDP slid 2.4% from 2Q07; Hong Kong’s slid 1.4%, the Euro zone shrunk 0.2%, and growth of emerging markets powerhouses like China and India slowed significantly

- Although commodities have taken a breather since early July, higher prices have increased transportation, construction, and food costs across the globe

Sources: Wall Street Journal, Bloomberg
Global Commodities Supply/ Demand

- The Baltic Dry Index, a measure of global trade activity, has dropped considerably since July 2008.

- OPEC and other major oil producers have not opened the spigots.

- China and other emerging markets remain a considerable demand-center for crude oil and other commodity metals.

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**Baltic Dry Index**

- Graph showing the Baltic Dry Index from July 2001 to July 2008.

**U.S. Steel Exports**

- Graph showing total dollar value of U.S. steel exports for different years.

*Sources: IISI, Bloomberg*
Inflationary Pressures

- U.S. PPI for Finished Goods jumped 1.2% in July, led by 3.1% leap in wholesale energy prices
  - Leaves 12-month PPI at +9.8% (3.5% higher than in July 2007)

- Highest inflation figures seen since 1981
  - Primarily commodity-driven
  - Price pressures eased in August

- July CPI increased 0.8% sequentially, with a 0.3% increase for core CPI

- August CPI retracted 0.1% on lower oil prices; core CPI advanced 0.2%
  - YoY increase of 5.4%, down slightly from 17-year-high of 5.6% in July

Sources: Bloomberg, KeyBanc research, ClearView Economics
Manufacturing Outlook

- U.S. durable goods orders (M3) jumped 1.3% in July after registering four consecutive quarters of declines
  - Bolstered by aircraft orders
  - Other durable orders also rose 0.7%
  - Orders rose 4.6% for machinery, 2.2% for primary metals, and 0.4% for fabricated metals
- Good barometer for non-defense capital spending, in spite of weak credit markets

Sources: Census Bureau, ISM, ClearView Economics, KeyBanc research
Implications for the Titanium Industry
Industry Outlook

- While backlogs are at record levels, order entry will remain slow until Boeing and Airbus resolve supplier and labor issues and ramp up to full scale production and delivery – expected by late 2009.

- Alternative asset managers continue to seek oil and commodities as potential hedging vehicles; therefore these markets will continue to pressurize manufacturers and airlines.

- Commodity price inflation increases risk in long term forecast of RPM and new aircraft demand.

**Ti Demand Forecast**

**Aerospace Orders (2008-2011)**

Sources: CapitalIQ, KeyBanc research, company presentation.
Managing Liquidity

- Manufacturers’ elevated working capital needs to continue into the near future
  - Days Cash needs have increased by an average 33 days for the major Ti manufacturers
  - Mostly results from higher priced inventory and receivables

- Working capital assets as a percentage of total assets have inched up an average 280 basis points since the first quarter of 2005

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**Change in Days Cash (Q208 vs. Q205)**

- ATI
- RTI
- TIE

**Working Capital as % Total Assets**

- ATI: 50.9% in Q105, 41.0% in Q208, 48.5% in Q208
- RTI: 53.8% in Q105, 43.7% in Q208, 51.3% in Q208

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Sources: CapitalIQ
Concluding Remarks
Titanium Industry players are expected to address a strong growth market over the next 5-10 years, especially in commercial aerospace, power, and general industrial arenas.
Concluding Remarks

- The movement of traditionally agrarian economies towards industrialization has fuelled the current commodity cycle.

- Commodity prices expected to decline in near term, but will remain above past highs
  - Oil futures remain near $100/bbl for the short term
  - Metals prices remain near all-time highs despite the recent pullback

- Demand for titanium is influenced by the same demographic trends and industrialization

- Commodity price inflation creates additional risks for producers, fabricators, and users of titanium
  - Consumer driven economic slowdown
  - Greater borrowing needs in a historically tight credit environment
  - Enhanced risks to RPM forecast
Questions?

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