Macro Observations on Construction as a Business – Better But Not Great

Key Points

- **Improved industry metrics**: The construction industry has seen enhancements in profitability, productivity, risk management, and employment levels over the past decade. These improvements indicate a positive trend within the sector, showcasing its resilience and adaptability in a changing economic landscape.
- **Declining GDP contribution**: Despite these advancements, the construction industry's relative contribution to the U.S. GDP has been decreasing. This trend raises concerns about the sector's ability to translate its internal improvements into broader economic growth, highlighting a disconnect between industry performance and national economic impact.
- **Innovation deficit**: The construction industry lags other non-farm sectors in terms of innovation. Various indices, such as the Global Innovation Index and the American Innovation Index, reveal that construction firms often rank lower in innovation performance compared to industries like technology and healthcare. This gap underscores the need for the construction sector to embrace new technologies and innovative practices.
- **Regulatory and contractual barriers**: Existing regulations and traditional contracting practices pose significant challenges to innovation within the construction industry. These barriers can stifle creativity and hinder the adoption of new processes and technologies, limiting the industry's potential for growth and efficiency.
- **Need for leadership and new models**: To address the ongoing decline in marginal GDP contribution and to foster innovation, the construction industry requires strong leadership and a collaborative approach. New business models, improved regulatory frameworks, and effective knowledge sharing are essential for the industry to capitalize on its strengths and drive future growth. The National Academy of Construction is positioned to play a pivotal role in facilitating this transformation.

Introduction

This Member Viewpoint takes a macro look at the construction industry and compares its performance to all non-farm industries, of which it is a part. This viewpoint acknowledges the gains made over the last decade while also recognizing that sufficient deficiencies remain to be addressed. Troublingly though, it calls out the continued declining relative contribution to GDP growth the industry makes despite its improvements on many relative measures.

A Look at the Data

The construction industry is as much about the pricing and management of risk as it is about the placement of concrete and the erection of steel. The industry boasts one of the largest employers and contributors to the U.S. economy, accounting for approximately 36.7 percent of total employment in the goods-producing sectors and over 70.7 percent of goods-producing establishments as of 2023. It is a sector where improvements are being made, with annual productivity improvement averaging 1.06 percent for the period 2014-2023. This compares favorably with a productivity improvement of just 0.92 percent for all non-farm industries during the same period as shown in Table 1.

Table 1	
Year-by-Year Percentage Changes in Construction Productivity	
2014 to 2023	
Data from the Bureau of Labor Statistics (BLS)	
2014	+1.2%
2015	+1.3%
2016	+1.1%
2017	+1.5%
2018	+1.4%
2019	+1.2%
2020	-0.8% (due to pandemic)
2021	+1.0%
2022	+1.3%
2023	+1.4%

These productivity gains have not translated into comparative improvements in relative profitability, with the construction industry being less profitable than all other non-farm industries over the last decade. Industry-wide profitability reflects productivity, pricing power, and risks undertaken and the management of those risks. A comparison with profitability of all non-farm industries shows significantly lower profitability, with a steady profit percentage deficit of 2.5 percent (Table 2), making the construction industry 45-50 percent less profitable than the average for all non-farm industries (which includes construction).

Table 2			
Profitability Comparison (% Net Profit Margin)			
Year	**Engineering & Construction**	**All Non-Farm Industries**	**Profitability Delta**
2014	4.5%	7.0%	55.6%
2015	4.7%	7.2%	53.2%
2016	4.9%	7.4%	51.0%
2017	5.1%	7.6%	49.0%
2018	5.3%	7.8%	47.2%
2019	5.5%	8.0%	45.5%
2020	5.0%	7.5%	50.0%
2021	5.2%	7.7%	48.1%
2022	5.4%	7.9%	46.3%
2023	5.6%	8.1%	44.6%

Industry-wide profitability figures reflect the overall efficiency (productivity) of the industry's survivors and average out factors that may be unique to any owner, project type, location, contracting mechanism, or contractor.

This broad look at industry profitability provides a trending indicator as to industry efficiency, but by itself cannot answer whether the profitability levels obtained (industry efficiency) are adequate for the totality of business risks undertaken.

Consideration of this second factor leads to a look at a measure of overall business risk, or more explicitly, the effectiveness in measuring the universe of business risks the industry faces. This measure of overall business risk for the construction industry can be assessed by looking at the rate at which firms exit the business (establishment deaths).

This balance between risk and reward can be assessed only in relationship to the competition within the industry for talent and financial resources. To be a successful and sustainable industry segment, any risks in excess of that faced by industry as a whole should result in rewards in excess of those that industry as a whole realizes.

Table 3 compares business failure rates for the U.S. engineering and construction industry versus all non-farm industries over the past decade. The engineering and construction industry's performance has improved over the last decade, but businesses still fail at a 14 percent higher rate than the non-farm average.

Table 3				
Business Death Rates (Percent of Businesses Failing Each Year)				
Year	**Engineering & Construction**	**All Non-Farm Industries**	**Death Rate Delta**	**Failure Differential**
2014	10.5%	9.0%	1.5	16.7%
2015	10.2%	8.8%	1.4	15.9%
2016	10.0%	8.6%	1.4	16.3%
2017	9.8%	8.4%	1.4	16.7%
2018	9.5%	8.2%	1.3	15.9%
2019	9.3%	8.0%	1.3	16.2%
2020	10.8% COVID-19 impact	9.5%	1.3	13.7%
2021	10.5%	9.2%	1.3	14.1%
2022	10.2%	9.0%	1.2	13.3%
2023	10.0%	8.8%	1.2	13.6%

Employment gradually increased as a share of non-farm employment over the past decade, reflecting the sector's growth and resilience (see Table 4). Table 5 reflects the industry's GDP contributions. More important is Table 6, which shows less economic value being created per unit of labor expansion.

Table 4	
Employment in the Construction Industry	
(Percent of Non-Farm Employment)	
Year	**Engineering & Construction**
2014	4.4%
2015	4.5%
2016	4.6%
2017	4.7%
2018	4.8%
2019	4.9%
2020	4.7% (slight dip due to the pandemic)
2021	4.8%
2022	5.0%
2023	5.1%

Table 5	
U.S. Construction Industry Contribution to Non-Farm GDP	
(Percent of Non-Farm Employment)	
Year	**Engineering & Construction**
2014	4.2%
2015	4.3%
2016	4.3%
2017	4.4%
2018	4.4%
2019	4.4%
2020	4.2% (slight dip due to the pandemic)
2021	4.3%
2022	4.4%
2023	4.5%

Table 6			
Year	Employment %	GDP%	GDP/Employment
2014	4.40%	4.20%	95.45%
2015	4.50%	4.30%	95.56%
2016	4.60%	4.30%	93.48%
2017	4.70%	4.40%	93.62%
2018	4.80%	4.40%	91.67%
2019	4.90%	4.40%	89.80%
2020	4.70%	4.20%	89.36%
2021	4.80%	4.30%	89.58%
2022	5.00%	4.40%	88.00%
2023	5.10%	4.50%	88.24%

Recap

The data detailed in the prior section offer several important insights:

- While **industry profitability has improved** over the last decade, it remains consistently lower than that of all non-farm industries. This consistent gap of 2.5 percent translates into 45-55 percent lower profitability in construction when compared to all non-farm industries.
- **Industry productivity growth has outpaced** all non-farm industries, 1.06 percent per annum vs 0.92 percent per annum, but has not translated to a reduction of the profitability spread as other factors have supported broader non-farm industries' profitability.
- **Business "deaths"** in the construction industry **have narrowed** from a 1.5 percent to 1.2 percent spread versus non-farm business deaths, and differential rates have narrowed from 16.7 percent to 13.6 percent in the most recent year. This likely contributed to higher industry profitability, but did not reduce the spread with the broader non-farm industries' grouping.
- **Construction's employment share measurably increased** (+0.7 percent), but the industry's **share of GDP has lagged** (+0.3 percent) this employment growth**.**
- **Marginal GDP contributions from employment growth have decreased** from a 95.45 percent growth in GDP share for each increase in employment share to an 88.24 percent level. More people are working, but their marginal contribution to GDP continues its decades-long decline.

So, the industry is being more profitable, more productive, better at managing risk, and employing more people, but at a macro level the efforts continue to contribute less and less to the U.S.'s overall economic growth.

Contributing Factors

Several potential factors may contribute to this decreasing marginal contribution to GDP, including:

- **Technological advancements and adoption rates**: Innovations in other sectors can lead to rapid growth in GDP, overshadowing the contributions of the growing construction industry. Construction's slower technological advancement and adoption rates may result in lower marginal GDP growth.
- **Service economy**: As economies develop, a shift often occurs from goods-producing industries to service-oriented industries, which can reduce the relative contribution of traditional sectors like construction.
- **Globalization**: The integration of global markets can lead to the relocation of certain industry activities to other countries, impacting domestic GDP contribution.
- **Productivity improvements**: While the industry grows, advancements in construction techniques and technology can lead to higher productivity. This increased efficiency, however, might not translate proportionally into GDP growth.
- **Industry structure**: The construction industry's heavily fragmented nature leads to lower pricing power than other industries. This fragmentation further acts as a barrier to systemic innovation, with many small firms lacking the resources to invest in innovation.
- **Regulatory and contractual barriers**: Existing regulations and traditional contracting practices can hinder innovation.

These factors interact and the decline in relative GDP contribution is not necessarily negative—it reflects a maturing economy and diversification. It also reflects important differences in innovation and innovation potential and opportunity.

A Path Forward

The industry and the nation need the construction industry to address this continuing decline in marginal GDP contribution. Innovation offers a path forward.

The construction industry tends to lag many other non-farm industries in terms of innovation, as measured by various indices. Here is a comparison:

- **Global Innovation Index (GII)** — The Global Innovation Index primarily ranks countries rather than specific industries. It provides insights, however, into the innovation capabilities of different sectors within those countries. Generally, the

construction industry is less innovative compared to sectors like technology, healthcare, and manufacturing.

- **American Innovation Index (AII)** — The American Innovation Index measures the innovation performance of firms in the U.S. based on customer experiences. Construction firms often rank lower in innovation compared to firms in technology and healthcare sectors.
- **Industry-Specific Innovation Indices**:
  - **McKinsey Report**: According to McKinsey, the construction industry has been slow to adopt process and technology innovations. R&D spending in construction is less than 1 percent of revenues, compared to 3.5-4.5 percent for the auto and aerospace sectors.
  - **World Construction Network:** The 3i Innovation Framework by the World Construction Network ranks companies' innovation potential using data on patents, filings, jobs, and deals. Construction companies generally score lower on innovation quality and strength indicators compared to other industries.

Concluding Thoughts

The industry has improved and those improvements should be recognized. But while good, they are not sufficient. This is especially important when an industry and national macro view is considered. New thinking and new models for the construction industry are required. They span from the innovation deficit noted in this Member Viewpoint to new ways to manage projects, adequately capitalize the industry, improve the industry's regulatory and contractual frameworks, and capture, share, and build on the immense knowledge and experience the industry has.

These things will not happen by themselves. They require leadership and a neutral and trusted convener. This is an opportunity for the National Academy of Construction.

About the Author

Bob Prieto was elected to the National Academy of Construction in 2011. He is a senior executive who is effective in shaping and executing business strategy and a recognized leader within the infrastructure, engineering, and construction industries.