Steel Industry Outlook
Federal Reserve Bank of Chicago
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Outline

• Overall Outlook
• End Market Outlook
• 2007 Forecast
  - Steel Demand
  - Prices
• Inputs and other factors
Economic Outlook for 2007

- GDP 3.5% 3.5% 2.7%
- Industrial Production chge 3.9% 5.1% 2.7%
- Business Inventory Chge $b 22.7 50.1 15.5
- Auto sales (million units) 16.9 16.6 16.7
- Housing Starts (mil units) 2.03 1.84 1.64
- Consumer Sentiment 87.4 91.9 90.0
- CPI 3.4% 3.5% 2.7%
- Mfg Capacity Utilization 78.9% 80.8% 80.0%
Industrial Production Manufacturing Only

Manufacturing Production Index and Capacity Utilization
Note that on November 7, 2005 the Federal Reserve changed the base year to 2002.

The decline in September was small but fairly broad based.
This ISM index continues to show forward growth in the manufacturing sector, but at a slower rate.

Over 50 indicates expansion in manufacturing.

Source: Institute for Supply management
Automotive

- Market has underperformed for five straight years.
- Imports continue to rise; from 3.2 million in 2002 to 4.2 million in 2005 and 4.5 million in 2006.
- A little over one ton of flat rolled steel per vehicle; 350 pounds of bars and other per vehicle
North American Pipeline Forecasts

Miles of Pipeline Additions in North America

Increased demand and new sources of natural gas supply are driving NG pipeline growth

Source: Energy and Environmental Analysis, Inc.
Wind Power

U.S. Installed Capacity

<table>
<thead>
<tr>
<th>Year</th>
<th>Megawatts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2,300</td>
</tr>
<tr>
<td>2001</td>
<td>4,000</td>
</tr>
<tr>
<td>2002</td>
<td>4,600</td>
</tr>
<tr>
<td>2003</td>
<td>6,200</td>
</tr>
<tr>
<td>2004</td>
<td>6,800</td>
</tr>
<tr>
<td>2005</td>
<td>8,900</td>
</tr>
<tr>
<td>2006(f)</td>
<td>12,000</td>
</tr>
<tr>
<td>2007(f)</td>
<td>15,500</td>
</tr>
</tbody>
</table>

Source: AWEA

Plate consumption of 65 tons per wind turbine or over 150,000T in 2006
Major* Appliance Annual Shipments

History and Forecast

Appliance shipments drop from record levels as housing starts fall.

* Washers, Dryers, Dish Washers, Refrigerators, Freezers, Free-Standing Ranges, Built-in Ranges
Electric Machinery

- Electric motors feed everything
- U.S. demand continues to be steady
- Hurricanes and lack of Hurricanes
- Chinese motors enter market through devices
- Domestics active in China and India
- Industry consolidation continuing
  - Emerson
  - Regal/Beloit
  - AO Smith
  - Tempel Steel
- 2005 = 1.6m tons
- 2006 = 1.6m tons
- 2007 = 1.6m tons
Continued growth in consumption of office furniture is anticipated in 2007. Imports constitute approximately 22% of the market, essentially unchanged from 2006.
U.S. Railcar Production

Thousands of Units

Record backlogs in 2006 will fuel strong railcar production throughout 2007. Replacement of an aging fleet, strong economic growth and ethanol production increases are all major drivers.
Highways and Bridges

Value of Construction Work

Highway and bridge construction is expected to grow another 4.5% in 2007 partially in response to increased funding under the federal Transportation Bill (SAFETEA-LU).
US carbon sheet and strip* imports, through October 2006

* HR, CR, HDG, EG, other coated, HR Strip, CR Strip
The USD will weaken against the Euro and Yen by another 2-5% by the end of 2007. Although the Chinese Yuan will have a controlled float, it will still strengthen vs the US$. 

2007 Forecast
1US$ = 0.76 €
A 2% appreciation

2007 Forecast
1US$ = 110 ¥
A 5% appreciation
U. S. Steel Service Center

Number of Months Shipments on Hand

Based on a representative sample of the U.S. Service Center Industry

Carbon Flat Rolled

Not seasonally adjusted January 2002 through August 2006
U. S. Steel Service Center

Total Shipments & Inventories

Carbon Flat Rolled

Based on a representative sample of the U.S. Service Center Industry

Monthly Shipments ,000 Tons

Ending Inventory ,000 Tons

Not seasonally adjusted

January 2002 through September 2006
Apparent steel consumption (ASC) in 2005 was significantly impacted by withdrawals from inventory built up during 2004. Inventory was replenished during 2006. Withdrawals from inventory are assumed for Q1 2007. SC inventories grew by 3m tons in 06. If demand remained neutral in 07 apparent consumption should be 3m tons lower as the inventory is burned off. 07 will see a more neutral affect on apparent consumption.
Steel Prices

Source: Purchasing Magazine
Trends

- Global demand is growing
- Lack of investment in infrastructure has put pressure on the global industry
- Production cost increases
- China still leads consumption growth
Global Apparent Steel Consumption

Short Tons x 1 million


754  775  837  849  904  977  1067  1106  1220  1270
World and China Consumption

000s of tons


World  China consumption
Despite the US economy slowdown, world growth should remain robust.

Globalization contributes to the convergence of GDP growth rates between regions.

- World growth is stabilizing above 3% p.a.
- North America is already showing a slowdown
- European economies remain quite weak in comparison with ROW
- Despite the US economy decline in 2007, growth in the rest of the world should remain solid
- Growth in Asia will remain strong as China and India continue to surge
Zinc Prices

LME US$ per Ton

Raw Materials / Zinc / LME Cash seller & settlement $/t, end of month

January 2004 through August 16, 2006
Iron Ore Prices
CVRD Tubarao Pellets

% Change Year on Year
## Key World Commodity Pricing

<table>
<thead>
<tr>
<th>Commodity</th>
<th>2000</th>
<th>2006</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Coal</td>
<td>$25.1</td>
<td>$56.4</td>
<td>125%</td>
</tr>
<tr>
<td>$/tonne</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coking Coal</td>
<td>$44.45</td>
<td>$94.23</td>
<td>112%</td>
</tr>
<tr>
<td>$/ton</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Iron Ore</td>
<td>$28.8</td>
<td>$77.35</td>
<td>169%</td>
</tr>
<tr>
<td>$/tonne</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>$110</td>
<td>$293</td>
<td>166%</td>
</tr>
<tr>
<td>$/1000m3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>4.3</td>
<td>5.78</td>
<td>34%</td>
</tr>
<tr>
<td>Cents/Kwh</td>
<td></td>
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</table>

Source - steelonthenet.com
Supply of scrap substitutes are now beginning to flow into the USA again and scrap processing has increased. Some scrap price moderation is expected.
2007 Forecast Summary

- The economy will continue to grow only at a slower pace. No recession is forecast over the next 18 months.
- Housing starts will drop from record levels
- Auto production steady
- Appliance shipments will decrease slightly from record levels
- Non-residential construction will continue to be strong; the manufacturing sector is strong.
- Inventories will decrease
- Imports will decrease
- Steel consumption and apparent consumption will decrease slightly compared to 2007.
- Energy and geopolitical events remain risk factors.