

Introduction

Since 2008, NAIOP has conducted this study for purposes of estimating the annual economic contribution of commercial real estate development to the U.S. economy. The study uses key data sets from the U.S. Census Bureau and Dodge Data & Analytics (formerly McGraw-Hill Construction). (Dodge Data & Analytics, which purchased McGraw-Hill Construction, made no changes to its data or data capture methodologies.) It applies several processes and methodologies to take “snapshots” of the commercial real estate development industry from various angles and across several scales.

At the greatest scale, the study calculates the contribution of building and nonbuilding construction to the U.S. economy for the year in review. The product types included in this broad measure are residential, nonresidential and infrastructure projects in the construction pipeline, based on U.S. Census data on the value of construction put in place. Appropriate multipliers supplied by the Bureau of Economic Analysis are applied to reflect the effects of construction expenditures on U.S. gross domestic product (GDP), the associated generation of new personal earnings and the jobs supported by these direct expenditures. (See Table 1.)

Table 1
Economic Contributions From Building and Nonbuilding Construction

Year	Direct Expenditures (In Billions of Dollars)	Total Economic Contribution ¹ to GDP (In Trillions of Dollars, Includes Multiplier Effect)	Percent Contribution to U.S. GDP	Personal Earnings ² (In Billions of Dollars, Excludes Multiplier Effect)	Jobs Supported ³ (In Millions, Includes Multiplier Effect)
2014	\$960.2	\$2.95	16.9%	\$935.1	22.4
2013 ⁴	910.8	2.80	16.7	887.0	21.3
2012	857.0	2.65	16.3	836.9	20.1
2011	787.4	2.27	15.0	677.0	17.2
2010	803.6	2.31	15.9	691.0	17.6
2009	907.8	2.90	20.5	870.0	24.0
2007	1,160.0	3.97	28.8	1,225.0	33.2

Sources: U.S. Census, Value of Construction Put in Place; GMU Center for Regional Analysis

¹ The total value of goods and services generated directly and indirectly as a result of construction and related expenditures within the U.S.

² The additional earnings (wages and salaries) generated within the U.S. from construction and related expenditures.

³ The jobs supported by the spending and re-spending of direct expenditures for all phases of development and operations.

⁴ Revised 2013 data for construction spending and GDP.

Note: Data includes residential and nonresidential buildings as well as infrastructure such as water, sewer, highways and power.

Zeroing in exclusively on commercial real estate — the core of this study — the analysis begins with Dodge Data & Analytics data relating to square footage and values for office, industrial, warehouse and retail projects. It examines expenditures made during four distinct phases of the development process, including pre-construction (soft costs), site development, on-site construction (hard costs) and tenant improvements. (Financing fees, insurance and taxes are not included in this analysis within the soft construction category, because they have little immediate economic impact.)

This study also examines the contribution of building operations, which are reported as a stand-alone phase that follows development. The impacts are shown for the estimated 443.2 million square feet of buildings constructed in 2014.

Appropriate multipliers are applied to the direct expenditures to calculate the contribution to U.S. GDP, personal earnings and jobs supported during each distinct development phase. Apartment and hotel properties are not included in these calculations. (See Table 2.)

The full measure of the economic impact of office, industrial, warehouse and retail construction includes all of the expenditures associated with each phase of the development process. In addition to the wide range of on-site construction services, these expenditures also support a wide range of professional and business services, including:

- Architecture and engineering services.
- Legal services.
- Marketing and management services.
- Grading, paving and landscaping services.
- Site engineering services.
- Interior design and construction services.

This combination of spending for pre-construction, construction and post-construction activities required to deliver buildings ready for occupancy represents the development industry's total direct contribution to the national, state and local economies. It provides the appropriate basis for calculating the economic impacts of this spending as represented by its contribution to GDP, personal earnings (wages and salaries) and employment.

Table 2
Economic Contributions to the U.S. Economy from Development of Commercial Real Estate Buildings

		Development Phases					Operations Phase
		Pre-Construction	Construction			Totals	Post-Construction
		Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements		Building Operations
		architecture, engineering, legal, marketing, management, administration	grading, paving, landscaping, roadway, parking, off-site improvements	labor, materials, construction management	interior design and construction (excludes furniture and equipment)		maintenance, repairs, custodial, utilities, property management
Direct Expenditures (In Billions of Dollars)	2014	\$27.64	\$28.56	\$87.76	\$30.35	\$174.31	\$1.34
	2013	19.66	21.07	61.65	21.84	124.22	1.11
	2012	15.88	17.34	49.18	17.73	100.13	0.96
	2011	13.42	15.45	47.83	15.58	92.28	0.80
	2010	13.11	13.99	41.72	13.05	81.87	0.73
In 2014, direct expenditures of \$174.31 billion contributed \$528.09 to U.S. GDP.							
Total Economic Contribution¹ to GDP (In Billions of Dollars, Includes Multiplier Effect)	2014	75.54	88.12	270.77	93.66	528.09	3.71
	2013	53.73	65.00	190.22	67.40	376.35	3.07
	2012	43.39	53.51	151.75	54.71	303.36	2.64
	2011	34.37	44.53	137.82	44.91	261.63	2.05
	2010	33.58	40.30	120.21	37.61	231.70	1.86
In 2014, direct expenditures of \$174.31 billion generated \$168.42 billion in personal earnings in the U.S.							
Personal Earnings² (In Billions of Dollars, Includes Multiplier Effect)	2014	25.18	27.89	85.70	29.65	\$168.42	1.17
	2013	17.91	20.57	60.21	21.33	120.02	0.97
	2012	14.46	16.94	48.03	17.32	96.75	0.83
	2011	11.23	13.29	41.15	13.40	79.07	0.61
	2010	10.97	12.03	35.89	11.23	70.12	0.54
In 2014, direct expenditures of \$174.31 billion supported 3.94 million jobs in the U.S. economy.							
Jobs Supported³ (Includes Multiplier Effect)	2014	508,712	668,953	2,055,112	710,831	3,943,608	29,398
	2013	361,866	493,314	1,443,779	511,530	2,810,510	24,285
	2012	292,219	406,107	1,151,784	415,236	2,265,346	20,929
	2011	259,805	339,156	1,049,630	341,981	1,990,572	15,600
	2010	253,838	306,953	915,518	286,413	1,762,722	12,114

Sources: NAIOP; Dodge Data & Analytics; GMU Center for Regional Analysis

¹ The total value of goods and services generated directly and indirectly as a result of construction and related expenditures within the U.S.

² The additional earnings (wages and salaries) generated within the U.S. from construction and related expenditures.

³ The jobs supported by the spending and re-spending of direct expenditures for all phases of development and operations.

Note: Data includes office, industrial, warehouse/flex and retail buildings under construction in the year indicated and excludes existing inventory. Operations figures are based on buildings delivered in the year indicated.

This study includes the economic contributions of existing buildings. Based on the existing stock of commercial buildings, totaling 44.2 billion square feet in 2014, direct expenditures totaled \$138.4 billion and contributed \$382.3 billion to GDP. These direct expenditures also generated \$120.4 billion in personal earnings (wages and salaries) and supported a total of 3.3 million jobs. (See Table 3.)

Combining the economic contributions of new development with the operation of existing buildings in 2014, direct expenditures of \$312.7 billion resulted in the following economic contributions to the U. S. economy:

- Contributed \$910.4 billion to U.S. GDP.
- Generated \$288.8 billion in personal earnings.
- Supported a total of 7.0 million jobs.

Year	Total Square Feet (In Billions)	Direct Expenditures for Building Operations	Total Economic Contribution ¹ to GDP	Personal Earnings ²	Jobs Supported ³ (In Millions)
2014	44.200	\$138.4	\$382.3	\$120.4	3.031
2013	43.934	134.3	370.9	116.8	2.941
2012	43.208	134.5	371.5	117.0	2.945
2011	42.098	140.7	366.6	107.6	2.758
2010	42.008	134.8	342.4	100.2	2.413

Sources: BOMA; CoStar; Transwestern; GMU Center for Regional Analysis

¹ The total value of goods and services generated directly and indirectly as a result of building operating expenditures within the U.S.

² The earnings generated within the U.S. from direct expenditures for building operations.

³ The jobs supported by the spending and re-spending of direct outlay associated with building operations.

Note: Building operations include maintenance repair, cleaning, utilities, security, building management and administrative expenses; column values may not add up to overall totals due to rounding; see Appendix G for state and building type data.

Executive Summary

To an economist, buildings are much more than structures providing shelter. They are structures that create economic capacity for businesses. While the economic contributions accruing from the actual construction phase for new buildings are widely understood and valued, the pre-construction and post-construction impacts of the development process often are overlooked and undervalued.

Likewise, the job growth and income generated and supported by annual building operations represent a continuing flow of expenditures into local, state and national economies that extend over the life of the structures. These new buildings represent an expansion of the productive capacity of their local economies and serve as enablers that further enlarge the local, state and national economies. The jobs and output associated with the newly built capacity generate significant annual economic and fiscal benefits (e.g., tax revenues) at all governmental levels. Because these post-construction benefits are cumulative, their economic impacts become increasingly significant to the economy's growth.

Summary of Construction Activity

The commercial construction sector continued its recovery in 2014 after first showing signs of a rebound in 2011, following several consecutive years of decreased spending from its peak in 2008. The 2014 gains spanned most commercial building types and have generated increased construction employment. Forecasts for 2015 project accelerating construction spending, with single-digit gains in fixed investment in commercial structures such as office, retail, health care and distribution facilities. These positive trends in construction spending, especially in office, retail, health care and warehouse buildings, are projected to gain further strength in 2016 and 2017.

The contribution of construction spending to the U.S. economy is well understood. This linkage between the national economy's accelerating expansion and the recovery of residential and nonresidential construction spending was particularly evident in 2013. It accelerated in 2014 and is projected to grow even faster in 2015 and 2016, as the U.S. economy's expansion gains momentum. The construction industry is expected to continue growing at mid-single digit rates after 2017, at least until the end of the current decade. With the direct and indirect impact of construction spending on the U.S. economy (GDP) in 2014 totaling \$2.95 trillion and accounting for 16.9 percent of GDP, the accelerating growth of construction spending that began in 2011 will provide an important boost to the economy's growth rate during the next several years. That is, the growth rate for construction spending will exceed the GDP growth rate annually for at least the next five years.

Measuring Economic Value. To fully understand the impact of development expenditures on the performance of the national, state and local economies, one must identify and measure the range and composition of activities and associated spending and their interdependencies with the economy's other sectors. The economic value of commercial buildings extends well beyond their initial construction value, and even this construction value is often understated. In order to establish the comprehensive measure of this value, it is necessary to understand that the process of creating the built environment is carried out in a logical sequence, and the underlying elements in each phase must be examined to determine the full expenditures associated with commercial buildings. These key phases consist of the following:

- Pre-construction (soft costs), including design, engineering, legal and other processes.
- Construction, including site development, building activity (hard costs) and tenant improvements.
- Post-construction, including ongoing building operations.

Direct spending during these three development phases provides the foundation for calculating the contribution of development to the national economy as well as to respective state and local economies.

Five expenditure types are examined to determine the monetary expenditures associated with development, construction and operations. These consist of the following:

- Soft construction costs (architecture, engineering, marketing, legal, management, administration).
- Site development costs (grading, paving, landscaping, roadway, parking, off-site improvements).
- Hard construction costs (labor, materials, construction management).
- Tenant improvements (interior design and construction, excluding furniture and equipment).
- Building operations (maintenance, repair, custodial services, utilities, property management).

The direct spending for development and operations generates additional jobs and increases payrolls. These dollars are re-spent within the local, state and national economies, generating additional economic benefits. The total economic impact of these direct development-related expenditures can be calculated by applying national, state and local multipliers. These multipliers measure the far-reaching effects of the initial expenditures on the overall U.S. economy as these initial expenditures are recycled/re-spent within the economy. Using the multipliers, this report calculates the following:

- Total economic contribution to the U.S. economy (GDP).
- New personal earnings (wages and salaries) generated.
- Jobs supported throughout the U.S. economy, including direct construction jobs.

The “jobs supported” figures do not equate only to net new jobs; they include both new and existing jobs in the economy needed to support the 2014 level of development, construction and operations reported herein.

Combined, the pre-construction, construction, and operations phases — and their associated economic impacts — represent commercial real estate development’s enduring financial strength and compounded contribution to the economy. The economic contributions associated with new office, industrial, warehouse and retail development in 2014 are summarized in Table 2.

The Importance of the Construction Sector to U.S. GDP. In 2014, construction spending nationwide for residential and nonresidential buildings and nonbuildings (e.g., roads, bridges, pipelines) totaled \$960.2 billion and, when multiplied to reflect its full contribution, accounted for 16.9 percent of GDP. (See Table 1.) This spending level was below its high in 2007, when construction spending totaled \$1.16 trillion and accounted, with the full multiplier effect, for 28.8 percent of GDP. The importance of the construction sector to the vitality of the national economy is illustrated by the 30.0 percent decline in construction spending between 2006 and 2010 and the 2.2 million construction jobs lost during that period.

Beyond those construction jobs, this decline in construction spending negatively impacted employment across the broader economy, most visibly in the manufacturing, professional and business services, and retail sectors. Decreased employment brought about declining personal earnings across all sectors as payroll expenditures fell during the building industry’s long recession.

The construction sector's recovery, beginning in mid-2011, established the foundation for the forecasts for the U.S. economy going forward. However, this recovery lost momentum in 2013, as the global economy continued to struggle with its recovery (especially in Europe) and the U.S. economy digested changes in fiscal policy and federal spending reductions. The U.S. economy registered a sharp first-quarter contraction at the start of 2014, due in part to severe winter weather combined with weakening economic performance in Asia and Europe. However, GDP bounced back in the second and third quarters, registering their highest growth rates since before the recession. For the year, GDP gained 2.4 percent despite its first-quarter decline and was boosted by increased consumer confidence and increasing consumer spending in response to a rapid decline in energy prices during the second half of 2014. These favorable conditions have raised the GDP forecast for 2015 to 3.0 percent, possibly its best one-year performance of the decade. With interest rates expected to begin rising before the end of 2015 and Brent Crude oil prices projected to increase from their low of \$55.30 per barrel on average in 2015 to an average of \$65.50 per barrel in 2016, GDP growth is expected to moderate slightly in 2016 and remain positive at least to 2020.

Table 4
Total U.S. Construction Spending, 2010–2014
(In Billions of Current Year Dollars)

Type	Value	Percent Change 2013-2014
Residential Building		
2014	\$354.1	3.5%
2013 ¹	342.2	
2012	286.5	
2011	244.4	
2010	248.7	
Nonresidential Building		
2014	\$362.1	7.1%
2013 ¹	338.2	
2012	336.7	
2011	312.7	
2010	327.1	
Nonbuilding ²		
2014	\$244.0	5.9%
2013 ¹	230.4	
2012	233.8	
2011	230.3	
2010	227.8	
Total		
2014	\$960.2	5.4%
2013¹	\$910.8	
2012	857.0	
2011	787.4	
2010	803.6	

Source: U.S. Census, Value of Construction Put in Place

¹Revised 2013 data for construction spending and GDP.

²Includes infrastructure such as water, sewer, highways and power.

Note: Column values may not add up due to rounding.

Office, Industrial, Warehouse and Retail Hard Construction Spending Grows for a Fourth Year. At the pre-recession peak in 2007, hard construction expenditures totaled \$96.2 billion and accounted for 875.6 million square feet of new office, industrial, warehouse and retail building space. (See Table 5.) During the next three years, hard construction spending declined by 55.4 percent and the amount of space constructed declined by 73.3 percent.

Hard construction spending reversed this downward trend in 2011, when it increased for the first time since 2007. This recovery has continued each

year since. In 2014, hard cost expenditures for office, industrial, warehouse and retail development increased to \$87.8 billion for a gain of 33.6 percent from the revised spending level reported for 2013. A total of 443.2 million square feet of building space was added to the inventory in 2014, representing an increase of 10.6 percent over the revised building space additions in 2013.

Table 5
Office, Industrial, Warehouse and Retail Construction

Year	Value (In Billions of Current Year Dollars)	New Square Feet (In Millions)
2014	\$87.8	443.2
2013	66.7	400.6
2012	52.8	333.2
2011	53.3	262.3
2010	42.9	233.6
2009	47.7	273.1
2008	91.0	640.1
2007	96.2	875.6

Source: Dodge Data & Analytics

Note: The annual totals reported for 2007 to 2014 have been revised from previous years to reflect improved methods of data collection.

As the U.S. economic recovery began to expand in 2010, hard construction spending has generated important economic benefits and has helped drive the economy's growth, beginning in mid-2011, with the generation of 43,000 direct construction jobs during the last half of the year. Since 2011, continuing growth of construction spending has added a total of 578,000 net new direct construction jobs through 2014. The growth of construction spending has stimulated job growth in supported industries. The accumulated effects of this direct, indirect and induced job growth are reflected in the trends in total job growth nationally. These turned positive in 2011, following a 0.7 percent decline in 2010 and, according to the U.S. Bureau of Labor Statistics, have increased each year since: up 1.2 percent in 2011, 1.7 percent in both 2012 and 2013 and 1.9 percent in 2014. Total employment in the U.S. is projected by IHS Inc. to increase 2.3 percent in 2015.

As shown in Table 2 on page 6, the effects of \$87.8 billion in hard construction expenditures added \$270.8 billion to the national economy (GDP) in 2014, as the full impact of these hard construction expenditures (payroll and purchases) circulated through the economy. This hard construction spending supported 2.1 million jobs (full-time, year-round equivalent) across all sectors of the economy, generating personal earnings totaling \$85.7 billion. This hard construction spending accounted for 50.4 percent of total spending for office, industrial, warehouse and retail building development in 2014.

The other 49.6 percent of total development-related expenditures included soft construction (soft costs), site development and tenant improvement costs. In 2014, this development-related spending totaled an estimated \$86.5 billion. It also:

- Contributed \$257.3 billion to U.S. GDP.
- Generated \$82.7 billion in new personal earnings.
- Supported a total of 1.9 million jobs.

The combined economic contributions of the expenditures made during all four phases of development added 443.2 million square feet of new office, industrial, warehouse and retail building space to the existing inventory during 2014. It also:

- Contributed \$528.1 billion to U.S. GDP.
- Generated \$168.4 billion in new personal earnings.
- Supported a total of 3.9 million jobs that spanned the full breadth of the economy.

Contributions of Building Operations in 2014.

In addition to the significant contribution to GDP and job and income growth nationwide that constructing 443.2 million square feet of new building space represents, these buildings continue to provide economic benefits to their economies long after construction is completed. These economic impacts include spending required to maintain and operate the buildings and the value of the work done in them. The operating expenditures associated with the office, industrial, warehouse and retail space built in 2014 are estimated to total \$1.3 billion annually. This direct spending for building operations will:

- Add \$3.7 billion to U.S. GDP.
- Generate \$1.2 billion in new personal earnings.
- Support 29,398 new jobs.

These operating expenditures are annual and recur yearly over the life span of the building. Adding these new operating expenditures to those required to operate the total 44.2 billion square foot inventory of office, retail and industrial/flex building space in 2014 brings this operating expenditure total to \$139.5 billion with an overall contribution to GDP totaling \$385.4 billion. These total operating expenditures would support 3.05 million jobs nationwide with personal earnings (wages and salaries) of \$121.4 billion.

Jobs Housed in Net New 2014 Space. Similarly, the potential productive value of these new building spaces represents a significant annual contribution to the local, state and national economies. The actual total output value of this new space is the sum of the values of the work done in these buildings. A partial measure of this total value is represented by the jobs that could be housed in this space and the earnings that these jobs may generate. Using updated jobs-per-square feet estimates reflecting current occupancy patterns and current average salary levels, this new space would have the capacity to house 1.137 million jobs with an annual payroll of \$55.2 billion. (See Table 18 on page 33.)

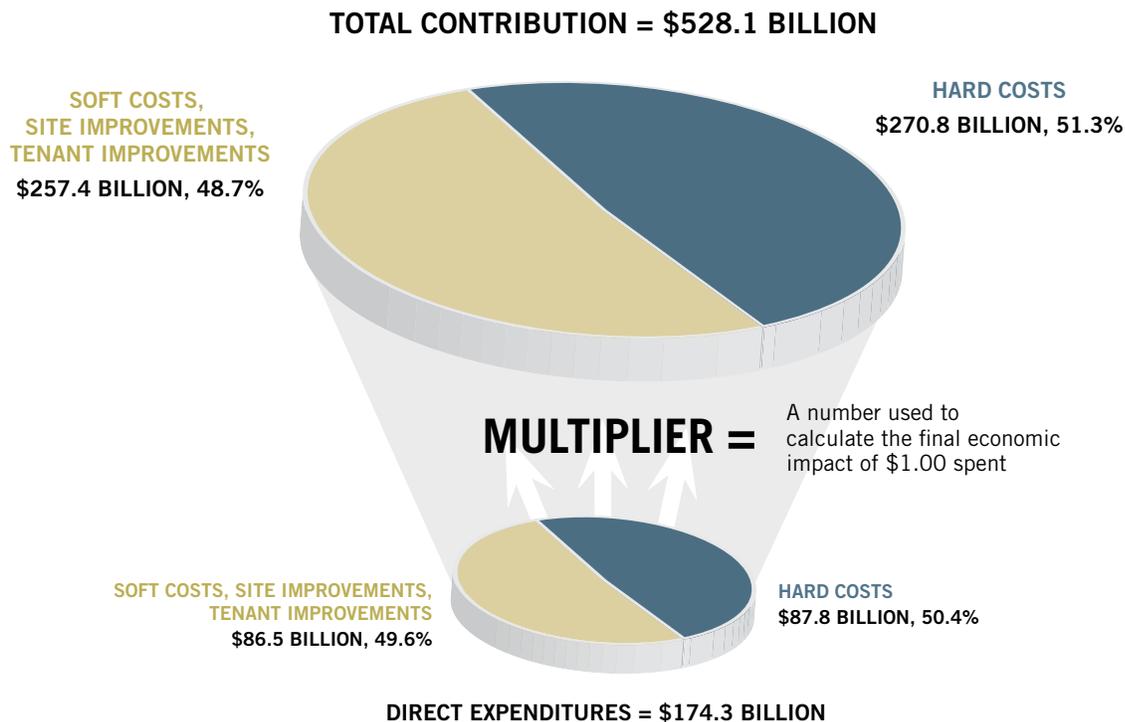
Outlook: Construction Spending and U.S. GDP.

The strength of the U.S. economy's recovery is directly linked to the pace of recovery experienced by the construction sector, both residential and nonresidential. As construction expenditures move toward normal levels between 2014 and 2015, the U.S. economy's growth rate is projected to increase from 2.4 percent in 2014 to 3.0 percent in 2015 and continue its expansion at least through 2020, according to IHS (March 2015). Building on the gains in residential construction spending and increased nonresidential construction expenditures in retail, manufacturing, office, accommodations and recreation and warehouse buildings in 2014, these broad-based gains extended the national recovery to a fifth year and established the foundation for what is currently projected to be the strongest one-year performance of the decade in 2015.

With projections from IHS Economics that both residential and nonresidential (retail, office, health care facilities and warehousing) construction expenditures will accelerate in 2015, the U.S. economy will experience stronger growth in spite of growing headwinds resulting from weaker exports due to the growing strength of the dollar against the euro and other major trading currencies. Both GDP and employment growth rates are projected to attain their highest levels of the current business cycle in 2015, as increases in residential and nonresidential construction expenditures combine to generate significant new capital spending and job growth. Going forward, the U.S. economy cannot achieve a sustained expansion in the absence of the construction industry's full recovery, which currently is projected to be achieved in 2017.

The analyses presented in this report define the economic impacts of the nonresidential building construction industry, highlighting the economic impacts flowing from office, industrial, warehouse and retail construction and operations. As the economy continues to grow, it is important for government officials at all levels — as well as investors, developers and builders — to understand the range and magnitude of the construction industry's contributions to the national, state and local economies; their patterns of performance during the business cycle; and the direct correlation between the magnitude and length of the expansion and the health and performance of the building industry.

Figure 1
How Commercial Building Development Contributed to the U.S. Economy in 2014

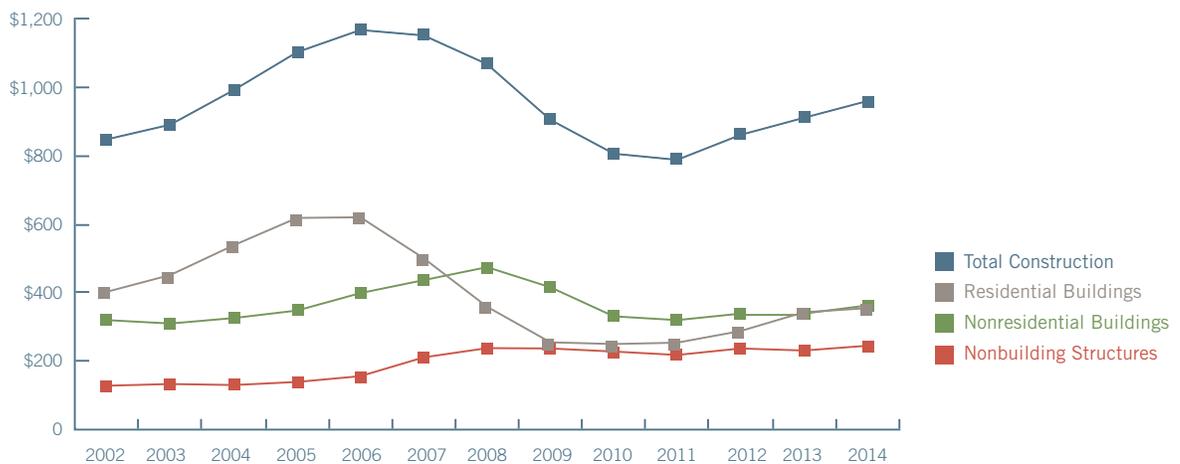


Construction Sector Trends and Outlook

The Great Recession began in December 2007 and ended in June 2009. Although the economy will have been in recovery for a full six years by June 2015, the consequences of the recession remain evident. Many sectors have not recovered the jobs lost during the downturn, and their growth has been uneven from quarter to quarter. While employment growth accelerated in 2014 and has exceeded 200,000 net new jobs per month for a full year, the types of jobs being generated have had a lower GDP-value per job than the jobs that were lost during the recession, resulting in lower average household incomes each year since 2010. Unemployment has declined faster than projected in 2014, but this has raised concerns that wage inflation will become a factor impacting the economy's performance in 2015, along with higher interest rates.

Construction was one of the hardest-hit sectors during the recession. The value of total construction put in place, according to data provided by the U.S. Census, decreased from \$1.167 trillion to \$778.2 billion, a decline of 33.3 percent, from its peak in 2006 to the bottom of the business cycle (for the construction sector) in 2011. The value of residential construction declined 60.2 percent from its peak in 2006 to its trough in 2011. For non-residential construction (buildings and nonbuildings), the value of construction activity peaked in 2008 and declined 25 percent over three years to 2011, when construction spending began the recovery that registered a solid gain of 5.4 percent in 2014. (See Figure 2.)

Figure 2
Construction Spending in the U.S., 2002-2014
 (In Billions of Current Dollars)



Source: U.S. Census, Value of Construction Put in Place

Construction Sector Growth Accelerates in 2014. It has taken five years of recovery in the national economy to bring the construction sector to a point that supports continuing year-over-year increases in construction spending. In 2014, the total value of construction put in place was 21.8 percent greater than construction spending in 2011. But not all types of construction spending are growing at the same rate. The value of residential construction spending increased 40.1 percent between 2011 and 2014, while the value of nonresidential building construction expenditures increased 13.5 percent. Nonresidential nonbuilding construction spending (infrastructure) increased 12.6 percent over this three-year period.

Current forecasts by IHS Economics show the construction sector continuing its upward trend in the value of construction put in place, although different building types will experience different performance patterns. Residential construction is projected to increase each year (starts and residential fixed investment), at least until 2020, with peak construction spending occurring in 2016. In contrast, nonresidential building construction spending presents an uneven growth trend that is being impacted by some weakness in manufacturing and energy-related construction in 2015 and 2016, while construction spending for retail, office and health care buildings is projected to remain strong in 2015, peak in 2016 and 2017 and continue to grow through at least 2020.

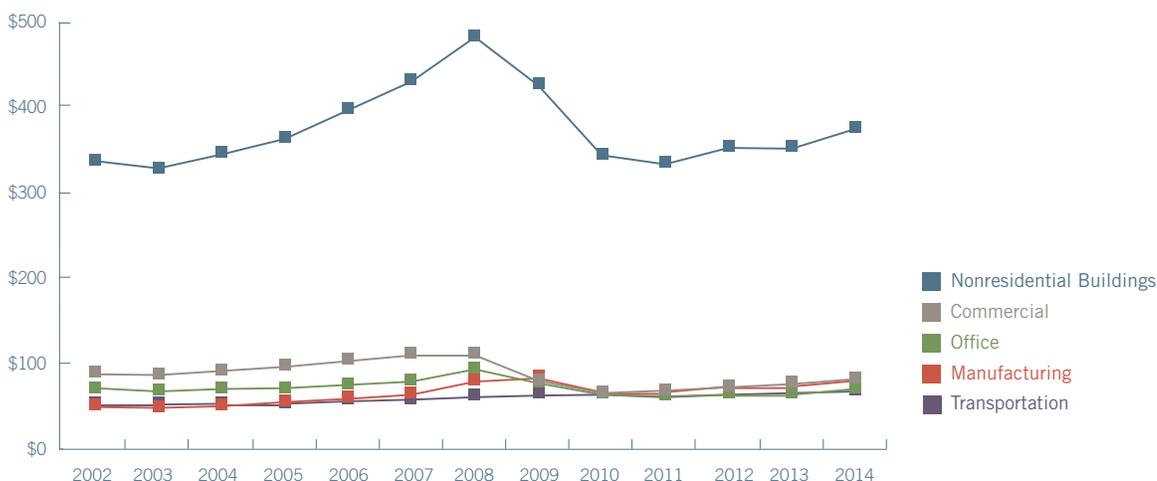
Residential Construction Improves. Figure 2 illustrates these patterns of total construction spending by major category over the business cycle. Residential construction spending peaked as a percentage of total construction spending in 2005 at 56 percent, with its share declining each subsequent year to 2009, when it reached 28.1 percent. After bottoming out in mid-2011,

residential construction has regained share. By 2014, residential construction spending accounted for 36.9 percent of total construction (both building and nonbuilding).

Nonresidential Construction Rebounds in 2014. The value of nonresidential building construction peaked in 2008. In 2009, nonresidential building construction spending declined by 12.8 percent. This contraction accelerated in 2010, with the value of new nonresidential construction decreasing 20.7 percent. During this three-year period (2008-2011), the value of nonresidential construction declined 33.9 percent. This pattern of decreasing construction spending slowed to 4.4 percent in 2011 and, for several building types, turned positive. Nonresidential building construction spending increased in 2011 and 2012 but held steady in 2013 before registering a solid 7.1 percent gain in 2014.

As shown in Figure 3, construction spending for four categories of nonresidential building types — office, retail, transportation (which, in the U.S. Census data set, includes warehouse properties) and manufacturing — has tracked a relatively smooth pattern through each category's respective growth cycle. Since the bottom of the cycle in 2011, total construction spending for 10 nonresidential building types (see Table 6) has increased 14.0 percent. Over this period, four building types — health care, education, public safety and religious — have experienced a decrease in construction spending, while strong gains have been registered by retail (31.2 percent), manufacturing (33.6 percent), office (28.9 percent), lodgings (83.0 percent) and transportation, which includes warehouse (20.0 percent). The performance of these nonresidential building types is shown in Figure 3 and in Table 6.

Figure 3
Nonresidential Construction Spending in the U.S., 2002-2014
 (In Billions of Current Dollars)



Source: U.S. Census, Value of Construction Put in Place

Table 6
U.S. Nonresidential Construction Spending, 2011-2014
 (In Billions of Current Year Dollars)

Type of Structure	2011	2012	2013 ¹	2014	% Change 2011-2014
Transportation	\$34.9	\$38.2	\$39.7	\$41.9	20.0%
Health Care	39.7	41.8	41.5	39.0	-1.8
Retail	43.6	46.3	51.0	57.2	31.2
Manufacturing ²	41.4	46.8	47.9	55.3	33.6
Amusement/Recreation	16.2	15.0	15.5	16.7	3.1
Education	84.3	84.6	78.0	78.4	-7.0
Public Safety	10.2	10.3	9.7	9.3	-8.8
Office	34.6	38.4	37.6	44.6	28.9
Religious	4.2	3.8	3.7	3.6	-14.3
Lodgings	8.8	11.4	13.6	16.1	83.0
Total³	\$317.6	\$336.7	\$338.2	\$362.1	14.0%

Source: U. S. Census, Value of Construction Put in Place

¹ Revised 2013 data.

² Includes warehouse/flex space.

³ Totals include some miscellaneous state and local government buildings, but exclude spending for nonbuilding construction on items such as communications, power, highways, sewer and water.

Outlook: Residential and Nonresidential

Construction. The U.S. economy completed its sixth year of recovery in June 2015, a recovery that has been characterized by slow and uneven growth rates in both jobs and income, a slowly declining unemployment rate and a slow recovery of the residential and nonresidential construction sectors. 2014 was the first year of this long recovery in which job growth exceeded 3 million jobs for the year and unemployment declined a full percentage point, from 6.5 to 5.5 percent, a rate still well above the 4.6 percent achieved before the recession in 2007. Increases in consumer confidence and lower energy costs are expected to contribute to increased consumer spending in 2015 and stronger overall economic activity, as measured by GDP. Countering the economic conditions that are supporting faster growth are several forces that could undercut growth, including higher interest rates and a weaker dollar that is making exports more expensive and imports cheaper.

Residential building construction spending has increased each of the last three years, beginning in 2011, and is up 40.1 percent over this period. Multifamily housing construction has increased its share of residential construction spending during this recovery and is expected to retain a larger share of residential construction spending even after single-family housing construction increases towards its equilibrium level over the next three years. Current forecasts by IHS Economics (March 2015) indicate that residential construction spending is projected to increase 8.3 percent in 2015 after increasing a disappointing 1.6 percent in 2014. Residential fixed investment had grown 13.5 and 11.9 percent, respectively, in 2012 and 2013. IHS Global Insight is projecting healthy gains in residential fixed investment in 2016 (up 14.3 percent) and in 2017 (up 8.3 percent).

The projected pattern of residential construction points to annual housing starts increasing to 1.18 million in 2015 from 1.01 million starts in 2014, for a gain of 18.1 percent. Housing starts are projected to increase to 1.353 million units in 2016 and 1.480 million in 2017. Current forecasts have residential building peaking

in 2020 at 1.63 million starts and attaining equilibrium at 1.5 to 1.6 million units in 2019 and 2020. This is two years later than had been projected a year ago, underscoring the slower pace of growth in residential construction than has been expected dating back to the early years of the recovery. Increasing 30-year fixed home mortgage rates, projected to rise to 5.89 percent by 2018 from their current levels of less than 4.0 percent, will contribute to this slower recovery of residential construction during the remainder of this business cycle.

Nonresidential construction expenditures turned positive in 2011 and increased by 6.1 percent in 2012, held almost steady in 2013 and then registered a solid gain of 7.1 percent in 2014. Forecasts for 2015 confirm an uneven pattern of investment across the broad range of building types. Construction spending for manufacturing structures has increased steadily over the 2011 to 2014 period and is expected to increase 15.9 percent in 2015, followed by declining construction spending in 2016 and 2017. Construction spending for retail and office buildings was up in 2014 and is projected to continue growing in 2015 before peaking in 2016 and 2017, followed by continuing but slower growth beyond 2017. Construction spending for warehouse and flex space has increased steadily since 2011, but is projected to register slower growth in 2015. For 2016 and 2017, however, construction spending is projected to increase for warehouse and flex space. These growth projections reflect the expected strong performance of the U.S. economy in 2015 and its continued healthy but slower growth performance over the remainder of this decade.

Construction employment, which declined by 2.2 million jobs between 2006 and 2010, added new jobs in mid-2011, according to the Bureau of Labor Statistics, and construction employment now has increased for a fourth year. In 2014, the construction sector added 281,000 net new jobs. From mid-2011 through 2014, a total of 578,000 net new construction jobs were created. Still, employment in the construction sector remained 1.6 million jobs below its peak in 2006.

Outlook: The U.S. Economy. The importance of the construction sector to the recovery of the U.S. economy is well established. The recovery's unevenness during its first six years (dating from June 2009) can be partially attributed to the magnitude of the correction that the construction sector endured, which extended its recession to mid-2011. Now that residential and nonresidential building construction spending is increasing, the U.S. economy has gained traction in spite of its disappointing performance in 2013, with GDP up 2.2 percent, and slower-than-expected acceleration in 2014, with GDP up 2.4 percent.

Still, the continuing recovery of the construction sector helped to buttress the national economy during 2013 as federal spending, as well as state and local government spending, was curtailed and has helped to establish the foundation for the national economy's expected healthy performance over the remainder of this decade. Over the next five years, the construction sector is projected to grow (by value) at annual rates ranging between 3.9 and 9.2 percent. This strong performance will support GDP gains during this same period ranging from 2.7 to 3.0 percent. By compensating for slower-growing sectors, the construction sector's gains will provide an important contribution to the economy's strongest performance during the second half of this decade.