



CONSTRUCTION SPENDING AND EMPLOYMENT: History and Forecast Terms and Sources

Construction Spending

Source: Census Bureau Value of Construction Put in Place Survey [Annual Historical Data](#) (“Annual Total Table”). Data are from the March 2021 release and are subject to revisions in future releases from the Census Bureau. The data are in current dollars (i.e., not adjusted for inflation).

Total Private Employment

Source: Bureau of Labor Statistics, [Current Population Survey, Table 42](#)

Excludes the self-employed. Only annual data are available.

Construction Spending and Job Creation

According to a model developed by Markstein Advisors to calculate the relationship between the volume of construction spending and demand for private construction employment (excluding the self-employed), every \$1 billion in extra in overall construction spending generates an average of at least 5,700 construction jobs.

Infrastructure construction—highways, bridges, airports, power plants, etc.—uses a lot of heavy equipment that does not require as many workers as other types of construction. Other types of construction involving the installation of drywall, plumbing, electrical wiring, HVAC systems and the like require more labor and thus create more jobs. Every \$1 billion in extra construction spending on infrastructure generates an average of at least 3,000 construction jobs.

Construction Spending Forecast and Workforce Shortage Assumptions, 2021-2023

Scenario 1: The Base Case. The base case is considered the most likely to occur. Under this scenario, starting with annual construction spending data for 2020 (\$1.43 trillion), the estimate assumes a growth rate of 1.3% (to \$1.45 trillion) for 2021, 3.5% for 2022 (to \$1.50 trillion) and 4.5% for 2023 (to \$1.57 trillion). This is an average of 3.1% per year at a compound rate, roughly in line with the two-year average growth rate for 2018 and 2019. Under this scenario, employment demand increases by 430,000 in 2021 from actual employment of 7,829,000 construction workers in 2020. Employment demand increases an additional 375,000 in 2022 and 479,000 in 2023. Thus, from 2020 through 2023, the demand for construction workers is projected to rise by 1.28 million.

Scenario 2: The Low Growth Rate Case. This scenario assumes a growth rate of 1.3% per year (roughly the average of the annual growth rates from 2010 through 2020). Under this scenario, construction spending is \$1.45 trillion for 2021, \$1.47 trillion for 2022 and \$1.49 trillion for 2023. Under this scenario, employment demand increases by 430,000 in 2021, 191,000 in 2022 and 195,000 in 2023. The demand for construction workers is projected to grow by 816,000 from 2021 through 2023 in this scenario.

Scenario 3: The High Growth Rate Case. Under this scenario, the estimate assumes 8.1% growth (to \$1.55 trillion) for 2021, 3.6% for 2022 (to \$1.60 trillion) and 4.5% for 2023 (to \$1.67 trillion). This is an average of 5.4% per year at a compound rate, roughly in line with the ten-year average growth rate. Under this scenario, employment demand increases by 986,000 this year, 411,000 in 2022 and 512,000 in 2023. In this scenario, the demand for construction workers is projected to be up by 1.91 million through the end of 2023.

Construction Spending Forecast (Trillions of Dollars)			
	2021	2022	2023
Scenario 1 (Base Case)	1.45	1.50	1.57
Scenario 2 (Low Growth Rate Case)	1.45	1.47	1.49
Scenario 3 (High Growth Rate Case)	1.55	1.60	1.67

Additional Construction Employment Demand			
	2021	2022	2023
Scenario 1 (Base Case)	430,000	375,000	479,000
Scenario 2 (Low Growth Rate Case)	430,000	191,000	195,000
Scenario 3 (High Growth Rate Case)	986,000	411,000	512,000

Construction Spending and Job Creation Trends

The spread of the coronavirus and efforts to contain and limit its effect on the population had a big impact on construction activity and construction employment. Seemingly paradoxically, in 2020, construction spending rose by 4.8% even as the employment measure used in this model fell by 6.3%.

There were a number of factors that contributed to this seemingly odd result. They include:

1. Increased building materials and labor costs pushed up construction spending, which is in nominal dollars. In particular, many building materials spiked in cost during the pandemic due to shortages and supply chain disruptions.
2. The mix of construction changed, with most of the increase occurring in residential construction, which had some of the largest price increases (mainly due to increased lumber prices). Also, the mix of residential construction was tilted towards higher-end homes, which cost more (higher-grade materials as well as being larger) but don't require that much more additional labor.
3. Reduced labor supply due to the pandemic encouraged builders to adopt labor-saving technology faster than they normally would.
4. Builders improved scheduling and logistics of building materials delivery, as well as the scheduling and overall use of available workers (moving them from project to project, limiting their down time).
5. Increased use of prefabrication and modularization reduced the amount of labor needed for some aspects of construction (greater productivity). Many of these workers are counted as employed in manufacturing, not construction.
6. Smaller, less efficient construction companies went out of business.

Employment Demand Estimate

The construction spending/employment model developed by Markstein Advisors adjusts for expected increases in construction costs because construction spending is in nominal dollars (i.e., not adjusted for inflation). Also, the model includes productivity gains in construction, reducing the amount of labor needed to produce a certain dollar amount of construction output. At the same time, the model includes the shift in the mix of projects and added regulations that affect the number of workers needed to complete a project. Further, there is an adjustment for the increased need to protect workers from the coronavirus, which adds to the need for additional labor, increasing cost.

Finally, the model is based on construction wages and salaries remaining at 2020 levels. Higher wages and salaries would reduce the demand for labor. Wages are likely to increase in 2021 and beyond, particularly for the skilled labor that is in greatest demand. That will further encourage the use of various technologies that augment or replace labor and software that promotes better scheduling of labor and materials delivery and reduces the use of labor. The net result will be somewhat lower demand for labor than shown by the model. However, these adjustments take time, so the reduction in the demand for labor in a single year is fairly small (likely less than 5% of estimated demand). Hiring of construction workers will be limited more by lack of qualified workers than by employers reducing demand.

On the positive side, workers who are unable to find work in their pre-pandemic field may find opportunities in construction attractive. Also, training programs in construction (such as at technical schools) are turning out more qualified workers in increasing numbers.

ABC issues news monthly news releases on construction-related economic data and trends, including on federal [construction spending](#), [employment](#), GDP and the [Producer Price Index](#) data, as well as [state-by-state construction unemployment estimates](#). In addition, ABC produces the [Construction Backlog Indicator](#), the only economic indicator that reflects the amount of work that will be performed by commercial and industrial construction contractors in the months ahead, and the [Construction Confidence Index](#), a diffusion index that signals construction contractors' expectations for sales, profit margins and staffing levels.