Headline Forecast

• The US economy is strong and growing:
  - 3.5% third-quarter real GDP growth, rising employment and pay
  - consumer, business confidence are generally high; recession probability is low
  - but home & auto sales are slowing; trade & fiscal policy concerns remain

• Contractors remain busy and confident; construction employment at 10-year high
  but several spending categories have slipped or stalled in past few months

• Three concerns:
  - impact of trade policies on materials costs and demand for construction
  - widening labor shortage, worsened by hostile immigration policy
  - rising interest rates may cut demand for income-producing projects, new homes

Source: Author
Construction spending & employment, 2006–2018

**Spending put in place, Feb. ’06 (prior peak)–Oct. ’18**

- **10/18 Total:** $1.31 trillion
  - 9% above ’06 peak

- **10/17–10/18 % change:**
  - Total: 4.9%

**Employment, April ’06 (peak)–Oct. ’18**

- **10/18 Total:** 7.3 million
  - 5% below peak

**% change:**
- **Nonres:** 4.4%
- **Res:** 5.3%
- **Nonresidential:** 0.3% above ’18 peak
- **Residential:** 17% below ’06 peak

**Source:** spending—U.S. Census Bureau; employment—Bureau of Labor Statistics
## Nonresidential spending by segment: 2017-2018 change and 2019 forecast

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Power (incl. oil &amp; gas field structures, pipelines)</td>
<td>-0.5%</td>
<td>5.2%</td>
<td>2-5%</td>
</tr>
<tr>
<td>Educational</td>
<td>1</td>
<td>3</td>
<td>0-5%</td>
</tr>
<tr>
<td>Highway and street</td>
<td>-4</td>
<td>6</td>
<td>3-8%</td>
</tr>
<tr>
<td>Commercial (retail, warehouse, farm)</td>
<td>12</td>
<td>4</td>
<td>0-5%</td>
</tr>
<tr>
<td>Office</td>
<td>-1</td>
<td>9</td>
<td>0-5%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-13</td>
<td>-3</td>
<td>near 0</td>
</tr>
<tr>
<td>Transportation</td>
<td>4</td>
<td>17</td>
<td>5-10%</td>
</tr>
<tr>
<td>Health care</td>
<td>4</td>
<td>1</td>
<td>near 0</td>
</tr>
<tr>
<td>Lodging</td>
<td>6</td>
<td>12</td>
<td>near 0</td>
</tr>
<tr>
<td>Sewage &amp; waste disposal</td>
<td>-12</td>
<td>9</td>
<td></td>
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<tr>
<td>Other--amusement; communication; religious; public safety; conservation; water: 11% of ‘17 total</td>
<td>3</td>
<td>6</td>
<td></td>
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Source: U.S. Census Bureau construction spending report; Author’s forecast
Construction spending: industrial, heavy
annual total, 2008–16; monthly (seasonally adjusted annual rate), 1/17–10/18; billion $

**Power** (94% private in 2017)
- Oct. ’17–Oct. ’18: 9% (oil & gas 17%; electric 7%)

**Manufacturing** (99% private in 2017)
- Oct. ’17–Oct. ’18: 3% (chemical 1%; other 4%)

**Amusement & recreation** (55% private in 2017)
- Oct. ’17–Oct. ’18: 16% (private 8%; public 28%)

**Communication** (99.5% private in 2017)
- Oct. ’17–Oct. ’18: -5%

Source: U.S. Census Bureau construction spending report
Key points: power & energy, mfg, amusement, communication

• Solar, wind power are growing again; expect more gas-fired plants, natural gas pipelines in ‘19

• Manufacturing construction should recover further in ‘19 based on energy projects, U.S. economic growth; but tariffs, foreign retaliation, rising construction costs are major concerns

• Amusement & recreation spending is very “lumpy”—a few big stadiums at irregular intervals; but funding for local, state, federal parks keeps eroding

• Communication may revive as wireless firms build out 5G networks

Source: Author
Construction spending: public works
annual total, 2008–16; monthly (seasonally adjusted annual rate), 1/17–10/18; billion $

Highways (99.8% public in 2017)

Transportation facilities (air, transit, rail, water)

Sewage/waste & water (sewage 99% public in 2017; water 98% public in 2017)

Conservation and development (99.7% public in 2017)

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

• State highway funding and P3s gradually increasing; no federal infrastructure bill likely in 2019

• Many new and ongoing public & private airport projects; revival of freight rail construction; but no net increase likely in public funding for port, passenger rail or transit construction

• Water & sewer/wastewater spending returning to 2011-15 levels after large drop in 2016-17; little long-term new funding likely

• Conservation will grow if Corps of Engineers can award enough $
Construction spending: education, health care
annual total, 2008–16; monthly (seasonally adjusted annual rate), 1/17–10/18; billion $

Education: (state/local K-12, S/L higher; private)
- $100
- $75
- $50
- $25
- $0

- Oct. ‘17–Oct. ’18: 9% (state/local preK-12 12%; state/local higher ed 4%; private 8%)

Health care: (private hospital, S/L hospital, other)
- $50
- $40
- $30
- $20
- $10
- $0

- Oct. ‘17–Oct. ’18: -1% [private hospital 4%; S/L hospital 2%; other (special care, medical office, federal) -8%]

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

• Rising house & commercial property values are supporting school district tax receipts & bond issues for preK-12 projects

• Higher-ed enrollment declined 21% from 2011 to 2016; likely decrease in full-tuition foreign students will hurt budgets; apts. (multifamily) replacing dorms (educational construction)

• Rising stock prices help private school & college capital campaigns

• Despite recent rebound in hospital spending, health care spending is shifting to special-care facilities (urgent care, surgery, rehab, hospices)

Source: Author
Construction spending: developer-financed
annual total, 2008–16; monthly (seasonally adjusted annual rate), 1/17–10/18; billion $

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 structures; ongoing store closings imply downturn continuing in ‘19

• Warehouse growth is still benefiting from e-commerce; more local than huge regional distribution centers likely in future; self-storage is booming

• Office growth is slowing; employment still rising but space per worker is shrinking; more urban & renovation work than suburban office parks

• Hotel pipeline is still growing but sector is very interest-rate sensitive

• Data centers remain a strong niche but no data available on how strong

Source: Author
Private residential spending: slower single-family growth, pickup in multifamily annual total, 2006–16; monthly (seasonally adjusted annual rate), 1/17–10/18; billion $

Spending put in place (billion $)

Private residential total
(18% below Feb ’06 peak)

Single-family
(40% below Feb ’06 peak)

Improvements
(10% below Apr ’18 peak)

Multifamily
(1% below Mar ’16 peak)

12-month % change

10/17–10/18:

Multifamily: 3%
Single-family: 2%
Private total: 2%
Improvements: 0.4%

Source: U.S. Census Bureau construction spending report
Residential spending forecast--2018: 5-6% growth; 2019: 5-9% (12% in 2017)

• **SF**--2018: 6-7% growth; 2019: 6-10% (11% in 2017); rising interest rates, building costs, student debt will limit number of potential buyers

• **MF**--2018: near 0; 2019: 2-5% (-2% in 2017)
  – occupancy rates, rents have leveled off; but permits are rising, implying rebound in 2019
  – millennials are staying longer in cities and denser suburbs where MF construction is bigger share of market than in outer suburbs
  – nearly all MF construction is rental, not condo; more high-rises

• Improvements--2018: 6-8% growth; 2018: 5-10% (19% in 2017); rising number of seniors prefer remodeling to moving but interest cost, labor scarcity are barriers
Population change by state, July 2016–July 2017 (U.S.: 0.72%)

Source: U.S. Census Bureau
State construction employment change (U.S.: 4.7%)
10/17 to 10/18: 44 states and DC up, 6 down

**Top 5**
- AZ: 12.1%
- GA: 11.6%
- NV: 11.4%
- OR: 10.5%
- NH: 10.3%

**Bottom 5**
- OK: -0.6%
- MS: -0.7%
- HI: -0.8%
- SC: -1.7%
- NJ: -2.5%

Source: BLS state and regional employment report
Metro construction employment change (U.S.: 4.7%)
10/17 to 10/18: 281 (78%) of 358 metros up, 34 unchanged, 43 (12%) down

Source: BLS state and regional employment report
Construction workforce indicators (not seasonally adjusted)

Source: Bureau of Labor Statistics
AGC Workforce Survey: hardest positions to fill

% of firms that employ a position and report difficulty filling:

All hourly craft: 80% of firms report difficulty

- Pipelayers: 72%
- Sheet metal workers: 68%
- Carpenters: 67%
- Concrete workers: 67%
- Pipefitters/Welders: 66%

All salaried: 56% of firms report difficulty

- Project mgrs /supervisors: 49%
- Engineers: 38%
- Estimating personnel: 36%
- Quality control personnel: 31%
- BIM personnel: 25%

Source: AGC Workforce Survey, Aug. 2018
How firms are coping with craftworker shortages

- Increased base pay: 62%
- Engaged with career-building program: 48%
- Initiated/increased in-house training: 33%
- Interns: 33%
- Craft labor supply firm: 32%

Source: AGC Workforce Survey, Aug. 2018
Impact on project costs and completion times

New bids have higher prices to perform construction 47%
Longer completion times than contractor expected 45%
Higher cost than contractor expected 44%
New bids contain longer completion times 27%
Lower costs or completion times than expected 3%
No impact 16%

Source: AGC Workforce Survey, Aug. 2018
12-month change in producer price index for key inputs

- Diesel fuel: 27% (October 2017–October 2018), 34% (October 2016–October 2017)
- Steel mill products: 18% (October 2017–October 2018), 9% (October 2016–October 2017)
- Aluminum mill shapes: 8% (October 2017–October 2018), 14% (October 2016–October 2017)
- Copper & brass mill shapes: -6% (October 2017–October 2018), 25% (October 2016–October 2017)
- Paving mixtures: 12% (October 2017–October 2018), 0% (October 2016–October 2017)
- Gypsum products: 5% (October 2017–October 2018), 9% (October 2016–October 2017)
- Ready-mixed concrete: 3% (October 2017–October 2018), 3% (October 2016–October 2017)
- Lumber & plywood: -2% (October 2017–October 2018), 10% (October 2016–October 2017)

Source: Bureau of Labor Statistics
Materials costs are rising faster than bid prices

**12-month % change, not seasonally adjusted: Jan. 2016 – October 2018**

- Average hourly earnings for all construction employees
- PPI for inputs to construction
- PPI for nonresidential building

Source: Bureau of Labor Statistics
### 2017-2018 summary and 2019 forecast

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<thead>
<tr>
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<tbody>
<tr>
<td>Total spending</td>
<td>4%</td>
<td>5.1%</td>
<td>5-8%</td>
</tr>
<tr>
<td>Private – residential</td>
<td>12%</td>
<td>5%</td>
<td>5-9%</td>
</tr>
<tr>
<td>– nonresidential</td>
<td>1%</td>
<td>4%</td>
<td>3-6%</td>
</tr>
<tr>
<td>Public</td>
<td>-3%</td>
<td>7%</td>
<td>2-5%</td>
</tr>
<tr>
<td>Goods &amp; services inputs PPI</td>
<td>4.4%</td>
<td>6.6%*</td>
<td>4-6%</td>
</tr>
<tr>
<td>Wages &amp; salaries (avg. hourly earnings)</td>
<td>3.1%</td>
<td>3.9%*</td>
<td>3.5-4.5%</td>
</tr>
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*10/17 to 10/18
AGC economic resources
(email simonsonk@agc.org)

• *The Data DIgest*: weekly 1-page email (subscribe at http://store.agc.org)

• monthly press releases: spending; producer price indexes; national, state, metro employment with rankings

• yearly employment & outlook surveys, state and metro data, fact sheets: www.agc.org/learn/construction-data