Putting Construction Materials Demand in Context

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Current economic influences

• Moderate real GDP growth (2-3%)
• Low inflation (CPI change 1.5-2.5%)
• Moderate job growth, low unemployment (avg. 150,000 jobs/mo., 4.6% unem rate)
• Rising real wages, personal income (2%)
• Worries about housing, credit, falling dollar
The shifting construction market

<table>
<thead>
<tr>
<th>Segment</th>
<th>2006</th>
<th>7/07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (tril. $, SAAR)</td>
<td>$1.19</td>
<td>$1.17</td>
</tr>
<tr>
<td>% of total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private residential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New SF</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td>New MF</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Improvements</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Private nonres.</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Public</td>
<td>21</td>
<td>25</td>
</tr>
</tbody>
</table>
Housing outlook

• SF: No end yet to decline in permits, starts or spending
• Don’t expect upturn before middle of ‘08
• MF: Rental construction cushioned the fall in condo starts but now many owners are trying to rent out houses and condos
## Major nonresidential categories

<table>
<thead>
<tr>
<th>Category</th>
<th>’06 spending</th>
<th>share</th>
<th>’07 change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational</td>
<td>$86 billion</td>
<td>16%</td>
<td>+13%</td>
</tr>
<tr>
<td>Commercial</td>
<td>$76 billion</td>
<td>14%</td>
<td>+15%</td>
</tr>
<tr>
<td><strong>Hwy &amp; street</strong></td>
<td><strong>$72 billion</strong></td>
<td><strong>13%</strong></td>
<td><strong>+ 5%</strong></td>
</tr>
<tr>
<td>Office</td>
<td>$55 billion</td>
<td>10%</td>
<td>+22%</td>
</tr>
<tr>
<td>Other</td>
<td>$256 billion</td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>Nonresid total</td>
<td>$545 billion</td>
<td>100%</td>
<td>+14%</td>
</tr>
</tbody>
</table>
Materials costs

- Persistently higher increases for construction inputs than for overall economy:

<table>
<thead>
<tr>
<th>12 mo. to:</th>
<th>12/04</th>
<th>12/05</th>
<th>12/06</th>
<th>7/07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const PPI</td>
<td>9.1%</td>
<td>8.2%</td>
<td>4.6%</td>
<td>2.8%</td>
</tr>
<tr>
<td>CPI-U</td>
<td>3.3%</td>
<td>3.4%</td>
<td>2.5%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Cumulative from 12/03 to 7/07:

| Const PPI | 29%  |
| CPI-U     | 13%  |

- PPI drivers: steel, gypsum, diesel, asphalt, concrete, copper, plastics, aluminum
Cumulative Change in Consumer & Construction Prices
(All PPIs = 100 in 12/03)
Cumulative Change in PPIs for Construction Types
(All PPIs = 100 in 12/03)

- CPI-U
- Highway & Street Construction
- Other Heavy Construction
- Nonresidential Buildings

Percent of 12/03 Level

12/03 12/04 12/05 12/06 07/07
Cumulative Change in PPIs for Selected Building Inputs
(All PPIs = 100 in 12/03)

- CPI-U
- Plastic Construction Products
- Gypsum Products
- Lumber & Plywood

Percent of 12/03 Level

07/07
Cumulative Change in PPIs for Selected Metal Products
(All PPIs = 100 in 12/03)

- Steel Mill Products
- Copper & Brass Mill Shapes
- Aluminum Mill Shapes

Percent of 12/03 Level vs. Time (12/03 to 07/07)
Outlook for materials (3-6 months)

- Falling prices: wood, gypsum products; perhaps plastics
- Likely to rise: diesel, asphalt, copper
- No shortages but longer lead times for some items
- Year-over-year PPI change: 3-5%
Outlook for materials (1-5 years)

• Construction remains dependent on specific materials
• Same materials in demand worldwide, with uncertain supply growth (e.g., copper, oil)
• Construction requires physical delivery
• Thus, industry is subject to price spurts, transport bottlenecks, fuel price swings
• Expect 6-8% PPI increases, higher spikes
Construction labor costs, availability

Average hourly wages, 8/06-8/07: +4.5%
• Construction employment change: -0.7%
  - Residential construction: -4.5%
    (res building & specialty trades)
  - Nonresidential construction: +1.5%
    (nonres building & specialty trades +1.4%;
     heavy & civil engineering const. +1.6%)
• Architectural, engineering services: +2.9%
• Nonfarm total: jobs +1.3%, wages +3.9%
Construction labor outlook (12/07 vs. 12/06)

• ‘Official’ rise in nonres. employment: 2-4%
• ‘Official’ decline in res. employment: 4-6%
• + 400-500K ‘res’ specialty trades in nonres
• = Actual nonres. employment rise: 11-16%
• Actual res. employment loss: 16-20%
• Wage increase: 5% (partly due to greater proportion of nonres., hence higher-paid)
Summary for 2007

• Total const. spending: -6% to -3%
  Res: -15% to -20% (huge drop in new SF; MF and improvements down slightly)
  Nonres: +10-15% (led by energy & power, hospitals, lodging)

• Materials costs: +3-5% Dec.-Dec.

• Labor costs: +4.5-5.5% Dec.-Dec.
Summary for 2008

- Total construction spending: +1-5%
  Res: +1-3% (turnaround after mid-2008)
  Nonres: +3-7% (led by energy & power, hospitals; weaker highways, lodging)
- Materials costs: +6-8%
- Labor costs: +5-6%
AGC Economic Resources
(sign up by email to simonsonk@agc.org)

• The Data DIGest: weekly one-page email
• PPI tables: emailed monthly
• Construction Inflation Alert: Oct. & March
• Audioconferences: Dec. & June
• State-specific emails (timing varies) and fact sheets: www.agc.org/factsheets
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