US Construction Spending, Labor and Materials Outlook

American Wire Producers Association
Atlanta, May 10, 2017
Ken Simonson
Chief Economist, AGC of America
Construction spending & employment, 2006-2017

**Total spending, Feb. ‘06 (peak)-Mar. ‘17**

- Total: $1.21 trillion
- Private: $0.75 trillion
- Residential: $0.53 trillion (17% below peak)
- Private nonresidential: $0.22 trillion (6% below peak)
- Public: $0.47 trillion

**March 2016-March 2017:** total 4%
- Private res. 7%
- Private nonres. 6%
- Public -6%

**Total employment, Apr. ‘06 (peak)-Mar. ‘17**

- Total: 7.7 million
- Private: 5.7 million
- Residential: 4.0 million (17% below peak)
- Nonresidential: 1.7 million (6% below peak)

**March 2016-March 2017:** total 2.5%
- Residential 4.3%
- Nonresidential 1.4%

Source: Spending--U.S. Census Bureau; Employment--Bureau of Labor Statistics
7 areas of policy uncertainties affecting construction

• **Infrastructure**: How much? How soon? What types? Funding source?
• **Immigration**: Impact on new & current workers? Wall construction?
• **Trade**: Higher materials costs? Shortages? Less or more factory const.?
• **Regulatory relief**: Which ones? How soon?
• **Health care rewrite**: Timing? Impact on demand for hospital const.?
• **Fiscal**: Lower taxes? For whom? Bigger deficits? Implications for construction demand, labor supply?
• **Monetary**: Higher interest rates? Impact on housing, state/local bonds? 

Source: Author
## Nonresidential segments: 2015-16 change, 2017 forecast

<table>
<thead>
<tr>
<th>Nonresidential total (public+private)</th>
<th>2016 vs. 2015</th>
<th>Jan.-Mar. ’17 vs. ’16</th>
<th>2017 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (incl. oil &amp; gas field structures, pipelines)</td>
<td>4%</td>
<td>5%</td>
<td>5-10%</td>
</tr>
<tr>
<td>Highway and street</td>
<td>1%</td>
<td>-5%</td>
<td>2-5%</td>
</tr>
<tr>
<td>Educational</td>
<td>6%</td>
<td>5%</td>
<td>3-7%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-4%</td>
<td>-10%</td>
<td>&lt;0%</td>
</tr>
<tr>
<td>Commercial (retail, warehouse, farm)</td>
<td>11%</td>
<td>14%</td>
<td>0-5%</td>
</tr>
<tr>
<td>Office</td>
<td>25%</td>
<td>21%</td>
<td>8-13%</td>
</tr>
<tr>
<td>Transportation</td>
<td>-6%</td>
<td>-9%</td>
<td>0-5%</td>
</tr>
<tr>
<td>Health care</td>
<td>2%</td>
<td>1%</td>
<td>0-5%</td>
</tr>
<tr>
<td>Lodging</td>
<td>25%</td>
<td>13%</td>
<td>~0%</td>
</tr>
<tr>
<td>Sewage &amp; waste disposal</td>
<td>-9%</td>
<td>-24%</td>
<td></td>
</tr>
<tr>
<td>Other--amusement; communication; religious; public safety; conservation; water: 10% of total</td>
<td>-1%</td>
<td>-1%</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, 1/14-3/17; billion $

Power (94% private)

Electric
Oil & Gas

Mar. '16-Mar. '17 change: 5% (oil & gas -10%; electric 9%)

Manufacturing (99% private)

Other
Chemical

Mar. '16-Mar. '17 change: -10% (chemical 4%; other -21%)

Amusement & recreation (54% private)

Public
Private

Mar. '16-Mar. '17 change: 9% (private 12%; public 6%)

Communication (99.5% private)

Mar. '16-Mar. '17 change: 18%

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

- Solar, wind power are growing again; expect more gas-fired plants, natural gas pipelines into ‘18
- Mfg decline led by completion or delay of chemical plants (fertilizer, ethane crackers, petrochemicals, LNG) and transportation equipment (cars, trucks, jets, railcars); recovery in ‘18 depends on policy impacts, especially trade and tax
- 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, 1/14-3/17; billion $

Highways (99.6% public in 2016)
Mar. '16-Mar. '17 change: -2%

Sewage/waste (99% public)
Mar. '16-Mar. '17 change: -22%

Transportation facilities (71% public)
Mar. '16-Mar. '17 change: -12% (private -9%; public -14%)

Water supply (99% public)
Mar. '16-Mar. '17 change: -14%

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; higher federal funding unlikely before ‘18
- Railroads slashing investment; pickup in airport projects but no increase likely in port, transit construction funding
- Eastern & Midwestern cities under orders to make long-term upgrades to sewer systems that should keep a floor on spending; water utilities hurt by drought, conservation but may get money for lead abatement

Source: Author
Construction spending: education, health care
annual total, 2008-13; monthly, SAAR, 1/14-3/17; billion $

**Education**: state/local K-12, S/L higher; private

- Mar. '16-Mar. '17 change: 1% (state/local preK-12 3%; state/local higher ed -10%; private 15%)

**Health care**: (private hospital, S/L hospital, other)

- Mar. '16-Mar. '17 change: -1% (private hospital 3%; S/L hospital -21%; other: special care, med. office, federal -7%)

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

• Bond issues passed in 2014-16 should boost preK-12 projects in 2017 and 2018

• Higher-ed enrollment declined 21% from 2011 to 2016, so colleges need fewer dorms & classrooms; apts. (multifamily) replacing dorms (educational construction)

• Hospitals face uncertainty about utilization and reimbursement rates if Affordable Care Act is repealed/modified/replaced; also, more competition from standalone urgent care, outpatient surgery, clinics in stores

Source: Author
Construction spending: developer-financed
annual total, 2008-13; monthly, SAAR, 1/14-3/17; billion $

Retail (private)
Mar. '16-Mar. '17 change: 5%

Office (90% private in 2016)
Mar. '16-Mar. '17 change: 16% (private 18%; public 1%)

Warehouse (private)
Mar. '16-Mar. '17 change: 36%

Lodging (private)
Mar. '16-Mar. '17 change: 9%

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

- Retail now tied to mixed-use buildings & renovations, not standalone stores or shopping centers
- Warehouse market still benefiting from e-commerce; more local than huge regional distribution centers likely in future
- Record employment each month but office space per employee keeps shrinking; more urban & renovation work than suburban office parks
- Hotel construction likely to drop as revenue per available room slows
- Data centers remain a strong niche but no data available on how strong

Source: Author
Population change by state, July 2015-July 2016 (U.S.: 0.70%)
State construction employment change (U.S.: 4%)
3/16 to 3/17: 39 states up, 10 + DC down

Source: BLS state and regional employment report
Metro construction employment change

3/16 to 3/17: 224 metros up (62%), 42 unchanged, 92 down (27%)
Hardest positions to fill

% of respondents who are having trouble filling

<table>
<thead>
<tr>
<th>Position</th>
<th>% of Respondents</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>Salaried field/office positions</td>
<td>38%/33%</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, August 2016
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%
Construction workforce indicators (not seasonally adjusted)

Construction hires, Jan. 2001-Jan. 2017

Job openings, Jan. 2001-Jan. 2017

Unemployment, Jan. 2001-Jan. 2017

Avg. hourly earnings, 12-month % change, Feb. 2001-Feb. 2017

Source: Bureau of Labor Statistics
Producer price indexes for key inputs, 1/11-3/17 (Jan. 2011=100)

- **Diesel fuel**
  - Latest 1-mo. change: -1.0%, 12-mo.: 35%

- **Steel pipe and tube**
  - Latest 1-mo. change: 6.6%, 12-mo.: 15%

- **Copper & brass mill shapes**
  - Latest 1-mo. change: -3.1%, 12-mo.: 17%

- **Aluminum mill shapes**
  - Latest 1-mo. change: 1.5%, 12-mo.: 9%
Producer price indexes for key inputs, 1/11-3/17 (Jan. 2011=100)

Gypsum products
Latest 1-mo. change: -0.8%, 12-mo.: 8%

Paving mixtures
Latest 1-mo. change: -2.1%, 12-mo.: -2%

Flat glass
Latest 1-mo. change: 0.1%, 12-mo.: 2%

Concrete pipe
Latest 1-mo. change: -0.4%, 12-mo.: 2%

Source: Bureau of Labor Statistics
## 2016 summary, 2017 forecast

<table>
<thead>
<tr>
<th></th>
<th>2016 actual</th>
<th>Jan-Mar '17 vs. ‘16</th>
<th>2017 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total spending</td>
<td>5%</td>
<td>3%</td>
<td>2-7%</td>
</tr>
<tr>
<td>Private – residential</td>
<td>6%</td>
<td>6%</td>
<td>6-10%</td>
</tr>
<tr>
<td>– nonresidential</td>
<td>8%</td>
<td>7%</td>
<td>2-7%</td>
</tr>
<tr>
<td>Public</td>
<td>-1%</td>
<td>-8%</td>
<td>0-3%</td>
</tr>
<tr>
<td>Goods &amp; services inputs PPI</td>
<td>-1%</td>
<td>3%</td>
<td>2-4%</td>
</tr>
<tr>
<td>Employment cost index</td>
<td>1.9%</td>
<td>2.4%</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
• yearly employment & outlook surveys, state and metro data, fact sheets: [www.agc.org/learn/construction-data](http://www.agc.org/learn/construction-data)