

The Contribution of Residential Construction to the U.S. Economy

The construction industry is a major component of U.S. Gross Domestic Product (GDP) and has out-performed GDP growth during the most recent business cycle. Due to its vertical (supply chain) and horizontal linkages (interdependencies with complementary sectors) residential and non-residential construction both enjoy large multipliers; that is, they generate large returns to total economic output per dollar of direct investment. These interdependences with other sectors are also deepened and expanded as a result of the local market scale of the industry, its relatively high labor intensity and high value added per worker that generate positive payroll effects, and the large number of firms, reflecting a broad range of sizes and ownership models, that characterize this industry.

As the U.S. economy struggles to rebound from the COVID-19 Recession, residential construction can be a major force in accelerating the pace of recovery.

The overall construction industry's favorable multiplier acceleration effects are even greater for the residential construction industry. The residential construction industry's market segmentation and geographic independence, the size range of participating firms and reliance on subcontractors that localizes the industry's economic effects, and the well-established home finance industry that supports consumer demand enhance the industry's economic impact potential and underscore the importance of residential construction outlays in determining the growth path of the U.S. economy. As the U.S. economy struggles to rebound from the COVID-19 Recession, residential construction can be a major force in accelerating the pace of recovery. Without strong incentives and institutional support for this industry, its potential for stimulating broad-based economic growth will be diminished and the industry's underperformance will dampen the GDP recovery in 2020 and lower the trajectory of GDP growth in 2021.

The Construction Industry's Contribution to the National Economy

In 2019, spending for residential and non-residential buildings and for infrastructure construction totaled \$1.307 trillion or 6.1 percent of U.S. GDP. This direct spending, inclusive of labor, materials, architectural and engineering services, overhead, insurance, taxes, and profit during construction over the year, impacts a wide range of sectors and subsectors within the construction industry. These impacts extend to many sectors that are interdependent with it, such as professional and business services, financial activities, retail trade, and transportation services.

While this \$1.3 trillion in direct spending in 2019 was economically impactful, it excluded many related outlays such as pre-construction soft costs, site development costs (grading and drainage), landscaping, marketing, property sales management and commissions, tenant improvements and home furnishings, and closing costs. The

magnitude of these outlays has been estimated (NAIOP, 2020) in calculating the full development budget for commercial buildings (office, manufacturing, warehouse and flex, and retail): soft costs, 15.5 percent; site development costs, hard costs, 52.4 percent; 14.4 percent; and tenant improvement costs, 17.7 percent.

Additionally, building operations outlays—maintenance and repair, services to buildings, management, and utilities—that commence following the completion of building construction are significant annual outlays as these are generated not only by the new buildings that are constructed each year but flow annually from the entire inventory of built space and have the advantage of being less cyclically sensitive than direct construction spending.

The construction multiplier is one of the highest of any major industrial sector

In combination with annual construction outlays and construction-dependent economic activity, these recurring annual building operations-related outlays help explain why the construction multiplier—the total output value for each dollar of construction spending—is one of the highest of any major industrial sector; it ranks 5th in magnitude among 64 categories in the RIMS II (2012/2017) multipliers calculated by the U.S. Bureau of Economic Analysis as released on August 30, 2019.

Using this aggregate construction multiplier—3.0195, the economic impact and significance of total construction spending on U.S. GDP in 2019 can be calculated:

$$\$1.307 \text{ trillion} \times 3.0195 = \$3.946 \text{ trillion} / \$21.428 \text{ trillion (GDP)} = 18.4\% \text{ of GDP}$$

In 2019, for each dollar of construction outlay, U.S. GDP increased by \$3.02.

With \$1.307 trillion in construction outlays, the total GDP effect was \$3.946 trillion accounting for 18.4 percent of all economic activity last year. However, as large as this share of GDP is, it does not reflect the full magnitude of the building industry's economic impact on GDP, as significant interdependent segments of the industry are not included, as noted above.

Home construction generates new personal earnings and support a broad base of jobs across the nation.

In addition to the GDP effect, construction outlays also generate new personal earnings or labor income and support a broad base of jobs within the national employment base. These jobs and earnings multipliers are also highly ranked in comparison to other industries.

While the jobs multiplier often garners most of the attention, industries with high jobs multipliers often are associated with low-wage employment; that is, more jobs can be supported per \$1 million of investment. When jobs and earnings multipliers are considered together, the number of jobs and their earnings provide a better measure of the industry's payroll impacts. These are important as this new payroll drives consumer spending in local economies and spreads the economic effects across the breadth of the host economies.

For the construction industry, its direct outlays support 20.3 jobs per \$1 million in direct investment and generate new personal earnings across all effected sectors—direct, indirect and induced—of \$1.01 for each \$1 in direct investment. In comparison, within the hospitality industry, the food and beverage sub-sector would support 27.4 jobs per \$1 million in direct investment but only generate \$0.86 in new personal earnings across all affected sectors for each \$1 of direct investment.

The Residential Construction Industry’s Multiplier Acceleration Effects

The construction multiplier is calculated to capture the indirect and induced effects of the initial construction expenditures. By doing so, the multiplier represents the full economic force of construction spending on GDP, with the exceptions previously discussed. Even with this undercount, it is clear that with a multiplier of 3.02, among the highest compared to all other industrial sectors, that the performance of the construction sector can either lead GDP growth or dampen GDP growth.

Construction spending is a powerful source of economic activity.

The acceleration effects of construction investment are even greater within the residential construction sub-sector than for the total construction industry. Residential construction outlays have a total output multiplier of 3.08, a personal income multiplier of 1.08 and a jobs multiplier of 21.66 jobs supported per \$1 million in direct outlays.

These multipliers—for the construction sector as a whole and for residential construction—establish construction spending as an impactful source of economic activity. The benefits of an expanding residential construction industry are clearly demonstrated in Table 1. Residential construction out-performed GDP growth starting in 2012 and continued each year through 2018 and constituted an increasing share to GDP growth peaking in 2017.

Table 1

Residential Building Leads GDP Growth During the Business Cycle
(annual real percent change)

Year	GDP	<u>Residential Building</u>		
		Starts	Value ¹	Fixed Investment ²
2010	2.5	5.8	- 2.2	- 2.5
2011	1.6	4.4	0.9	- 0.1
2012	2.2	28.1	10.5	13.0
2013	1.8	18.4	19.9	12.4
2014	2.5	7.8	14.4	3.8
2015	2.9	10.7	14.2	10.2

2016	1.6	6.4	10.6	6.5
2017	2.4	2.6	12.4	3.5
2018	2.9	3.4	2.9	- 1.5
2019	2.3	3.8	- 4.5	- 1.5

Sources: IHS Markit, Executive Summary, U.S. Economy Outlook, May 2020;
U.S. Census, Value of Construction Put In Place, April 2020.

¹Value of Construction Put in Place, private sector.

²Residential fixed investment, new and renovation, single- and multi-family.

A number of factors contributed to slow down residential investment in 2019 and this slowdown was also reflected in slower GDP growth. The multiplier acceleration effects of construction outlays, and especially residential construction outlays, can work both ways: they can drive GDP to higher growth rates when residential construction outlays are accelerating or they can dampen GDP growth or even contribute to its contraction when residential construction outlays declining.

Impacts of Residential Construction on
Total Output, Personal Earnings, and Jobs

Residential construction multipliers are among the highest among all industrial sectors.

Private sector residential construction outlays in 2019 totaled \$515.4 billion, as reported in the U.S. Census report Value of Construction Put in Place. As noted previously, this value only reflects labor, materials, overhead, and incidental outlays occurring concurrently in support of this construction activity within the year being reported. The reported construction value excludes related and supporting site development, infrastructure, landscaping, sales, marketing and closing, furnishings, and moving outlays. These ancillary outlays are linked directly to these residential construction outlays—they would not have occurred in the absence of this residential construction activity. In spite of these exclusions, the residential construction multipliers are among the highest among all industrial sectors reflecting its broad-based interdependences within the economy that spread the economic benefits generated by the residential construction expenditures.

Each \$1 in residential construction contributes a total of \$3.08 to the U.S. economy (GDP). As a result of this multiplier effect, the \$515.4 billion in residential construction outlays contributed a total of \$1.6 trillion to GDP in 2019, accounting for 7.4 percent of GDP. These direct residential construction outlays also generated \$558.9 billion in new (and taxable) personal earnings—labor income—and supported 11.2 million jobs directly and indirectly across all sectors of the economy.

To illustrate the total impacts of all direct and ancillary residential construction outlays assume that direct construction outlays account for one-half of all directly related expenditures generated in support of or coincidental to residential construction activity; that is, reported residential construction outlays exclude soft costs, site development costs, marketing, sales and closing costs, and occupancy costs

(furnishings, utility hook ups and moving). For comparison, this percentage of ancillary outlays (excluding moving in costs) linked to hard costs for commercial construction is 48 percent. With an aggregate multiplier of 2.5168 for these ancillary costs, they would have contributed a total of \$1.297 trillion to GDP in 2019.

As shown in Table 2, the full economic impact of residential construction in 2019—reflecting all the horizontal and vertical linkages and independencies of the residential construction industry—would have totaled \$2.9 trillion and accounted for 13.5 percent. Additionally, these combined outlays would have supported 19.9 million jobs and generated \$932.6 billion in new personal earnings.

Table 2
The Economic Impacts of Residential Construction in 2019
(in billions of current dollars, jobs in millions)

Source	Direct Outlays	Total Output	Personal Earnings	Jobs Supported
Residential Construction ¹	\$515.4	\$1,587.3	\$558.9	11.2
Ancillary Outlays ²	<u>\$515.4</u>	<u>\$1,297.2</u>	<u>\$373.7</u>	<u>8.7</u>
Totals	\$1,030.8	\$2,884.5	\$932.6	19.9

Sources: U.S. Census, Value of Construction Put in Place, May 2020
Bureau of Economic Analysis, RIMS II, Type II, Table 1.5.

¹direct residential construction outlays, U.S. Census.

²includes estimated soft costs, site development and infrastructure costs, marketing, sales and closing costs, utilities hook up, furnishing and moving directly linked to new construction that are excluded from the Value of Construction Put In Place; these are estimated here at 50% of total combined outlays for illustrative purposes.

While the exact magnitude of these ancillary outlays is not officially reported, there is no disputing that these outlays do occur and would not have occurred in the absence of new residential construction. Recognizing this full range of residentially related outlays provides a more complete measure of the residential construction industry’s full magnitude and relative importance to the U.S. economy’s growth and vitality.

In addition to the magnitude of the industry’s annual direct, indirect and induced outlays and the personal earnings they generate and jobs they support, the sectoral interdependencies of this industry span a wide range of integrated businesses and skills sets and extend vertically from land acquisition, project planning, building design, regulatory and review processes, land development, construction, professional and business services supporting sales and closings, with these economic benefits spreading throughout the consumer services sectors as finished

housing units are furnished and their occupants move in. In the life cycle of new residential units, these construction outlays are the beginning of a long life spanning many decades during which the residential units built in 2019 will continue to generate additional GDP value as they age and are maintained and repaired, modernized and renovated, resold or re-rented, and refurnished.

Residential Investment Can Quickly Shape the Trajectory of GDP Recovery

The complexity of the residential construction industry and the life cycle of the housing stock, as referenced above, make its associated economic impacts important as both a catalyst and an accelerator of economic growth. The residential construction industry, with one of the largest GDP multipliers among all industry sectors combined with an above-average value per worker contribution to GDP and high jobs multiplier, represents a potent economic force with the potential to positively and quickly impact the national economy’s performance.

National economy performance is highly correlated with the performance of the residential construction industry.

How the national economy performs is highly correlated with the performance of the residential construction industry. During the most recent business cycle, the residential construction industry out-performed the annual performance of GDP. When residential construction spending slowed in 2019, GDP growth also slowed. While this is not the only reason GDP slowed, GDP would clearly have grown faster had residential fixed investment been stronger. For GDP to sustain a growth trajectory requires an upward trajectory in residential fixed investment and residential starts. This pattern is clear (Table 2) and should inform policymakers as they consider how to reaccelerate economic growth as the national economy emerges from its historically sharp and rapid contraction in response to severe disruptions in the global and U.S. economies by COVID-19.

Current projections, presented in Table 3, underscore the importance of accelerating residential fixed investment as part of the solution to the nation’s current economic crisis. With a more rapid increase in residential fixed investment and housing starts, GDP would accelerate more quickly as the return on a dollar invested in residential construction, with its 3.02 multiplier, will accelerate GDP growth more than the same dollar invested in almost any other industry.

Table 3

Recovery from the COVID-19 Recession, 2020-2022
(annual real percent change)

Year	GDP	Residential Fixed Investment	Housing Starts ¹

2020	- 7.3	- 11.2	- 24.4
2021	5.1	4.9	- 17.1
2022	4.6	8.9	- 3.6

Source: IHS Markit, Executive Summary, U.S. Economic Outlook, May 2020

¹percent reduction from housing starts projections in IHS March baseline forecast.

Supply remains tight with pent-up demand in the market.

Today, residential market conditions can support higher rates of residential development. As noted previously, residential housing starts slowed in 2019 (underperformed beginning-of-the-year projections) and, in fact, have lagged demand in many markets across the United States dating back to the slow recovery from the Great Recession. This slower trajectory in residential starts has generated pent-up demand, especially in starter homes and for housing units sized for household with children. This shortage of new residential units has also resulted in demand-pressured price increases that have exceeded the growth of household incomes, even as the U.S. economy accelerated in 2018. These historic market patterns, combined with the dramatic decline in the economy attributed to the COVID-19 pandemic during the first half of 2020, suggest that residential construction is well positioned for rapid acceleration and that demand for housing, supported by historically low mortgage interest rates, has the potential to rapidly increase and could help lead the U.S. economy out of the current recession.

Residential construction can boost state and local tax revenue.

Beyond these important benefits that accrue to the U.S. economy—contribution to and acceleration of GDP growth, generation of new personal earnings, and growth in jobs—from residential fixed investment, homebuilding can strengthen its host localities’ fiscal bases. Research has shown that new residential construction on average, with its higher assessed valuation per square foot than the existing stock, generates a positive fiscal benefit; that is, its local fiscal benefits exceed its fiscal costs. In this time of declining sales, transient occupancy and other local tax revenues, growing the property tax base could quickly strengthen the fiscal foundations of these local jurisdictions.

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