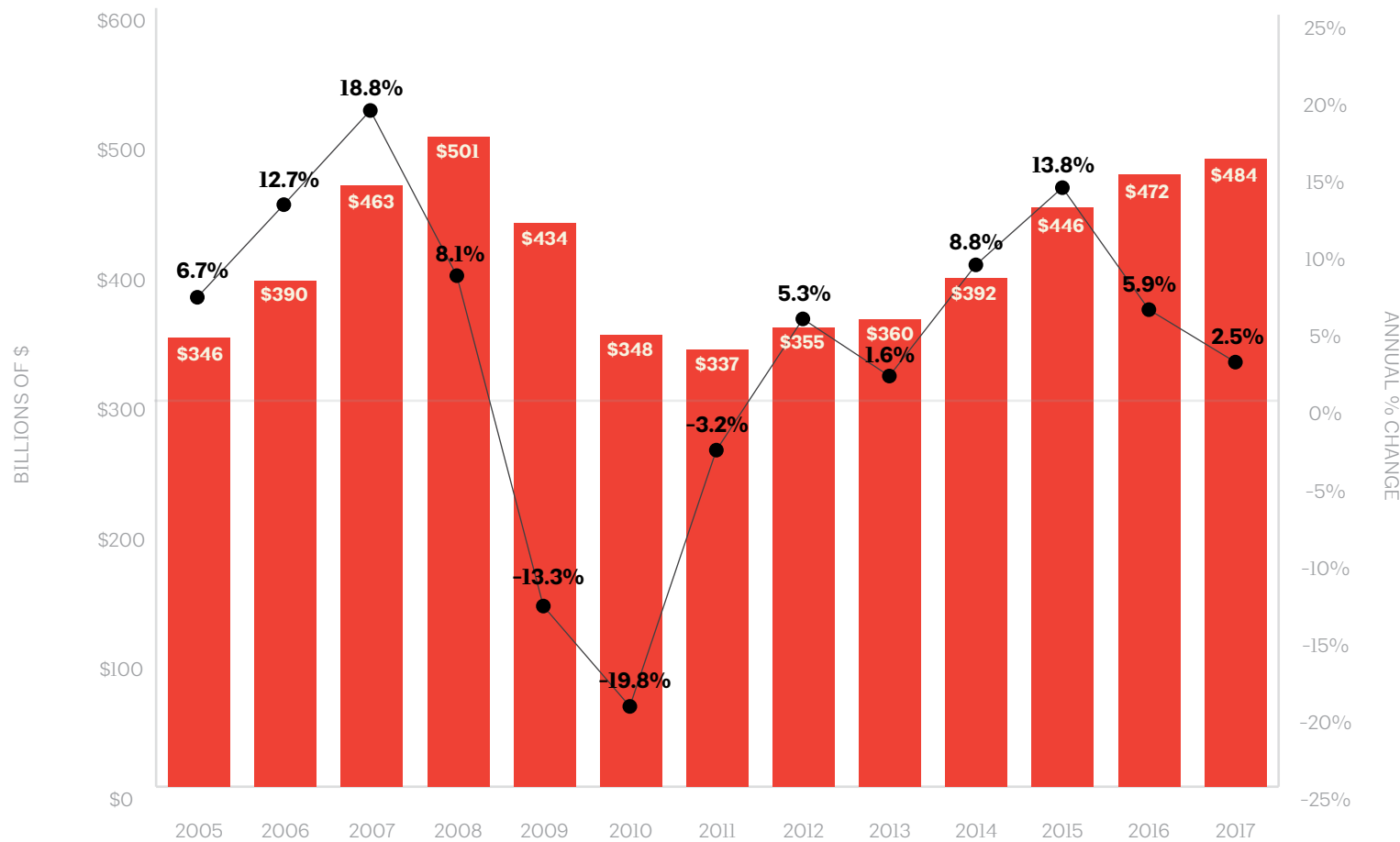


Overview

- ① **As the construction expansion continues, US architecture firms are generating record levels of revenue. Growth prospects remain positive, although concerns are mounting.**
- ② **With strong market conditions, firms are getting larger, diversity is expanding, and investment in labor saving technology is increasing.**
- ③ **As the building stock ages, a large share of design activity is devoted to improving existing facilities.**

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FIGURE 01: Nonresidential building cycle continues, but growth has eased in recent years
National spending on nonresidential building, billions of \$, and annual % change



Source: US Census Bureau

This past July 2018, the US economy celebrated its ninth consecutive year of growth. That makes the current economic recovery and expansion the second longest of the post-World War II era. If the expansion continues through June of 2019, it will be the longest expansion over this period. The construction sector has benefited from this extended period of economic growth. After hitting a recessionary low point in 2011, it's now in its seventh year of consecutive growth. Over that time, spending on nonresidential building activity nationally has increased almost 50%. Architecture firms have seen a comparable recovery in their business conditions.¹ Net billings at US firms declined about 25% between 2008 and 2011, but had virtually recovered by 2015. Net billings at US firms by the end of 2017 (as reported in this study) were almost 15% higher than they were in 2008, while gross billings effectively matched their 2008 levels.

More challenging times likely on the horizon

Construction spending for nonresidential buildings moderated from growth of almost 14% in 2015 to under 6% in 2016 to just 2.5% in 2017. This trend might suggest that nonresidential construction is rapidly winding down to its next inevitable downturn. (FIGURE 01) And while recessions are inevitable, this construction cycle looks to have a bit more growth potential. US architecture firms have added more than 7,000 positions from midyear 2017 to midyear 2018 according to the US Department of Labor, bringing the total for payroll positions to almost 200,000. While still not back to the almost 220,000 positions in 2008, this does suggest that architecture firms are optimistic about future workloads. Even more directly, design revenue at firms has seen healthy growth recently. After a disappointing 2016, the AIA's Architecture Billings Index (ABI) began to

¹ For this report, information is gathered from those architecture firms where an AIA member has an ownership position. Research conducted by the AIA estimates that these firms generate almost two-thirds of architectural and related services revenue, according to the US Census Bureau's quarterly services surveys.



accelerate in 2017, and has remained at healthy levels through the first half of 2018. New project work coming into architecture firms has remained equally strong, suggesting that there is a lot of design activity in the pipeline at present. Indeed, project backlogs at architecture firms currently average in excess of six months, and are at their highest levels since the last recession. Analysis conducted by the AIA indicates that current ABI scores point to at least another nine to 12 months of moderate growth in construction spending.²

However, even with solid indicators of further growth in the coming quarters, the architecture/engineering/construction (AEC) industry is facing a growing set of challenges in the form of land prices, construction materials costs, and labor availability. While the steep climb in land prices—commercial land prices have increased almost 50% over the past five years—are likely normal cyclical pressures, the recent jump in construction costs appears to be well beyond typical acceleration at this stage of the cycle. In particular, steel, aluminum, and lumber costs are rising at a double-digit pace annually, largely as a result of trade concerns. However, the labor situation looks to be the most serious threat to a continued expansion in the AEC industries. The construction labor force in particular has seen limited growth during this expansion, and its heavy reliance on immigration to fuel further growth is facing many challenges.

Architecture firms getting bigger and more diverse

With the extended period of growth across the industry, architecture firms have been growing. The net result is that architecture firms with at least 50 employees accounted for

² ABI results are available monthly on the AIA website. An extensive review of the performance of the ABI in predicting future levels of construction activity: *Designing the Construction Future: Reviewing the Performance and Extending the Applications of the AIA's Architecture Billings Index* is also available at no charge on the AIA's website.

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FIGURE 02: Over half of national staff and 56% of revenue at architecture firms with 50+ employees
 % of all firms, staff, and gross billings by firm size for 2017, with 2015 and 2005 comparisons

Number of employees	Share of firms	Share of staff	Share of billings	2015 Share of billings	2005 Share of billings
1 to 9	75.8%	19.4%	13.7%	15.4%	16.5%
10 to 49	18.0%	29.8%	30.3%	33.3%	31.7%
50 or more	6.3%	50.8%	56.0%	51.3%	51.9%

over 6% of all firms nationally in 2017, doubling their share of 2011. These larger firms account for over half of all employees at US architecture firms, and 56% of gross revenue across the profession. Firms with 100 or more employees, while accounting for only just over 2% of all firms, employ about 28% of all employees at firms, and generate over 30% of revenue.

(FIGURE 02)

Larger firms have some competitive advantages, as well as some competitive disadvantages compared with smaller firms. Advantages include the potential for more specialization in their activities as well as greater levels of investment in technology, which often leads to increased staff productivity. Also, larger firms are typically able to diversify their practices, both geographically and by facility type, which helps when certain regions or building sectors are experiencing weaker times. More specifically, larger firms typically have the skills and resources to pursue international opportunities, and the global construction market offers substantially more opportunities for growth in the years ahead.

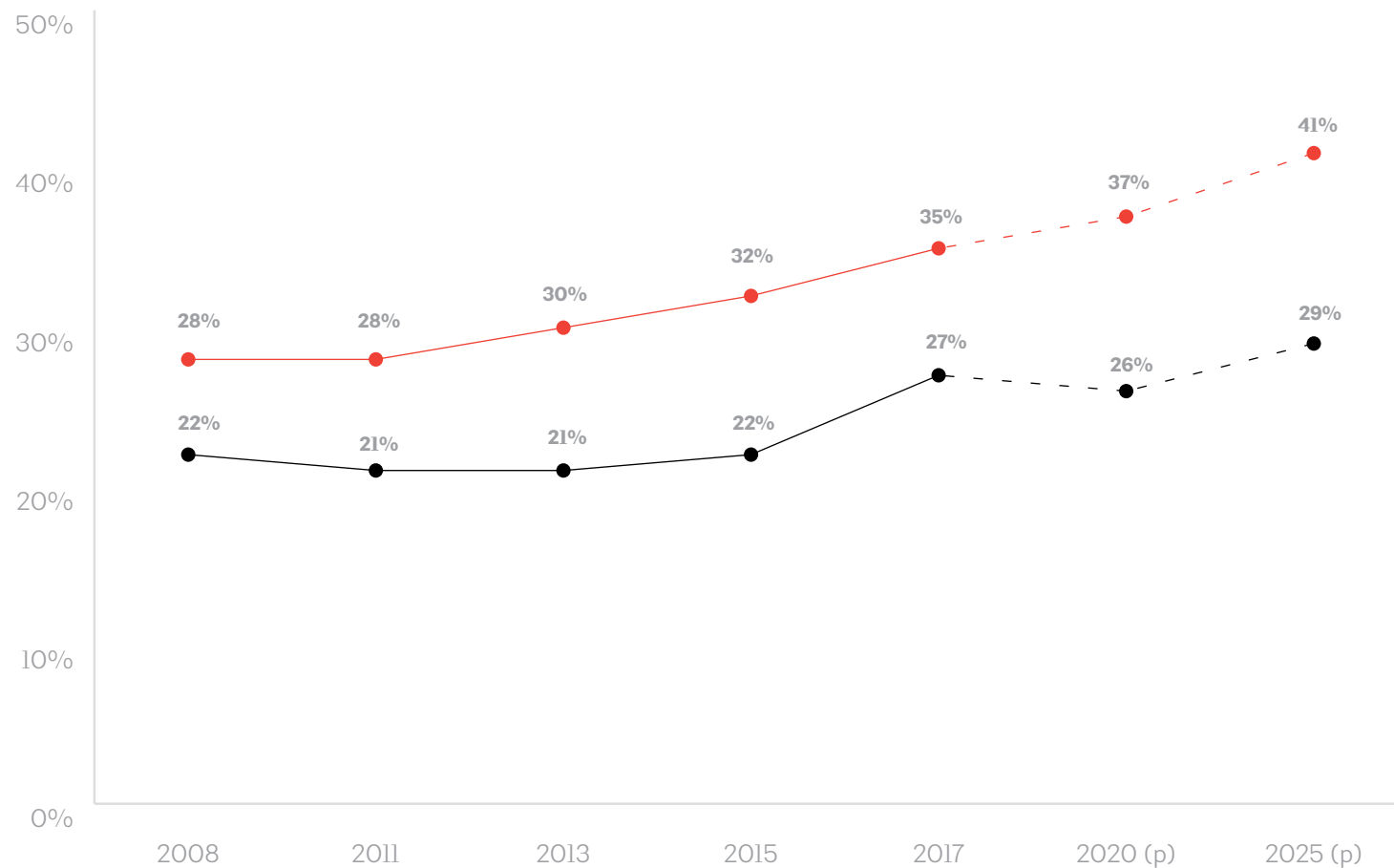
However, larger firms also have competitive disadvantages. They tend to have higher overhead—more nonbillable staff and greater levels of fixed investment in space and equipment—which can make them less competitive when market conditions become more challenging. Salaries tend to be higher at larger firms, which is not an issue when their staff is more productive, but creates problems when chargeability rates are falling.

As architecture firms have grown, they have also become more diverse. Over the past decade, the share of women architecture staff has increased from 28% to 35%, while that of minorities has increased from 22% to 27%. These shares are expected to continue to increase in the years ahead as more women and

FIGURE 03: Women and minority shares of architecture staff have seen steady growth in recent years

Women and racial/ethnic minorities as percentage of all architecture staff

- Share women
- Share minorities



minorities continue to enter the profession. For example, at present 40% of emerging professionals on the path to licensure at architecture firms are women, and 38% are minorities. Projecting recent trends would suggest that by 2025, 41% of architecture staff at firms will be women, while 29% will be minorities. (FIGURE 03) However, firm culture that supports women and minorities throughout their professional careers will be crucial in seeing this extension come to fruition.

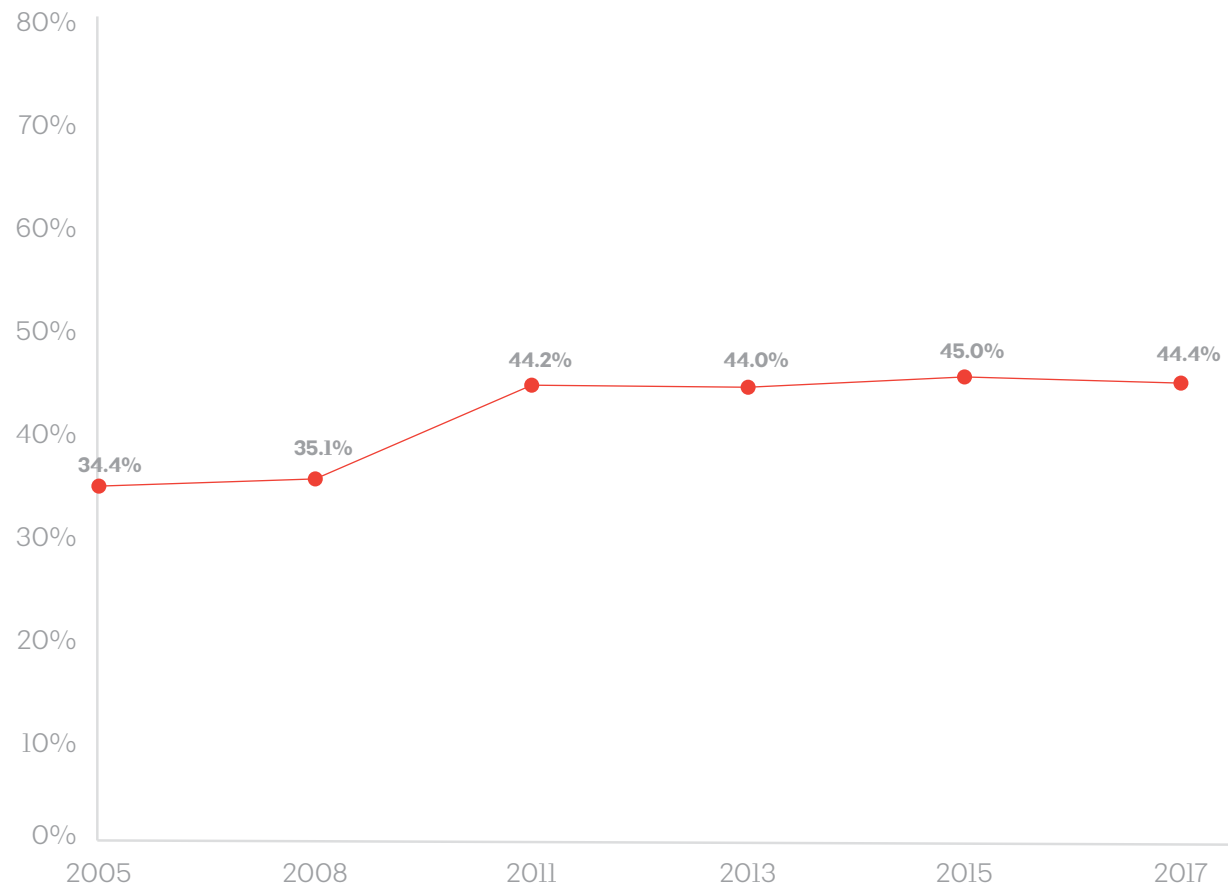
Retrofitting the existing building stock

There were approximately 5.6 million buildings nationally in 2012 according to the US Energy Information Administration.³ About half of these buildings were constructed before 1980, and generally were built to very different standards than contemporary buildings with regard to energy efficiency, sustainability, and security. With an aging building stock and generally slower growth in new construction due to more modest gains in our population, a growing share of design activity is being devoted to additions, renovations, rehabilitations, and retrofits to existing facilities, as well as to historic preservation activities.

Currently, architecture firms report that almost 45% of their building design revenue comes from work on additions to or work on existing facilities, up from under 35% in 2005. Generally, the share of work devoted to existing buildings follows the construction cycle. When the construction industry is seeing strong growth, a high share of activity is for new buildings. As business conditions weaken, the economics of new projects are more challenging, so there is greater incentive to work on existing facilities. Indeed, in 2005, when the construction sector was strong, design activity for existing buildings accounted for

³ 2012 Commercial Buildings Energy Consumption Survey (CBECS), US Department of Energy, Energy Information Administration, <https://www.eia.gov/consumption/commercial/reports/2012/buildstock/>

FIGURE 04: **Work on existing facilities continues to be a growing share of design activity**
 Renovations, rehabilitations, additions, and historic preservation as percentage of firm building design revenue



just over 34% of total market activity. By 2011, as the industry was in recession, this share increased to more than 44%.

However, in the years since, the share of design work on existing facilities has held steady even as the construction market has recovered. The heavy focus on the existing building stock is partly due to the growing incentives for upgrading existing buildings, and partly due to slower growth in demand for new facilities. There is a pronounced regional dimension to the share of activity captured by existing buildings. In the Northeast, over half of design activity is devoted to existing buildings, a share that grows to over 55% in the Midwest. This share drops to about 40% in the South, and 35% in the West. **(FIGURE 04)**

US architecture firms have benefited from an extend period of economic growth. Overall, the profession has mostly recovered from the effects of the 2008–2009 national economic recession. As a result, architecture firms as a whole are more profitable, have added staff, and have resumed their practices of providing traditionally popular basic design services under a design-bid-build delivery system. Growing profitability, coupled with some difficulty in adding qualified staffing, has encouraged firms to increase their technology investments in an effort to increase staff productivity. Building information modeling (BIM) is almost universally used at larger firms, and is increasing its saturation at smaller and midsize firms. In the coming years, a similar pattern of adoption is likely for emerging technologies like virtual/augmented reality, 3D printing, and 4D/5D modeling.