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Long-Term Economic Outlook for Construction

United States & Southeastern Region

2020 – 2030

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February 2020

EXECUTIVE SUMMARY:

This report examines the long-run prospects for construction activity and employment in the skilled building trades during the years 2020-2030 for the United States and the Southeast. It concludes that current levels of activity, at least in real terms, are approaching a peak, to be followed by a modest decline associated with the completion of a few huge projects. Within a few years' time, however, nonresidential construction measured in real dollars will modestly increase, lifting nonresidential construction and stabilizing jobs in the construction trades. Renewed industrial construction and federal funding for transportation and environmental public works could carry nonresidential construction, measured both in dollars and by the number of skilled trade jobs, to new highs.

Total Nonresidential Construction: In 2016, at the beginning of this report's time horizon, total U.S. nonresidential construction measured in real terms stood at about \$718 billion. It is set to rise and peak at an annual rate of \$779 billion during the third quarter of 2021, before reaching a trough at \$683 billion in 2023. Thereafter, it begins a slow steady rise that ends just short of its earlier peak. The inflation adjusted pattern reflects recent increases in nonresidential building, particularly industrial construction, which began a decade ago.

Incorporating even modest rates of inflation into the forecast substantially increases apparent levels of activity; and legislative programs that propose lifting spending on public infrastructure can add substantially more to prospective totals. President Trump, Senate Democrats, and others have proposed spending \$1 trillion over ten years on public works and related projects. At an average spending rate of \$100 billion per year, those programs could raise nonresidential construction by more than 10%.

Total Skilled Trades Employment: Skilled trades jobs number range from an estimated low of 4.2 million at the outset in 2016 to a peak of 6.3 million during the first quarter of 2022. This very substantial increase in skilled trade jobs is driven by specific projects, either under construction, nearing start, or in the planning queue¹. Information about the project queue, which is available for the first few years of the forecast provides an extraordinary degree of detail about skilled trades employment. The skilled trade profiles of specific projects over time accounts for the sharp peaks and declines in skilled trade jobs, which notably differ from the smoother patterns of total nonresidential construction.

What the skilled trades data reveals is that construction activity during the next five years will lift demand for the skilled trades through the end of 2021, but surge in 2022Q1 with the start of major projects. That surge, however, will be brief and skilled trade demand will drop sharply during the subsequent two years with employment falling from 6.0 million to 4.9 million tradesmen. Given tight markets for skilled construction workers, project managers may need to adjust their schedules and seek construction alternatives (E.g. modularization) in ways that smooth labor demand.

¹ This data is collected, aggregated, and analyzed by researchers at Construction Industry Resources, LLC via their proprietary Construction Labor Market Analyzer.

One characteristic difference between the nonresidential spending data and the skilled trades employment data is the apparent discrepancy regarding infrastructure funding. Examining the \$1 trillion infrastructure program shows what appears to be a greater impact on total spending rather than on total trades jobs. The explanation is that skilled trades workers engaged in heavy construction earn on average much more than the average construction worker, which decreases the (real) dollar value of federal programs.

Southeast Construction Spending and Trades Employment: The Southeast Region produces results very similar to the U.S. analysis. Construction spending in the Southeast rises to an initial peak during 2022, slips slightly over subsequent year before reaching a second peak in 2027. Skilled trades employment peaks in 2022, and never quite returns to those levels, at least during this forecast period. As in the U.S. forecast, the differences between construction spending and skilled trade employment highlight the expense of high-skilled workers in the trades.

The very sharp increases for the skilled construction trades during the early 2020's emphasize the vigor of nonresidential construction in the Southeast. Much of the increase in skilled trades employment nationally is due to the region, and more specifically to industrial projects. Of particular interest is the buildout of liquefied natural gas plants along the Gulf Coast. Additional LNG trains are expected to be completed during the current year, with more plants due to begin construction in coming years.

FORECAST ISSUES – MIDDLE AND LONG-TERM:

The current forecast uses information about the construction queue of projects and their estimated labor needs to forecast near-term demand for the skilled trades regionally and nationally. The unusually detailed data provides the skilled trade numbers with exceptional granularity, a great aid during the early years of the forecast horizon. Projecting investment and jobs over the middle and long-term requires a broader set of tools, as well as a perspective on industry cycles along an examination of key questions.

- Will the economic environment remain benign in the sense that the nation will encounter only a few recessionary years and avoid deep or prolonged downturns?
- Do the long-run demand prospects for products like refined petroleum, petrochemicals, and liquefied natural gas justify continuing the major investments needed to sustain heavy construction?
- Will the U.S. federal government pass and fund a major program focused on rebuilding the nation's public infrastructure, generating substantially higher spending on highways and bridges, rail and transit projects, wastewater and drinking water facilities, as well as other public works projects?
- Will labor and other risks continue to escalate, increasing project cost and lowering the return on capital employed such that projects are cancelled, delayed and/or labor hours are moved overseas?

The following sections provide discussions of the prospective economic environment, the outlook for heavy industrial construction, and chances that a major spending bill will pass the U.S. Congress, lifting investment in infrastructure.

The Economic Environment 2020-2030:

The economic environment will be supportive of growth during the forecast years, 2020 through 2030 inclusive, real GDP will rise an average 1.8% per annum, and there will be only a brief period of weakness during 2022-2023.

The long-term outlook for United States economy projects a supportive environment. It expects the federal government will pursue policies that encourage economic growth and projects, that the world economy will continue to gain, and the nation will avoid international conflicts and other disruptions. Under these conditions, the overall U.S. performance aligns with projections by the Congressional Budget Office, and real gains will average approximately 1.8% per annum, sufficient to lift real output by approximately 24% for the years from 2020 through 2030. Inflation remains contained, although it accelerates slightly. Consumer price inflation nears 3% per year, although the employment cost index and the GDP deflator post more modest gains.

In the building sector, housing rises an average 1.6% per year while nonresidential construction grows in nominal terms but is essentially flat when adjusted for inflation. The overall performance is held back by weakness during early years when construction slips 6% and 7% in 2022 and 2023. Energy prices grow steadily, providing a basis for continued industrial construction. Interest rates gradually rise with the 30-year conventional mortgage rate reaching over 5% near the close of the forecast.

Economic expansions are not perpetual, however. They succumb to financial disruptions, commodity and product shortages, and even a collective loss of nerve due to political crises, financial panics, and other disruptions. The recent outbreak and spread of the coronavirus strain in the People's Republic of China is a worrying example of such disruptions.

The result of these benign conditions is that there is only one economic slowdown during the forecast years. It is a short, shallow slowdown during 2022 and 2023 when GDP growth drops to 1.4% and then 0.6% respectively. This is sometimes called a "growth recession", which is a year when real GDP grows, but at least one of the year's four quarters experiences a decline.

Another potential danger is that U.S. fiscal and interest rate policies have been unusually expansionary for years. The fear is that when the world economy slows and a time of reckoning arrives, the U.S. and the world will face it with tools that, through overuse, have lost much of their potency.

The United States recorded a total budget deficit of over \$1.0 trillion for the fiscal year ending September 30, 2019 and expenditures for fiscal 2020 are increasing. A time of reckoning will come thereafter. The Bi-Partisan Budget Act of 2019 signed by President Trump on August 2, 2019, lifts spending limits by \$100 billion over two years and extends the debt ceiling through the end of July 2021. The legislation suspends the sequestrations that would have taken place under the Budget Control Act of 2011, locking trillion-dollar budget deficits at least through 2021.

The Outlook for Heavy Industries 2020-2030:

Industrial construction will continue at historically high rates, accelerating in the near term before slipping, stabilizing, then eventually heading higher.

Behind this conclusion is the belief that American natural gas will remain unusually inexpensive, making it possible for U.S.-based liquified natural gas exporters to profit even with international LNG at only \$4 per thousand cubic feet. The low prices are expected to stimulate demand growth across the board.

The behavioral basis for industrial construction cycles is encompassed by the stylized stories economists tell about capital investment and capacity expansion. At the outset of a building cycle, rising demand for industrial products first stabilizes, then begins to lift product prices, leading to improved margins and accumulating profits. Owners anticipate a time when demand will exceed overall capacity. Seeking incremental market share, they invest in new plant and equipment. Competition among companies, however, leads to an oversupply, which in turn leads to weakening prices. Owners are forced to rein in capital spending. Eventually, low prices lead to higher product demand, which initiates a new cycle.

In the case of energy and related products, industrial construction has been intense for the last decade as production has outstripped refining, processing, and liquefaction capacity. During the ten years from late 2009 through late 2019, crude petroleum production in the United States rose from 5.4 to 12.9 million barrels per day, while natural gas output increased from 71.5 to 116.9 billion cubic feet per day. Low prices, however, have reduced rig counts sharply and output is rising more slowly.

Results through the initial three years of the forecast derive from the Construction Labor Market Analyzer (www.myCLMA.com) database, based on projects which are planned, nearing start or under construction. While investment in plant and equipment responds to product prices, the lowest cost producers can still profit even when pressed by competitors. The fact that much of American natural gas production is associated gas, that is a byproduct of producing crude petroleum, means that it is essentially costless. As a result, U.S. companies should be able to sell natural gas – an energy product, a feedstock for chemical products, and an important input into heavy industry – at very low prices.

Public Infrastructure Legislation 2020-2030:

Interest in passing legislation that will promote rebuilding America's public infrastructure remains intense and the President and Congress will likely find a way to advance legislation that is in their common interest.

The conviction that public infrastructure in the United States needs trillions of dollars of additional investment is widely shared among politicians, business leaders and the public. The American Society of Civil Engineers' last four-year review grades most U.S. infrastructure at D or D+ with only railroad and ports scoring higher. The International Monetary Fund, which provides reviews of member nations' policies has urged U.S. leaders to undertake a sustained effort to improve public infrastructure, which would improve productivity in the private sector, although programs from President Trump, Senate Democrats, and others have so far failed to pass the U.S. Congress.

Existing proposals call for spending approximately \$1 trillion on all types of public infrastructure over a decade, leading to an annual increment of approximately \$100 billion per year, a little more than 10% of total nonresidential spending. These numbers represent a significant increment to nonresidential construction. By far the largest current federal program is the five-year “Fixing America’s Surface Transportation Act”, signed by President Obama on December 4, 2015. It provides \$226 billion for the five years from 2016 through 2020; its annual budget authority tops out at \$47.1 billion for fiscal 2020².

The Legislative Outline for Rebuilding Infrastructure in America, which the President released on February 12, 2018, aims i) to give state and local authorities more discretion in making investment decisions, ii) to reduce regulatory barriers, iii) to simplify project permitting, and iv) to aid workforce training. The Trump proposals are comprehensive, covering all the infrastructure sectors of traditional concern to both the federal government and the states.

The problem facing the Trump proposals is financial and fiscal: How to leverage \$200 billion in federal funds to produce the \$1 trillion in public infrastructure investment the Administration expects. The Trump Administration proposes funding its plan primarily by requiring higher levels of matching funds from state and local governments and on private sector financing creating or extending tax advantaged bond programs.

Senate Democrats’ Jobs and Infrastructure Plan for America’s Workers, originally proposed in March 2018, remains the basis for their subsequent proposals. It sets spending \$1 trillion on a combination of highways and bridges, drinking and wastewater project, transit and public transportation, railways, grid modernization, high-speed internet, and “vital infrastructure”. Included are allocations for schools and local projects. An important distinction is that the Senate Democrats propose funding their plans by raising both personal income taxes for very wealthy individuals and lifting total corporate income tax to a 25% rate.

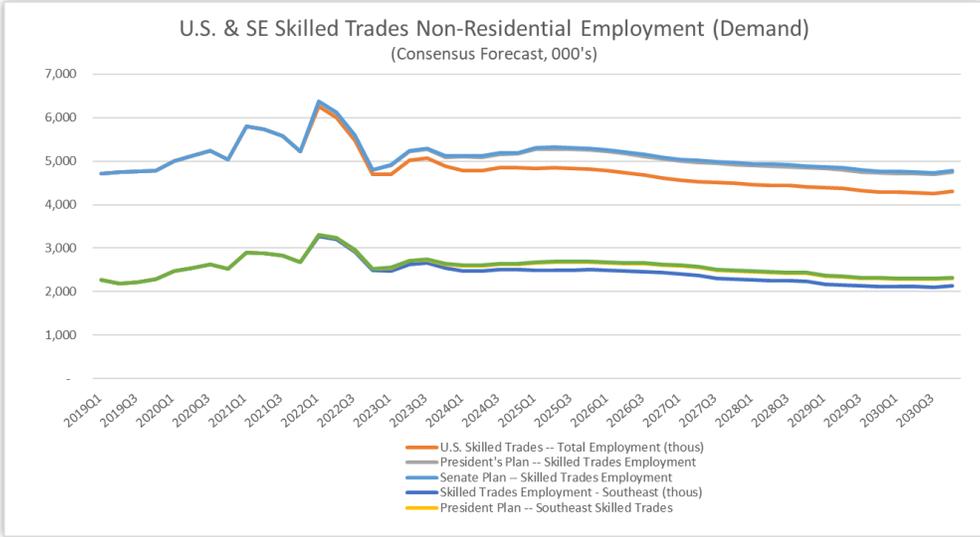
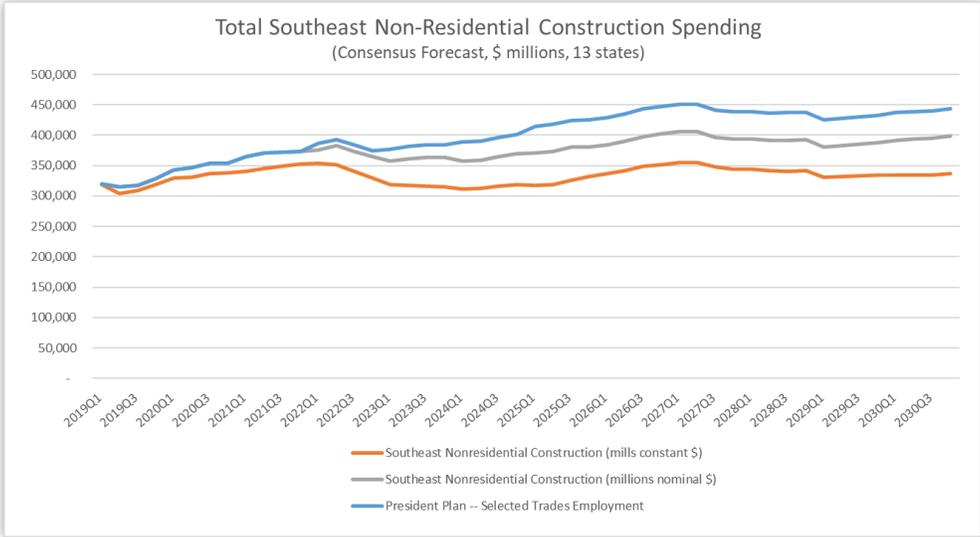
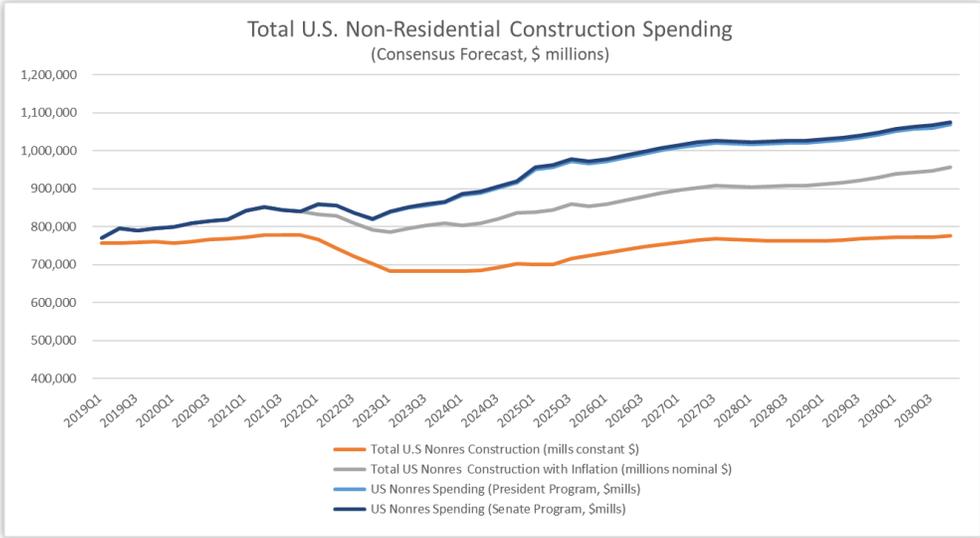
The bottom line is that even if these or similar plans are eventually approved, it is unlikely there will be a substantial increase in infrastructure construction before calendar 2022. Large increases in spending for public infrastructure lag because they require increased staffing at state governments and increased contracting by construction companies that may already be operating near their potential. Those same companies may be having difficulty hiring and retaining staff in a tight labor market.

For the purposes of analysis, we assume significant spending begins in calendar 2022. The total amounts of \$950 billion and \$1 trillion need to be disbursed over a decade. This schedule, however, may overstate what will be available under the planned infrastructure program. There is already the question whether the planned federal spending is sufficient to incent the necessary matching investments. Further, Democratic majorities, if they prevail in the November election, will certainly play an important role in setting spending levels and policy objectives.

To effectively address construction labor risk, learn more about the Labor Risk Management (LRM) program at www.CIRanalytics.com.

² For a detailed summary of Fixing America’s Surface Transportation Infrastructure Act, please see <https://www.fhwa.dot.gov/fastact/summary.cfm>.

Appendix A



Appendix B

DATA & METHODOLOGY:

The forecasts of employment for both the skilled trades and nonresidential construction are based on a set of regional models from which totals are aggregated to provide the national outlook. The regional models focus on employment and wages via supply and demand equations for fourteen highly-skilled, critical trades.

Economic Data:

Economic data employed in the analyses is complete through final quarter 2019 with selected series through a few months of the fourth quarter. Quarterly gross national product estimates for the fourth quarter third quarter have been revised. Skilled trade employment and wage estimates are based on the Occupational Employment Statistics series, which have been updated for the latest data. The OES data is reported once a year in April or May for the previous year.

The consensus and alternative macroeconomic forecasts stem from Wall Street Journal Surveys as well as long-term predictions from federal bureaus, including the U.S. Energy Information Administration and the U.S. Congressional Budget Office. Most basic economic data are compiled by the Bureau of Census, the Bureau of Economic Analysis, the (U.S.) Energy Information Administration, and the Bureau of Labor Statistics. The data are downloaded from the Federal Reserve Bank of St. Louis website, FRED (Federal Reserve Economic Data). The Congressional Budget Office provides a long-term economic forecast twice a year as part of its federal budget estimates.

Construction Trades Employment and Wage Data:

A key source of information is the Construction Market Labor Analyzer, which translates individual construction projects into the derived demand for the skilled construction trades. The project data comes from owners and other participants who enter project details into the CLMA database, and from CLMA analysts who collect and vet additional information. Their judgements about when projects will start, how long they will take, and what they will cost are key to all analytics work.

The results presented here are based on the most recent data and best estimates at hand, yet does not guarantee a 100% accurate prediction. Forecasts are planning tools and the results of any analysis need to be weighed by the users based on their knowledge and experience.

Appendix C

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