Understanding Material Price Uncertainty

Design-Build Institute
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Reed Construction Data

When we speak of material prices, we are generally speaking of commodities. Commodities are objects that come out of the earth, such as corn, sugar, cattle, and oil. Commodities are also raw materials used to create consumer products, iron ore, copper, zinc, plastics.

Factors Affecting Commodity Prices

- Availability of Raw Materials
- Ability to Process and/ or Transport
- International Market Demand
- US Construction Demand
- Strength/ Weakness of the US Dollar

Top Ten Countries By Population

<table>
<thead>
<tr>
<th>Country</th>
<th>Population (in Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1317</td>
</tr>
<tr>
<td>India</td>
<td>1130</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>302</td>
</tr>
<tr>
<td>Indonesia</td>
<td>224</td>
</tr>
<tr>
<td>Brazil</td>
<td>187</td>
</tr>
<tr>
<td>Pakistan</td>
<td>168</td>
</tr>
<tr>
<td>Nigeria</td>
<td>162</td>
</tr>
<tr>
<td>Russia</td>
<td>143</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>137</td>
</tr>
<tr>
<td>Japan</td>
<td>129</td>
</tr>
<tr>
<td>World</td>
<td>6606</td>
</tr>
</tbody>
</table>

Emerging Markets (BRIC)

- Brazil
- Russia
- India
- China

Materials Cost Drivers

- Metals: Low inventories - big jump in Asian demand - 50% + rise in ore prices - the peak price rises will be May through August
- Energy-Based Products: $130/bbl. crude oil - July prices reflect approx. $115-125 oil
- Declining $US dollar - decline may be over - no recovery soon
- Outlook: Prices up 4.5% during both 2006 and 2007 - prices will rise 7-8% in 2008 and 5-6% in 2009
Brazil

- Population: 187 Million
- Catalyst for Emergence: Gradual abolishment of socialist government beginning in 1988 and more recently the election of a new president in 2002. Brazil has vast natural resources and began exporting to provide capital for internal growth. Due to exports and the infusion of capital the middle class is growing.
- Inflation: Consumer price inflation 9%
  Producer price inflation 27%
- Construction Growth: Exceptionally strong 8% to 9%. Growth based upon transportation, ports and commodity processing
- Major Exports: Oil
  Transportation equipment
  Industrial equipment
  Steel
- Major Imports: No world strain from Brazil
  Manufactured products

Russia

- Population: 143 Million
- Catalyst for Emergence: Collapse of Communism and subsequent privatization of industry resulted in a significant growth of the middle class much more than Brazil or India.
- Inflation: Producer price: 5% - 10% and getting worse.
- Construction Growth: 9% GDP
- Major Exports: Oil and gas
- Major Imports: Very self sufficient

India

- Population: 1.13 Billion
- Catalyst for Emergence: In 2002 a non socialist prime minister was elected. He reduced import tax, encouraged foreign investment, increased government subsidies for higher education. This resulted in a growth of Indian manufacturing and the emergence of a middle class.
- Inflation: Consumer price inflation 8%
  Producer price inflation 12%
- Construction Growth: 9% GDP
- Major Exports: Intellectual capital
- Major Imports: Oil

China

- Population: 1.3 Billion
- Catalyst for Emergence: Western influence on construction began in the early 80's followed by privatization of industries. The result was the migration of workers from the farm to a better standard of living in the cities. These workers man the factories for better pay and thus create demand. A huge middle class is developing.
- Inflation: 7% to 8%, compared to 0% traditionally. Food and fuel are inflation drivers.
- Major Exports: Computer Products
  Apparel and Shoes
  Toys
  Misc Industrial Equip
  Toys
  Everything at WalMart
- Major Imports: Coal
  Iron Ore
  Copper Ore
  Soy Beans

Other Emerging Markets

- Thailand
- Korea
- Vietnam
- Pakistan
- Indonesia
- Nigeria

Decline of the US Dollar

The Dollar has declined in value 40% over the last six years
Commodity prices reflect demand (versus available supply) and help drive expansion plans. Prices shown are monthly averages.
World Commodity Prices – Resource Industries (Cont’d)

Commodity prices reflect demand (versus available supply) and help drive expansion plans. Prices shown are monthly averages.

Change in Producer Prices for Construction vs. Consumer Prices, 2003 - 2008 (December 2003 = 100) – AGC of America

Change in Producer Prices for Construction Segments, 2003 - 2008 (December 2003 = 100) – AGC of America

Change in Producer Prices for Major Construction Inputs, 2003 - 2008 (December 2003 = 100) – AGC of America

Change in PPIs for Selected Highway Inputs, 2003 - 2008 (December 2003 = 100) – AGC of America

Change in PPIs for Selected Building Inputs, 2003 - 2008 (December 2003 = 100) – AGC of America

Source: BLS (CPI, PPI)
Change in Producer Prices for Steel Products, 2003 - 2008
(December 2003 = 100) – AGC of America

Source: BLS (CPI, PPI)

100 125 150 175 200 225 250
12/03 12/04 12/05 12/06 12/07

- Hot rolled bars, plates & structural shape: 135%
- Steel mill products: 122%
- Sheet metal products: 32%
- Consumer price index: 19%

Where are we and where are we going from here???

2007-08 Recession is Mild Compared to 2001 Recession

- Quick 3.25% cut in interest rate
- Quick $160 billion tax rebate
- Net foreign trade grows rapidly
- Inventories stay lean
- Commercial real estate not overbuilt
- “Core” inflation remains in 2-2.5% range

Economic Growth Risks: Credit

- Credit crisis has largely passed
  - No longer the major constraint on housing or a significant constraint on nonresidential construction
- Recapitalization by lenders has provided adequate funds for loans
  - But now higher premiums for risky loans
- Still funds adequacy risks from defaulting auto and credit card loans and European mortgages

Economic Growth Risks: Energy

- High and uncertain energy prices have pushed business and consumer confidence down to recession level
  - This is now the major constraint on the economy and on construction
- Most of the energy price rise is over
  - Like any bubble, this one could persist for 6-9 months longer
  - The consensus outlook is for prices to begin falling later this year and drop to the $90's a year ahead
Economic Environment for Construction

- Slow GDP growth
- Uncertainty due to fear of deep recession
- Tightened mortgage lending standards
- Soaring construction materials costs
- Lower expected commercial returns
- Funding adequacy problems for highways (now) and public buildings (soon)
- Surplus of residential units for sale
- All of these constraints ease in 2009

US Construction Spending Outlook ($ millions, annual rate)

- Includes project cost inflation
- '06 = +6.3%
- '07 = +2.9%
- '08 = +3.9%
- '09 = +6.8%

Housing Collapse Ending

- Prices have fallen enough (20-50%) for bargain hunters to stop the slide in home sales
- However the lowest prices and peak foreclosures are still ahead

Housing Starts Outlook (000's, annual rate)

- '06 = -12.6%
- '07 = -26.6%
- '08 = -30.0%
- '09 = +9.1%

U.S. New Residential Construction Spending

- New Residential

U.S. Resid. Improvements Construction Spending

- Residential Improvements
Non-Residential Building Boom Stalls

- Starts ($) peaked in July/August 2007
- Spending (after inflation, $put-in-place) peaked in November/December 2007
- No significant persistent decline
  - Vacancy and rental rates weakening but still near average
  - This is not the end of a building boom - as in 2000 - to be followed by a 2-3 collapse

NR Construction Spending Outlook ($ millions, annual rate)

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.1</td>
<td>250,000</td>
<td>+ 12.8%</td>
<td>300,000</td>
<td>+ 17.6%</td>
</tr>
<tr>
<td>06.3</td>
<td>300,000</td>
<td>+ 10.6%</td>
<td>342.1</td>
<td>+ 5.4%</td>
</tr>
<tr>
<td>07.1</td>
<td>350,000</td>
<td></td>
<td>402.3</td>
<td></td>
</tr>
<tr>
<td>07.3</td>
<td>400,000</td>
<td></td>
<td>444.8</td>
<td></td>
</tr>
<tr>
<td>08.1</td>
<td>450,000</td>
<td></td>
<td>468.8</td>
<td></td>
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<tr>
<td>08.3</td>
<td>500,000</td>
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<tr>
<td>09.1</td>
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<tr>
<td>09.3</td>
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</tbody>
</table>

Commercial Market

- Hotel: Weakening activity for luxury and economy hotels
- Office: Financial market hiring boom is over and beginning to reverse
- Retail: Weak consumer spending forces expansion & renovation delays

<table>
<thead>
<tr>
<th>Year</th>
<th>Hotel</th>
<th>Office</th>
<th>Retail</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>59</td>
<td>19</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>2008</td>
<td>21</td>
<td>14</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>2009</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
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Commercial Market Still Strong

<table>
<thead>
<tr>
<th>Source: PR&amp;R</th>
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<tbody>
<tr>
<td>Change from a year ago</td>
</tr>
<tr>
<td>Office Rent</td>
</tr>
<tr>
<td>Retail Rent</td>
</tr>
<tr>
<td>Hotel Room Rate</td>
</tr>
<tr>
<td>Apt. Rent</td>
</tr>
<tr>
<td>Office Vacancy Rate</td>
</tr>
<tr>
<td>Retail Vacancy Rate</td>
</tr>
<tr>
<td>Hotel Occupancy Rate</td>
</tr>
<tr>
<td>Apt. Vacancy Rate</td>
</tr>
</tbody>
</table>

Institutional Market

- Education: Falling tax receipts force construction cuts in high growth states
- Health: Hiring stalls, insurance receipts
- Mfg.: '08 catch up on capacity needs in process industries

<table>
<thead>
<tr>
<th>Year</th>
<th>Educ.</th>
<th>Health</th>
<th>Total</th>
<th>Mfg.</th>
</tr>
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<tbody>
<tr>
<td>2007</td>
<td>13</td>
<td>12</td>
<td>14</td>
<td>21</td>
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<tr>
<td>2008</td>
<td>9</td>
<td>6</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>2009</td>
<td>8</td>
<td>8</td>
<td>11</td>
<td>3</td>
</tr>
</tbody>
</table>

U.S. Total Non-Residential Construction Spending

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.1</td>
<td>300,000</td>
<td>350,000</td>
<td>400,000</td>
<td>450,000</td>
<td>500,000</td>
</tr>
<tr>
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<td>400,000</td>
<td>450,000</td>
<td>500,000</td>
<td>550,000</td>
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<td>450,000</td>
<td>500,000</td>
<td>550,000</td>
<td>600,000</td>
</tr>
<tr>
<td>07.3</td>
<td>450,000</td>
<td>500,000</td>
<td>550,000</td>
<td>600,000</td>
<td>650,000</td>
</tr>
<tr>
<td>08.1</td>
<td>500,000</td>
<td>550,000</td>
<td>600,000</td>
<td>650,000</td>
<td>700,000</td>
</tr>
<tr>
<td>08.3</td>
<td>550,000</td>
<td>600,000</td>
<td>650,000</td>
<td>700,000</td>
<td>750,000</td>
</tr>
<tr>
<td>09.1</td>
<td>600,000</td>
<td>650,000</td>
<td>700,000</td>
<td>750,000</td>
<td>800,000</td>
</tr>
<tr>
<td>09.3</td>
<td>650,000</td>
<td>700,000</td>
<td>750,000</td>
<td>800,000</td>
<td>850,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Residential Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
</tr>
<tr>
<td>2006</td>
</tr>
<tr>
<td>2007</td>
</tr>
<tr>
<td>2008</td>
</tr>
<tr>
<td>2009</td>
</tr>
</tbody>
</table>
Heavy Construction Slows

- Spending grew at a 12% pace for three years through December - off in 2008
- The value of starts peaked last summer
- Transportation, communication and power spending slows from 21% (07) to 12% (09)
- Highway, water/ sewer, and conservation spending growth stays at about 6%

Heavy Construction Market

- Highway: Restraint from falling fuel taxes & higher costs
- Power: Usual surge after cyclical peak
- Water/ Sewer: Down due to cutback in new building sites

U.S. Total Heavy Construction Spending

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1200.8</td>
</tr>
<tr>
<td>2006</td>
<td>1218.8</td>
</tr>
<tr>
<td>2007</td>
<td>1237.5</td>
</tr>
<tr>
<td>2008</td>
<td>1256.8</td>
</tr>
<tr>
<td>2009</td>
<td>1275.0</td>
</tr>
</tbody>
</table>

Regional Economic Growth Varies

- Economic Activity Index – last three months vs. year ago

- Gulf Coast: 1.4%
- New England: 0.8%
- Pacific: 0.0%
- Mid-Atlantic: -0.2%
- South Atlantic: -0.7%
- Plains: -0.8%
- Great Lakes: -1.5%
- Rocky Mountain: -2.1%

Source: Philadelphia Federal Reserve Bank
See Expansion Index for Dallas, TX
Regional Growth Depends on Export Industries

Rapid growth industries over the last year:
- Grain
- Securities
- Oil, Gas, Minerals
- Aircraft
- Chemical
- Consulting
- Software
- Foreign tourism

Business services
Personal financial services
Industrial machinery
Biotechnology
Healthcare
Pharmaceuticals

Declining industries: home construction, mortgage, real estate, motor vehicles

Tentative Signs of Recovering Economy

- Jobs: June job loss (62,000) smaller than recent recessions
- Consumer: June quarter retail sales up 1.2%
- Construction: June project starts up 8% from May
- Inventory: June inventory/sales ratio low and declining
- Housing: Permits, starts and sales average above Dec. 2007 so far in 2008

US GDP Growth Set to Pickup

- GDP growth stalls until housing market recovers
- Current lean inventories not consistent with deep recession
- Shrinking trade deficit offsets some of domestic spending weakness

<table>
<thead>
<tr>
<th>Period</th>
<th>GDP Growth %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3 03 - Q3 07</td>
<td>3.4%</td>
</tr>
<tr>
<td>Q4 07 - Q2 08</td>
<td>1.2%</td>
</tr>
<tr>
<td>Q3 08 - Q4 09</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

Outlook Summary

- National economic growth continues to be sub-par well into next year
- US construction activity growing by year end after two + year decline
- Housing recovers slowly
- NR building market stalls then recovers slightly in 2009
- Materials cost inflation surge lasts well into 2008 with little pullback in 2009

Action Items

- We live in a world economy, monitor world conditions to understand what is happening or what might happen.
  - www.td.com
  - www.agc.org

Dallas Pricing

Graph - Gypsum Board

<table>
<thead>
<tr>
<th>U.S. $ per sq ft</th>
<th>Year and Month</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

Period GDP Growth %

Q3 03 - Q3 07: 3.4%
Q4 07 - Q2 08: 1.2%
Q3 08 - Q4 09: 2.2%
Dallas Pricing

Graph - Ready Mix Concrete. 3000 psi

Graph - Structural Steel, A36 Fabricated

Graph - 2" x 4" Framing Lumber

Graph - Electrical Wire, #10, Stranded

Graph - 2" PVC

Contact/Reuse Information

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