Construction & Materials Outlook

January 12, 2011
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Current economic influences on construction

- GDP, personal income: gradual acceleration
- Continuing problems for office, retail, warehouse
- Loans for developers remain tight-to-unavailable
- State/local spending: infrastructure not a priority
- Federal spending helped but may decline soon
- Price spikes for diesel, copper, possibly steel

Source: Author
Construction spending: trend, latest level, 12-mo. change
Seasonally adjusted annual rate (SAAR), March 2006-November 2010

Source: Census Bureau construction spending reports
Federal funding sources and outlook

• Stimulus - 61 programs, totaling $135 billion; at peak now
• Base realignment – at peak now, due to end 9/30/11
• Gulf Coast hurricane work – at peak, due to end 6/1/11
• Highway, airways trust funds – on short-term extension
• Water, wastewaster state revolving funds – flat or down

Source: Author
Construction-related stimulus funding (~$135 bil.)

- Transportation:
  - $49 billion
    - $2 airports, ports
      - $18 transit/rail ($8 “high-speed”)
    - $28 Highway

- Buildings:
  - up to $35 billion
    - $0 to $9 discretionary
    - $8 housing
    - $6 other federal
    - $6 GSA
    - $7 DOD
    - $11 electric grid ($4.4 “smart grid”)

- Energy/technology:
  - $30 billion
    - $5 weatherization
    - $6 energy grants
    - $7 wireless/broadband

- Water/environment:
  - $21 billion
    - $5 Corps
    - $7 water/wastewater
    - $6 waste cleanup

Source: Author
Nonres totals (billion $, SAAR), share & 12-month change

<table>
<thead>
<tr>
<th>Nonresidential</th>
<th>11/10 Total</th>
<th>Share</th>
<th>11/09-11/10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$563 billion</td>
<td>100%</td>
<td>- 7%</td>
</tr>
<tr>
<td>Highway and street</td>
<td>87</td>
<td>15</td>
<td>+ 7</td>
</tr>
<tr>
<td>Educational</td>
<td>87</td>
<td>15</td>
<td>- 7</td>
</tr>
<tr>
<td>Power</td>
<td>86</td>
<td>15</td>
<td>+ 1</td>
</tr>
<tr>
<td>Health care</td>
<td>41</td>
<td>7</td>
<td>- 2</td>
</tr>
<tr>
<td>Commercial</td>
<td>39</td>
<td>7</td>
<td>- 15</td>
</tr>
<tr>
<td>Transportation</td>
<td>39</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Office</td>
<td>37</td>
<td>6</td>
<td>- 19</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>34</td>
<td>6</td>
<td>- 35</td>
</tr>
<tr>
<td>Sewage and waste disposal</td>
<td>27</td>
<td>5</td>
<td>+ 8</td>
</tr>
<tr>
<td>Amusement and recreation</td>
<td>19</td>
<td>3</td>
<td>+ 11</td>
</tr>
<tr>
<td>Communication</td>
<td>18</td>
<td>3</td>
<td>- 10</td>
</tr>
<tr>
<td>Other (water, public safety; lodging; conservation; religious): 9% of total</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Source: Census Bureau construction spending report
Construction spending: public works (billion $, SAAR)

Highways (99.9% public)
Latest 1-mo. change: -1.0%, 12-mo.: 7%

Sewage/waste (98% public)
Latest 1-mo. change: -1.2%, 12-mo.: 8%

Public transportation facilities
Latest 1-mo. change: 1.2%, 12-mo.: 0%

Water (96% public)
Latest 1-mo. change: 3.9%, 12-mo.: 4%

Source: Census Bureau construction spending reports
Construction spending: institutional (private + state/local)

**Higher education (24% private)**
Latest 1-mo. change: -1.0%, 12-mo.: -5%

**Hospitals (84% private)**
Latest 1-mo. change: 2.1%, 12-mo.: -1%

**PreK-12 ed. (6% private)**
Latest 1-mo. change: 1.0%, 12-mo.: -13%

**Public safety**
Latest 1-mo. change: 0.3%, 12-mo.: -12%

Source: Census Bureau construction spending reports
Construction spending: industrial, heavy (billion $, SAAR)

**Power (83% private)**
Latest 1-mo. change: 0.8%, 12-mo.: 1%

**Manufacturing (98% private)**
Latest 1-mo. change: -2.6%, 12-mo.: -35%

**Communication (99% private)**
Latest 1-mo. change: -3.4%, 12-mo.: -10%

**Amusement & recreation (38% private)**
Latest 1-mo. change: 2.6%, 12-mo.: 11%

Source: Census Bureau construction spending reports
Construction spending: developer-financed (billion $, SAAR)

Nonautomotive retail
Latest 1-mo. change: -1.3%, 12-mo.: -14%

Office (private)
Latest 1-mo. change: -1.7%, 12-mo.: -24%

Warehouses
Latest 1-mo. change: 9.7%, 12-mo.: -37%

Lodging (private)
Latest 1-mo. change: -2.3%, 12-mo.: -51%

Source: Census Bureau construction spending reports
Economic impact of nonresidential construction

- **Jobs:** 28,500 per $1 billion
  - 1/3 direct, onsite construction
  - 1/6 indirect (quarries, mfg., services)
  - 1/2 “induced” by spending from higher earnings of construction, indirect workers and owners
- **GDP:** $3.4 billion
- **Personal earnings:** $1.1 billion

Source: Prof. Stephen Fuller, George Mason University
Construction and total private employment, 2008-Dec. 2010

**Total construction**
Latest 1-mo. change: -0.3%, 12-mo.: -1.6%

**Total private**
Latest 1-mo. change: 0.3%, 12-mo.: 1.3%

**Heavy & civil engineering construction**
Latest 1-mo. change: -1.5%, 12-mo.: 2.3%

**Building + specialty trade contractors**
Nonresidential, Residential

Source: BLS employment reports
State Construction Employment Change (U.S.: -2%)
11/09 to 11/10 (seasonally adjusted)

Source: BLS state and regional employment report
Construction employment, wages, costs and output prices

Unemployment rates, Dec. 2008-Dec. 2010
not seasonally adjusted, ■ construction □ total

<table>
<thead>
<tr>
<th></th>
<th>Dec. '08</th>
<th>Dec. '09</th>
<th>Dec. '10</th>
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<tbody>
<tr>
<td>Unempl</td>
<td>15.3%</td>
<td>22.7%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Constr</td>
<td>7.1%</td>
<td>9.7%</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

Producer price index for construction inputs
12-mo. % change, 2008-Nov. 2010 (11/09-11/10: 4.6%)

Employment cost index for construction
4-quarter % change, 2008-3Q 2010 (3Q09-3Q10: 1.2%)

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tbody>
<tr>
<td>Change</td>
<td>6%</td>
<td>4%</td>
<td>6%</td>
</tr>
</tbody>
</table>

PPI for construction inputs, finished buildings
12-mo. % change, November 2009-November 2010

Source: BLS employment, employment cost index, producer price index (PPI)
No. 2 diesel fuel
Latest 1-mo. change: 4.8%, 12-mo.: 18.5%

Steel mill products
Latest 1-mo. change: -1.7%, 12-mo.: 12.1%

Copper & brass mill shapes
Latest 1-mo. change: 5.6%, 12-mo.: 16.4%

Aluminum mill shapes
Latest 1-mo. change: 3.5%, 12-mo.: 14.3%

Source: BLS producer price index reports
Producible price indexes, 1/08-11/10

Asphalt paving mixtures & blocks
Latest 1-mo. change: -0.3%, 12-mo.: 4.6%

Concrete products
Latest 1-mo. change: 0.0%, 12-mo.: -0.3%

Gypsum products
Latest 1-mo. change: -0.2%, 12-mo.: 0.8%

Lumber and plywood
Latest 1-mo. change: 0.1%, 12-mo.: 5.8%

Source: BLS producer price index reports
Outlook for materials

• Industry depends on specific materials that:
  • are in demand worldwide
  • have erratic supply growth
  • are heavy, bulky or hard to transport

• Construction requires physical delivery

• Thus, industry is subject to price spurts, transport bottlenecks, fuel price swings

• Expect periods of 6 to 8% PPI increases

Source: Author
Predictors of construction demand

**Architecture Billings Indexes**
(50=balance bet. higher and lower billings)

- Overall ABI
- Commer./ Industrial
- Institutional
- Mixed-practice

**Architecture & engineering services empl.**
1-mo. % change, not seasonally adjusted

- Architectural services
- Eng & drafting services

Source: American Institute of Architects (billings), BLS (employment)
Single- vs. multi-family, 2008-10, seasonally adjusted annual rate (SAAR)

Single-family & improvements spending
- Single-family
- Improvements

Multi-family spending
- Latest 1-mo. change: 3.0%, 12-mo.: -30%

Single-family permits & starts
- Permits
- Starts

Multi-family permits & starts
- Permits
- Starts

Source: Census Bureau construction spending, housing starts reports
Housing outlook

- **SF:** starts, permits should rise gradually in ’11
- **MF:** Upturn has begun, should accelerate in ’11
  - Rental demand should rise as more people get jobs or move to military base realignment sites
  - Condo market continues to have large overhang
  - Banks remain unwilling to lend to developers

Source: Author
Population change by state, 2000-10 (U.S. total: 9.7%)

Source: U.S. Census Bureau
Summary for 2011

• Nonres spending: 0 to +5% (less stimulus; weak state-local; more retail, hotel, higher ed, hospitals)
• Res: +5 to +10% (SF up a bit, MF accelerating)
• Total construction spending: +3 to +7%
• Materials costs: +3% to +8%
• Labor costs: +2.5% or less

Source: Author
AGC economic resources (email simonsonk@agc.org)

- **The Data DIGest**: weekly 1-page email (sign up: www.agc.org/datadigest)
- PPI tables: emailed monthly
- State and metro data, fact sheets
- Stimulus info: www.agc.org/stimulus
- Webinars (next: 3/2 with AIA, Reed)
- Feedback on stimulus, credit, costs