Construction Spending, Labor & Materials Outlook

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Construction spending & employment, 2006-16

Source: U.S. Census Bureau (spending); Bureau of Labor Statistics (employment)
### Nonresidential segments: 2014-15 change, 2016-17 forecast

<table>
<thead>
<tr>
<th>Nonresidential total (public+private)</th>
<th>2015 vs. 2014</th>
<th>Jan.-July ’16 vs. ’15</th>
<th>2016 forecast</th>
<th>2017 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (incl. oil &amp; gas field structures, pipelines)</td>
<td>-16</td>
<td>6</td>
<td>5-10</td>
<td>5-10</td>
</tr>
<tr>
<td>Highway and street</td>
<td>6</td>
<td>2</td>
<td>2-5</td>
<td>2-5</td>
</tr>
<tr>
<td>Educational</td>
<td>5</td>
<td>5</td>
<td>3-6</td>
<td>2-5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>33</td>
<td>-3</td>
<td>-8 to -4</td>
<td>&lt;0</td>
</tr>
<tr>
<td>Commercial (retail, warehouse, farm)</td>
<td>6</td>
<td>11</td>
<td>7-12</td>
<td>0-5</td>
</tr>
<tr>
<td>Office</td>
<td>18</td>
<td>22</td>
<td>17-22</td>
<td>5-10</td>
</tr>
<tr>
<td>Transportation</td>
<td>8</td>
<td>-2</td>
<td>-3 to 3</td>
<td>0-5</td>
</tr>
<tr>
<td>Health care</td>
<td>5</td>
<td>2</td>
<td>1-5</td>
<td>3-8</td>
</tr>
<tr>
<td>Sewage and waste disposal</td>
<td>5</td>
<td>-5</td>
<td>-5 to 0</td>
<td></td>
</tr>
<tr>
<td>Lodging</td>
<td>30</td>
<td>26</td>
<td>15-30</td>
<td>&lt;0</td>
</tr>
<tr>
<td>Other--amusement; communication; religious; public safety; conservation; water: 11% of total</td>
<td>9</td>
<td>0</td>
<td>-2 to 4</td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau construction spending report; Author’s forecast
Construction spending: industrial, heavy
annual total, 2008-13; monthly, SAAR, 1/14-7/16; billion $

- **Power (92% private)**
  - Jul. '15-Jul. '16 change: 1% (oil & gas -12%; electric 5%)
  - [Graph showing Power spending for '08 to '16]

- **Manufacturing (99% private)**
  - Jul. '15-Jul. '16 change: -5% (chemical -1%; other -9%)
  - [Graph showing Manufacturing spending for '08 to '16]

- **Amusement & recreation (53% private)**
  - Jul. '15-Jul. '16 change: 5% (private 15%; public -5%)
  - [Graph showing Amusement & recreation spending for '08 to '16]

- **Communication (99.3% private)**
  - Jul. '15-Jul. '16 change: -9%
  - [Graph showing Communication spending for '08 to '16]

Source: U.S. Census Bureau construction spending report
Key points: power, mfg., recreation

- Solar, wind power are growing again; expect more gas-fired plants, natural gas pipelines into ‘18
- Mfg decline led by completion/delay of chemical plants (ethane crackers, petrochemicals, LNG) and transportation equipment (cars, trucks, jets, railcars)
- Amusement & recreation spending is very “lumpy”—a few big stadiums at irregular intervals; but funding for local, state, federal parks keeps eroding

Source: Author
Construction spending: public works
annual total, 2008-13; monthly, SAAR, 1/14-7/16; billion $

Highways (99.8% public)
Jul. '15-Jul. '16 change: -2%

Sewage/waste (98% public)
Jul. '15-Jul. '16 change: -13%

Transportation facilities (71% public)
Jul. '15-Jul. '16 change: -3% (private -4%; public -3%)

Water supply (98% public)
Jul. '15-Jul. '16 change: -10%

Source: U.S. Census Bureau construction spending report
Key points: roads, transportation, sewer/water

• Highway funds benefit from more travel, hence fuel purchases; gradual pick-up in state funding & P3s
• Railroads slashing investment; little net change for public airport, port, transit construction
• Eastern & Midwestern cities under orders to make long-term upgrades to sewer systems that should boost spending; water utilities hurt by drought, conservation but may get money for lead abatement

Source: Author
Construction spending: institutional (private + state/local)
annual total, 2008-13; monthly, SAAR, 1/14-7/16; billion $

Education (state & local K-12, higher; private)

- Jul. '15-Jul. '16 change: -5% (state/local preK-12 -2%, higher -14%; private 5%)

Health care (private, state & local)

- Jul. '15-Jul. '16 change: -0.8% (private 11%; state & local -5%)

Source: U.S. Census Bureau construction spending report
Key points: education & health care

• PreK-12 enrollment is flat; more children staying in cities and filling underused or charter schools, so construction no longer matches population growth

• Higher-ed enrollment is shrinking, so colleges need fewer dorms & classrooms; apts. (multifamily) replacing dorms (educational construction)

• Hospitals face more competition from standalone urgent care, outpatient surgery, clinics in stores; more investment in small facilities, short stays

Source: Author
Construction spending: developer-financed
annual total, 2008-13; monthly, SAAR, 1/14-7/16; billion $

Retail (private)
Jul. '15-Jul. '16 change: 10%

Office (89% private)
Jul. '15-Jul. '16 change: 25% (private 30%; public -6%)

Warehouse (private)
Jul. '15-Jul. '16 change: 34%

Lodging (private)
Jul. '15-Jul. '16 change: 28%

Source: U.S. Census Bureau construction spending report
Key points: retail, warehouse, office, hotel

- Retail now tied to mixed-use buildings & renovations, not standalone stores or shopping centers; consumer pivot to online buying will continue
- Warehouse market still benefiting from e-commerce; may heat up if Panama Canal leads to distribution shifts
- Employment sets records each month but office space per employee keeps shrinking; growth mainly in cities & renovations, not suburban office parks
- Hotel construction likely to drop as revenue per available room slows

Source: Author
Major locations for data centers

Source: www.DataCenterKnowledge.com, from CBRE, ASHRAE
Private residential spending: MF continues to outpace SF

Seasonally adjusted annual rate (SAAR): Jan. 2011 ($238 B)-July 2016 ($445 B)

- Multifamily (MF) (June '16: $60 B)
- Single-family (SF) (June '16: $238 B)
- Improvements (June '16: $148 B)

12-month % change: January 2011 (-5.3%)-July 2016 (1.9%)

- Multifamily: 20%
- Single-family: 2%
- Total: 2%
- Improvements: -4%

Source: U.S. Census Bureau construction spending reports
2016 residential spending forecast: 4-11%; 2017: 5-10%

• SF: 6-11%; ongoing job gains add to demand; student debt, fears of lock-in, limited supply will cap growth

• MF: 10-15%; growth is slowing but should last through 2017
  – low vacancies, high rent growth encourage investors
  – millennials show continued preference for cities
  – nearly all MF construction is rental, not condo

• Improvements: 0-10%; Census data is not reliable and shows only a loose relationship to SF spending

• 2017: SF 6-11% again; MF slows to 5-10%; improvements 0-10% again

Source: Author
Population change by state, July 2014-July 2015 (U.S.: 0.79%)

Source: U.S. Census Bureau
State construction employment change (U.S.: 3.1%)
7/15 to 7/16: 39 states up, DC unchanged, 11 down

Source: BLS state and regional employment report
Metro construction employment change
7/15 to 7/16: 239 metros up, 59 unchanged, 60 down

Source: BLS state and regional employment report
### Hardest positions to fill

<table>
<thead>
<tr>
<th>Position</th>
<th>% of respondents who are having trouble filling</th>
</tr>
</thead>
<tbody>
<tr>
<td>All hourly craft positions</td>
<td>69%</td>
</tr>
<tr>
<td>Carpenters</td>
<td>60%</td>
</tr>
<tr>
<td>Electricians</td>
<td>53%</td>
</tr>
<tr>
<td>Plumbers, roofers</td>
<td>50%</td>
</tr>
<tr>
<td>Concrete workers</td>
<td>49%</td>
</tr>
<tr>
<td>All salaried field positions</td>
<td>38%</td>
</tr>
<tr>
<td>Project mgrs/supervisors</td>
<td>50%</td>
</tr>
<tr>
<td>Estimators</td>
<td>31%</td>
</tr>
<tr>
<td>Engineers</td>
<td>28%</td>
</tr>
</tbody>
</table>

Source: AGC Member Survey, Sept. 2015
How contractors are coping with worker shortages

- Raising base pay: 43% (Hourly), 48% (Salaried)
- Providing incentives/bonuses: 20% (Hourly), 27% (Salaried)
- Increasing contributions/benefits: 22% (Hourly), 21% (Salaried)
- In-house training: 48%
- Overtime hours: 47%
- Subcontractors: 39%
- Engage w/ career-building prog.: 37%
- Staffing company: 24%
- Labor-saving equip., tools, mach.: 21%
- Unions: 18%
- Lean construction: 15%
- Offsite prefabrication: 13%
- Building information modeling (BIM): 7%

Source: AGC Member Survey, Sept. 2015
Construction workforce indicators (not seasonally adjusted)

Source: Bureau of Labor Statistics
Producer price indexes for key inputs, 1/11-7/16 (Jan. 2011=100)

- **Gypsum products**
  - Latest 1-mo. change: 0.1%, 12-mo.: 2%

- **Copper & brass mill shapes**
  - Latest 1-mo. change: 4.2%, 12-mo.: -8%

- **Flat glass**
  - Latest 1-mo. change: 0.1%, 12-mo.: 5%

- **Aluminum mill shapes**
  - Latest 1-mo. change: 0.2%, 12-mo.: -2%

Source: Author, based on BLS producer price index reports
Producer price indexes for key inputs, 1/11-6/16 (Jan. 2011=100)

**Diesel fuel**
Latest 1-mo. change: 3%, 12-mo.: -19%

**Concrete products**
Latest 1-mo. change: 0.5%, 12-mo.: 4%

**Paving mixtures**
Latest 1-mo. change: 0.1%, 12-mo.: -7%

**Steel mill products**
Latest 1-mo. change: 3%, 12-mo.: -1%

Source: Author, based on BLS producer price index reports
# 2015 summary, 2016-17 forecast

<table>
<thead>
<tr>
<th></th>
<th>2015 actual</th>
<th>2016 yr-to-date</th>
<th>forecast 2016</th>
<th>forecast 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total spending</td>
<td>11%</td>
<td>6%</td>
<td>3-9%</td>
<td>2-7%</td>
</tr>
<tr>
<td>Private – residential</td>
<td>17%</td>
<td>7%</td>
<td>4-11%</td>
<td>5-10%</td>
</tr>
<tr>
<td>– nonresidential</td>
<td>8%</td>
<td>9%</td>
<td>4-10%</td>
<td>2-7%</td>
</tr>
<tr>
<td>Public</td>
<td>5%</td>
<td>0%</td>
<td>0-3%</td>
<td>1-5%</td>
</tr>
<tr>
<td>Goods &amp; serv. inputs PPI</td>
<td>-2%</td>
<td>-1%</td>
<td>0-2%</td>
<td>0-2%</td>
</tr>
<tr>
<td>Employment cost index</td>
<td>2.2%</td>
<td>2.5%</td>
<td>2.5-3.5%</td>
<td>3-4%</td>
</tr>
</tbody>
</table>

Source: actuals: Census, BLS; forecasts: Author’s estimates
AGC economic resources
(email simonsonk@agc.org)

- **The Data DIGest**: weekly 1-page email (subscribe at [http://store.agc.org](http://store.agc.org))
- monthly press releases: spending; PPI; national, state, metro employment
- state and metro data, fact sheets: [www.agc.org/learn/construction-data](http://www.agc.org/learn/construction-data)
- WebEd 11/17 with Kermit Baker (AIA), Alex Carrick (ConstructConnect)