Steel Industry Outlook
Federal Reserve Bank of Chicago
December 5, 2008

Robert J. DiCianni
ArcelorMittal USA
Agenda

• 2008 Review
• 2009 USA Steel Forecast
• Global Outlook
• Key Issues
• Risks for 2009
In the first half of 2008 Steel Markets Outperformed the Overall Economy

- **Strong Markets**
  - Non-residential construction
  - Energy (line pipe, OCTG)
  - Machinery
  - Mining
  - Farming
  - Infrastructure (highways, roads, bridges)
  - Exports
- **Weak Markets**
  - Auto
  - Banking and Financial
  - Residential Housing
Manufacturing index drops to 38.9% in October. Recession zone of ISM is 40-45%. This is the lowest reading of the ISM Index since September 1982. This index is usually predictive of manufacturing activity across the next ~6 months.
Capacity utilization starts to fall as mills begin to cut production in order to more closely match demand.

Last significant production cuts were in 4Q06-1Q07.

Source: American Iron and Steel Institute
Raw Steel Production 2008

- 1st Quarter: 27.5m tons, 2.1m tons / wk
- 2nd Quarter: 27.6m tons 2.1m tons / wk
- 3rd Quarter: 27.2m tons 2.0m tons / wk
- 4th Quarter: 19.7m tons 1.6m tons / wk (AM projection)

Source: American Iron and Steel Institute
2008 Steel Prices

CRU Monthly Base Prices 2008: Midwest ($/ton)
Scrap Prices: #1 Busheling - Chicago

$280 drop in premium scrap in Oct (following $280 drop in Sept too) as export activity continues to slide and domestic production cuts limit demand.

Source: American Metal Market Magazine
2009 Steel Outlook
GDP Growth Forecast

**U.S. continues period of very weak growth in 2009.**

- Recession is deepening. 4 quarters of real GDP decline are anticipated.
- The housing bottom (in terms of starts) has been pushed out from 4Q08 to 2Q09.
- Non-residential construction will decline in 2009.
- Unemployment is quickly rising.
- Credit conditions will ease only slowly.
- The weak $ will continue to provide opportunities for U.S. exports. However, global growth is slowing which and limit export opportunities.

**Source:** Global Insight, Aug 2008 + Sept 2008 Alternate + Nov 2008
Housing Starts
Millions of units

Source: Global Insight

Forecast has housing market hitting bottom in 2Q09. Regardless of when the bottom hits, a very slow recovery will proceed.
Residential investment (housing, remodeling, etc) will have another very tough year in 2009, while non-residential investment (plants, equipment, computers, etc) will cease to grow in 2009 after 6 years of strong growth. Non-residential growth potential has been reduced due to economic and financial fallout.
USA Energy Market Steel Demand
million of tons

OCTG forecast assumes $xxxx/barrel oil for 2009

Source: Preston Pipe & Tube Report
Wind Power
U.S. Installed Capacity
8,586 MW currently under construction

Plate consumption of 125 tons per wind turbine or over 375,000T in 2007

Source: AWEA
Appliance sales are hurt by the housing market but replacement market keeps appliance sales running above housing drop. Jan-Aug ’08 sales are off 8% compared to housing starts being off by 31% over the same period.

A further reduction in housing starts in 2009 will impact sales. Replacement market will be weaker than normal due to poor economic conditions.

Core appliances = washers, dryers, refrigerators, ranges, dishwashers, and freezers
Following 4 years of growth, the value of U.S. office furniture production is dropping in 2008 and 2009 (along with consumption). Imports constitute approximately 15-20% of the market.
USA Infrastructure upgrade..

- Of 592,000 bridges in the USA, 26% are either structurally deficient or functionally deficient.
- A high percentage of water systems, sewage systems, levees and roads are aged and near their end of life.

**Highway Bill Passes Congress**

“In September’2008, Congress approved an emergency infusion of $8 billion into a federal highway fund, a move that would prevent states from delaying or canceling hundreds of road projects. The $8 billion infusion is a substantial new public investment in highways and transit programs next year, with a healthy expected bump-up in funds allocated to the bridge program and various other steel consuming infrastructure related projects.”

The current highway bill expires in 2009. The replacement bill next year is expected to come in at an authorization level of $286 to $500 billion over a six year period.
Automotive Sales

- In 2009 the auto market will continue to buck serious headwinds. Cyclical downturn, economic uncertainty, and structural changes contribute to depressed sales outlook.
- High gas prices are changing the mix that consumers want. Auto companies cannot respond fast enough to the change in consumer’s tastes. Small cars are now in demand and large trucks are not.
- Residual values for gas guzzlers is dropping, causing consumers to delay purchase decisions. Consumers are holding rather than buying new more fuel efficient vehicles.
- Auto OEMs will still work to reduce incentives and unprofitable fleet sales.
- Slump in housing is hurting pickup truck sales.
- After 3 years of auto sales declines, pent up demand offers some upside potential in the next decade.

Source: JD Power & Associates
Automotive Production

- Big 3 cut truck production and capacity as demand shifts to small cars.
- Growth of imports; 2002 - 3.2 million units to 2007 - 4.6 million.
- Imports will continue to rise in 2008 and 2009 due to mix change from trucks to cars.
- No inventory rebuild in 2008 and 2009. OEMs remain vigilant.
Other Markets

- Railcar
- Electric Motors
- Farming
- Machinery
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
U. S. Steel Service Center
Total Shipments & Inventories: Carbon Flat Rolled
Based on a representative sample of the U.S. Service Center Industry

An inventory liquidation process has begun as shipments have begun to deteriorate.
Apparent Steel Consumption: USA

Total Steel

<table>
<thead>
<tr>
<th>Year</th>
<th>History</th>
<th>Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>'00</td>
<td>126.4</td>
<td></td>
</tr>
<tr>
<td>'01</td>
<td>112.0</td>
<td></td>
</tr>
<tr>
<td>'02</td>
<td>113.1</td>
<td></td>
</tr>
<tr>
<td>'03</td>
<td>111.2</td>
<td></td>
</tr>
<tr>
<td>'04</td>
<td>127.4</td>
<td></td>
</tr>
<tr>
<td>'05</td>
<td>118.3</td>
<td></td>
</tr>
<tr>
<td>'06</td>
<td>132.8</td>
<td></td>
</tr>
<tr>
<td>'07</td>
<td>119.3</td>
<td></td>
</tr>
<tr>
<td>'08(f)</td>
<td></td>
<td>107.4</td>
</tr>
<tr>
<td>'09(f)</td>
<td></td>
<td>101.5</td>
</tr>
</tbody>
</table>

Apparent consumption = AISI shipments + finished imports – exports – double count

Apparent steel consumption will drop in the 2nd Half of 2008 and continue into 2009. In addition to the weakness in automotive and other consumer durables, non-residential construction will contract. In light of recent events, we have revised the 2008-2009 forecast to reflect the additional downside risk from the current economic environment.
2009 USA Steel Shipments Forecast

• 1st quarter: 19.8m tons
• 2nd quarter: 21.5m tons
• 3rd quarter: 23.7m tons
• 4th quarter: 25.3m tons
• Total: 90.3m tons
Imports: Carbon Flat Roll

2006-2008 Monthly Imports

Final import statistics from U.S. Census Bureau; Sep 2008 are preliminary figures, Oct 2008 are license figures.

There has been an up tick in imports of carbon flat rolled in September and October in the face of declining demand. That has increased foreign share. The September ISM Steel Buyers Survey indicates that foreign mills are more active in seeking U.S. business.
Global Crude Steel Production has dropped rapidly
Chinese inventories have been dropping for the past 6 months
Global Outlook
Large scale bank bailouts prevent severe global recession but world growth slows in 2008-2009 (2007=3.9%) 
Positive global growth still helps support U.S. economy. 
China, India, Brazil and CIS still lead growth. 
Recession in NAFTA and Europe will continue through H1 of 2009. 

Source: ArcelorMittal Commercial Coordination Aug 22, 2008
Global Apparent Steel Consumption
(in millions of metric tons)

Global ASC, except for China, will fall from Q4, 2008, to Q3, 2009.

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed World</td>
<td>419</td>
<td>395</td>
<td>377</td>
</tr>
<tr>
<td>China</td>
<td>407</td>
<td>437</td>
<td>456</td>
</tr>
<tr>
<td>ROW</td>
<td>378</td>
<td>397</td>
<td>391</td>
</tr>
<tr>
<td>Total</td>
<td>1,204</td>
<td>1,229</td>
<td>1,224</td>
</tr>
</tbody>
</table>
Key Issues
Steel demand will continue to grow, particularly in China and India …

The steel intensity of an undeveloped economy is very low. As development gets underway, steel consumption increases rapidly, since the initial stages of development are driven by fixed investment and infrastructure – both of which are steel intensive. In advanced economies, steel intensity declines, as services and consumer goods grow in importance. In advanced economies, steel intensity declines, as services and consumer goods grow in importance. In advanced economies, steel intensity declines, as services and consumer goods grow in importance.

"When demand returns, structural lack of supply in steel and basic materials will again become the key issue."

Economic development in non-OECD countries will drive significant growth in steel consumption – over the next 10 years.

*Developed world includes US, Canada, EU15, Japan and Korea
Source IISI
Global Growth

China

World steel apparent demand from 1950 to 2007 (millions of tonnes)

China steel apparent demand from 1984 to 2007 (millions of tonnes)

Chinese new dynamic and growth in other emerging economies have led to an average 7% growth of the steel market in the last 7 years.

Source: IISI.
World capacity growth to slow due to increasing challenges...

World steel capacity utilisation (1970-2007)

Steel capacity expansion limitations:

- Natural resource scarcity (coking coal, iron ore, scrap, energy...)
- Steel equipment and engineering suppliers are increasing lead times
- Strict government measures for capacity control, credit control, closures and export taxes in China
- Environmental restrictions (CO₂, dust...) particularly in Europe and Japan
- Land availability, challenges related to population resettlement and time-consuming administrative process in India
- Infrastructure and logistic bottleneck in CIS
- Financial resources and credit availability

Apart from China, no major Greenfield has been built over the last 10 years and no new Greenfields are expected to start-up before 2010
Brazil and Australia dominate the seaborne iron-ore market. Over the 10-year period ending in 2006, total iron ore production increased 60% - while production from Brazil and Australia increased almost 70%.

Iron Ore
Supply: New Capacity

<table>
<thead>
<tr>
<th>Brownfield</th>
<th>Greenfield</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Growth from existing sites.</td>
<td>• Growth from new sites.</td>
</tr>
</tbody>
</table>
| • Infrastructure in place (significant expansion can require substantial infrastructure investment). | • New infrastructure required  
  – new railroads  
  – new ports or expansion  
  – etc.                                                        |
| • Lower incremental cost from additional volume – some infrastructure exists. | • Higher cost incremental volume -infrastructure is required.              |
| • Significant expansions, including infrastructure, typically require around 5 years to implement. | • Roughly 10 years to get increased output.                               |

Ore capacity expansions face significant obstacles.  
Costly and lengthy development of new capacities will keep iron ore prices high.
Risks

• Credit markets unwind slower than expected.

• Too much liquidity in the system will lead to another round of commodity inflation.

• Cap and trade legislation is passed in 2009.
Energy efficiency must be a priority for steel producers in developing countries.

**Total steel-industry CO\(_2\) generation in 2005 (millions of tons):**
- **China:** 925.1
- **India:** 81.8
- **USA:** 94.9

**2005 crude steel production (millions of metric tons):**
- **China:** 3.0
- **India:** 2.5
- **USA:** 1.5

**CO\(_2\)/ton generated by steel production (2005 estimate):**
Summary

• The fourth quarter of 2008 is the bottom of the market.
• First quarter 2009 will continue weakness.
• 2009 will show gradual improvement in the second half.
• The dollar will be slightly stronger in 2009 but will remain weak compared to recent historic levels.
• With no inventory rebuilding and no great surge in imports steel prices will be relatively stable in 2009.