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Anyone in 2005 or 2006 who said the economy was about to experience a great storm was mostly ignored. Now we have learned to err more on the side of caution as we have seen some mighty storms, both meteorological and financial, in the past decade. Hard to speak of Black Swan events when the economy is actually faring quite well. The unemployment rate is in the range of the natural unemployment rate. GDP growth is slower than most would like, but still moving in a positive direction. Consumer prices remain historically low. Suppliers are busy again, and contractors are reporting backlogs of 10 months and growing (See FMI NRCI Q3 2015). Consumers are buying and building houses, and other goods at an improving pace. So what could be wrong?

Even an inchworm economy gets to some destination, whether planned or not. However, in the past decade, we have seen many cases where that slow progress has been impeded. Setbacks caused by political actions, or most often inactions, have shut down the government, delayed or denied funding and otherwise just caused greater uncertainty all around. Debt incurred in the heyday prior to the Great Recession deepened during the recession, and now many countries, including the U.S., are trying to work their way out of it. Greece has been symbolically the canary in the coal mine or the potential Lehman Brothers of global financial markets. Although that scary scenario has once again been averted in 2015, as noted above, a slowing economy in China just popped to the top of the watch list for global economics.

Doing business in what has been called the "new normal" means that long-range market forecasting is more difficult than it was in the past. This is largely due to the pace of change in a hyperconnected global economy. The construction industry has long been thought of as a mature industry where markets and processes change little. In the new normal, it is time to question our old assumptions. Any market can be prone to disruption from new technologies and the changing whims of the consumer. In our discussion below, we address how some technologies will be game changers for construction both within the construction process and in the broader markets that affect the customer's customers. Commercial retail construction is one of those examples. Large so-called big-box chains have taken a hard hit recently. The recession and lack of consumer spending were the first insults to growth; however, as the consumers begin to spend again, their habits are changing. Multiuse centers are becoming more a part of the commercial construction scene where it is more difficult to identify just one traditional category of construction as housing, office and retail spaces align with sports venues, tourist areas or business centers. Millennials are moving in toward these new metropolitan centers because that is where the jobs are. New boutique businesses are addressing this demographic with a mix of technology, service and connection to their markets.

FMI's construction forecast calls for 6% growth for 2015 and 7% for 2016, to reach $1.09 trillion, the highest total since 2008, unadjusted for inflation. Manufacturing has been the rock

star of 2015 and should come in at 18% growth for 2015. However, that pace is unlikely to continue, as we predict only 5% to 7% for 2016 through 2019. (See the Appendix for individual market details and analysis.)

According to quarterly results to FMI's Nonresidential Construction Index, executives responding to the survey have adjusted their long-range outlook for commercial construction on a downward trend; however, the short-term, three months to a year, outlooks have been stronger starting in the second quarter of 2004. The market is highly dependent on economic factors like interest rates, consumer spending and housing growth. It is not hard to find some mixed signals in our outlook for construction. This simply reflects the times we live in. Meanwhile, slow growth continues in a U.S. economy that seems to be defying the gravity experienced in global economies. Energy prices remain low, unemployment is the lowest seen in many years, governments are rebuilding their coffers for spending, and consumers are in the markets for goods.

One of the largest challenges is finding skilled workers to take on growing backlogs and allow for growth.

All the positive economic signs have led to some new challenges for the construction industry. One of the largest challenges is finding skilled workers to take on growing backlogs and allow for growth. While these challenges should come as no surprise, after downsizing around 30% of their workforce during the recession, contractors have been reluctant to hire and train new people until they absolutely need them. That time is now, and it is hard to find the people needed. That will impede growth for many companies. It will also drive contractors to adopt new technologies and processes like BIM, prefabrication, modular construction and the use of robotics for select work. The challenge of finding the right people to do the job is at bottom a problem of productivity improvement. Even if there is more work in the market, commercial markets remain highly competitive. Working smarter and being more productive are the best ways to improve the bottom line. They are also the most difficult challenges for most businesses.

The challenges of finding people and being more productive are also related to finding people to take on leadership positions for management succession. Baby boomers have reached retirement age or are not far off. The recession may have postponed retirement plans for some, but now it is even more of a critical challenge to find, train and prepare the next generation of leaders. Even in those companies where top management won't soon retire, there are needs to find people to help expand the company. Management succession is a huge challenge when we realize how many people are set to retire and how difficult it can be to get the next generation interested in construction. It is a matter of a large transfer of wealth in the next decade.

Ownership transfer is related to the needs for management succession. Companies need not only to prepare the next generation to run the business. They also need to prepare the business for a successful and profitable ownership transfer. While the recession may have caused a number of bankruptcies in the industry, most survived and now need to grow the business, which sometimes means acquiring another business or selling the business prior to retirement. The current economic climate has created new interest in merger and acquisition activity. The need for more personnel may lead to strategically purchasing a business with a trained labor force. A year or two ago, these deals would not have happened, as prices were lower and/or the acquiring balance sheet would not have supported the expenditure. Today, a seller can receive what the company deems a fair price, while a buyer feels there is still enough runway ahead to make a decent return on the investment. Add into the mix debt markets that are flush and accommodating, and we have a recipe for significant deal activity.

Introduction: Seeking Prosperity

Although 2015 marks four strong years (going on five) of market growth in the residential and nonresidential building markets, many building product suppliers continue to be concerned about the state of the market. As FMI meets and works with industry leaders, we find that they frequently express caution about the current and future market. This scenario is a glass almost half-full, a little more than half-empty, with moments of optimism tempered always by the pessimists.

Most commercial contractors and their suppliers were able to navigate the operational efficiency and cost reduction part of the recession successfully.

The good old days of 2005-2007 gave way to something like a lost decade of growth. The industry has still not returned to the peak levels achieved almost a decade ago, and stakeholders are often reminded of the pain experienced in the Great Recession. In terms of construction put-in-place current values, it will take until 2017 for the total market to return to 2007 levels, with the nonbuilding infrastructure market the only winner in that time frame. The market rebound is even more disappointing when viewed in terms of market activity based on constant dollars. The illustration below shows that in 2015, the residential building market, expressed in constant dollars, is just now returning to 1997 levels, while the nonresidential building market is returning to 2002 levels. These levels are well below the peak levels, even after a long period of market growth.

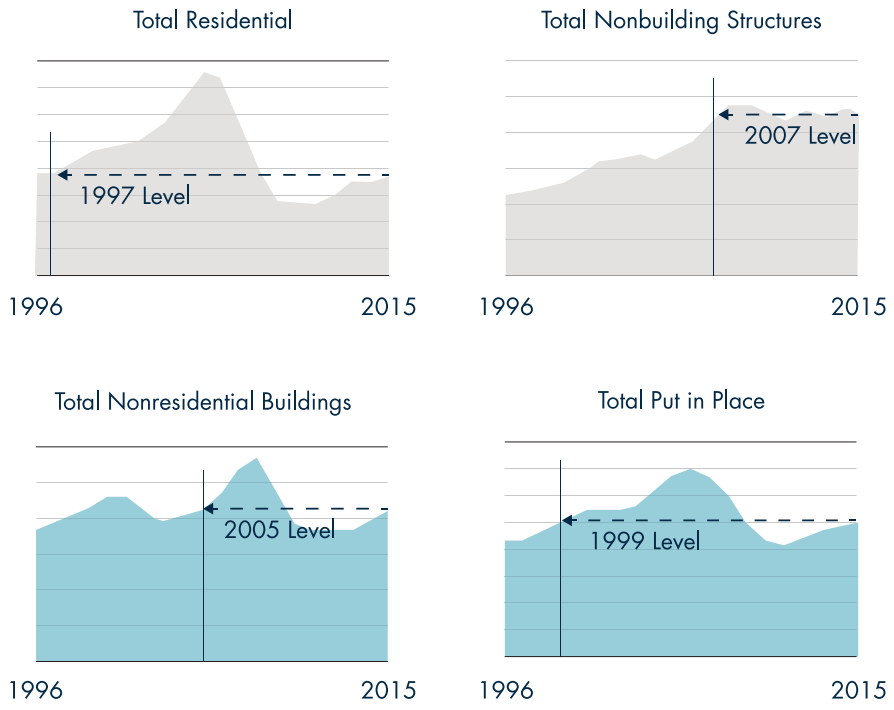
Exhibit 1: The Lost Decade: Total Construction Put in Place 2007, 2012 and 2017

	2007	2012	2017
Total Residential	500,468	268,847	437,931
Total Nonresidential	462,215	354,712	475,542
Total Nonbuilding Structures	188,667	219,687	238,697
Total Put in Place	1,152,351	861,246	1,152,170

(Millions Current $)

The market is not what it was in the "good old days," but all in all, the outlook is positive right now and has been for almost five years. Even better, growth has been steady and moderate during this time. Most commercial contractors and their suppliers were able to navigate the operational efficiency and cost reduction part of the recession successfully. This maniacal focus on getting lean has served commercial industry stakeholders well in terms of cost reductions, particularly in a market where price pressure has persisted beyond recessionary conditions, even with increased demand. Our sense is that this ongoing internal focus has helped to fuel continued commoditization in many parts of the commercial market supply chain. While there are some cases of outstanding differentiation by selected firms, many continue in a business-as-usual mode, with protection, preservation and pricing remaining at the core of the

Exhibit 2: Constant Dollars



strategy. While some will say that any strategy is better than no strategy, there are many evolving trends in the current domestic markets, and the global interaction of finances and markets grows in its impact or potential impact on all markets. We will frame some of the issues below and take a look at what it means to live and do business in what has been characterized as the "new normal."

Where We Are Now and How We Got There

Only in hindsight can one suggest that Hurricane Katrina was a harbinger of the economic storm to come. Those caught in the middle of it might easily share that idea. Although we don't really see it as the first in the line of events that lead to the Great Recession, the damage and destruction caused by the natural disaster does serve as both example and metaphor for the economic disaster that was the recession. Several times during the recession and as we crawled out of it, we have referred to the pace of growth as an "inchworm economy." As we reported the economic temperature in our quarterly construction industry reports, it was often hard to see any progress, and what progress there was looked like two steps forward and one step back—or often the other way around. A few extended excerpts from earlier reports and the latest reports demonstrate the potential for peril when prognosticating:

September 2006: "The economy is continuing at a healthy pace, but the price of oil, inflation and a severe housing bust are potential threats to this healthy growth.

- **Dateline: August 23, 2005 – August 31, 2005:** Hurricane Katrina batters the Gulf Coast
- **Dateline: September 2006:** "The economy is continuing at a healthy pace, but the price of oil, inflation and a severe housing bust are potential threats to this healthy growth. Oil prices have hit record highs, but they have not been able to really dampen economic growth. Inflation is still so far unseen, and the housing bust looks more like a soft landing." (FMI Outlook Q2 2006)
- **Dateline: Autumn 2009:** "The construction industry is facing a downturn that it has not felt in more than 25 years. Having enjoyed an extended period of economic prosperity, many industry executives find themselves unprepared for a deep recession, and some will go out of business ei-

ther because they ran out of cash or just to avoid losing any more money than they have already. For those willing to weather the storm, it is time to shorten sail and focus on fundamentals." ("Weathering the Storm: Navigating a Turbulent Market." FMI Quarterly, Issue 3, 2009)

- **Item:** "The National Bureau of Economic Research (NBER) dates the beginning of the recession as December 2007. According to the Department of Labor, roughly 8.7 million jobs were shed from February 2008 - February 2010, and GDP contracted by 5.1%, making the Great Recession the worst since the Great Depression."

Having worked through the recession and found a better side, our optimism is now a bit tarnished.

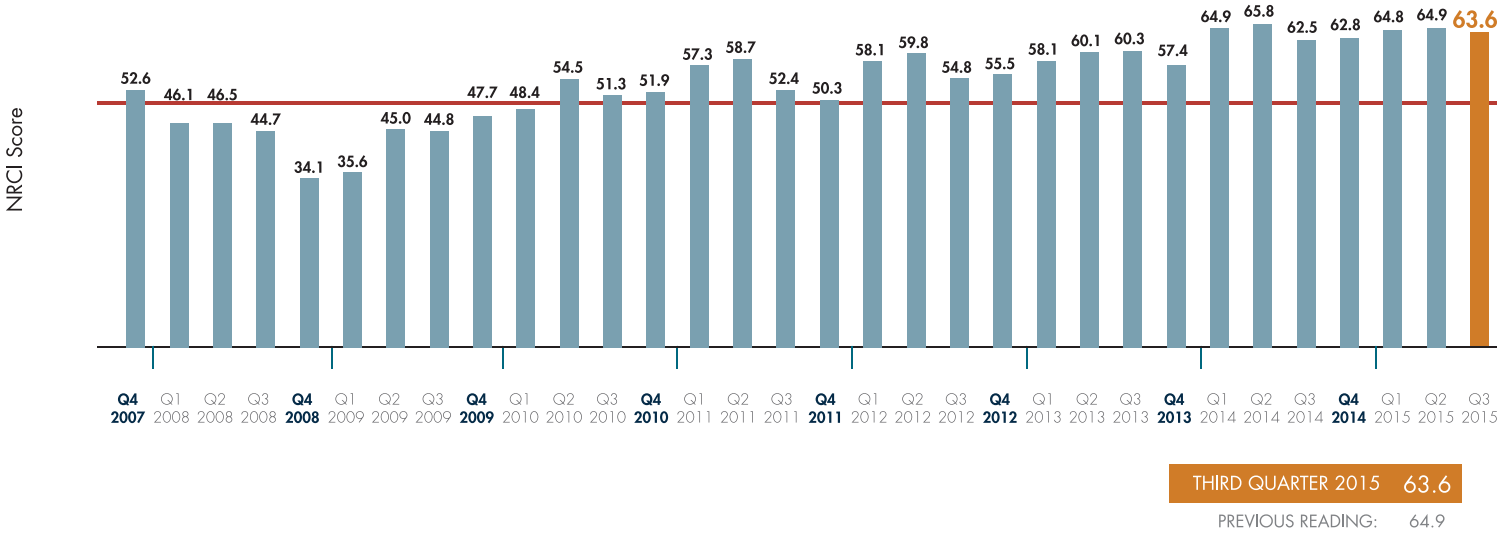
In mid-2006, we could say that we had a hint of what was coming for the construction industry, but our experience and optimism did not allow us to consider the darker possibilities of the economic signs at the time. We were not alone in that position. Having worked through the recession and found a better side, our optimism is now a bit tarnished. Even in the face of many current positive economic factors for the overall economy and the construction economy in particular, we sometimes tend to pay more attention to the darker clouds that have the potential to rain on our recovery, as in FMI's latest Outlook report for Q3 2015:

> Corrections happen all the time, but when the correction involves the stock market, it has a more specific meaning. Sometime around August 19, the correction began, although it wouldn't be recognized as a correction until around August 24. Nonetheless, as of August 30, the DJIA was about 87% higher than it was five years earlier. So what does this mean to the construction industry and its markets? Generally, the time it takes to plan, build and occupy or create the products of construction are measured in months and years, not minutes and milliseconds. While there are changes in our forecast each quarter, the underlying drivers change little in most markets. Nonetheless, the stock market is one important barometer of a potential future financial state. (FMI Q3 2015 Construction Outlook)

> A couple of weeks before the stock market correction noted above, we wrote in the FMI Nonresidential Construction report (NRCI) for Q3 2015, "Nonetheless, even though most don't expect any immediate repercussions [to the debt problems in Europe, etc.], there is a sense that a 'Black Swan' lurks in the reeds and that causes uncertainty." China's currency devaluation was unexpected. Was that event the potential Black Swan or a Black Swan averted? In his book 'The Black Swan' (2007), Nassim Nicholas Taleb summarized the characteristics of a Black Swan event as 'rarity, extreme impact and retrospective (though not prospective) predictability.' We could say China's surprise move had extreme impact, but it is really too soon to tell the full extent, and it is also too early to do a full retrospective. Black Swans are not necessarily bad events. Out of turmoil there may come world-changing inventions and ideas. Nonetheless, the 'correction' was significant. For the time being, we might view the market correction as just that, a course correction to reflect the real value of the markets.

The most important things happening to offset the problems in the economy include investing in production, productivity and new ideas that will keep the next generation working for years to come. That is what will really make the economy hum a happier tune. In the meantime, industry indicators like FMI's Nonresidential Construction Index continue to maintain a growth trend.

Exhibit 3: NRCI Scores Since Inception – Q4 2007 to Q3 2015



THIRD QUARTER 2015 63.6

PREVIOUS READING: 64.9

(Scores higher than 50 indicate expansion, below 50 indicate contraction.)

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While commercial contractors and suppliers will continue to keep an eye on the broader economy and plan accordingly, the immediate challenges at this time are finding the right people to help complete current backlog and build their organizations for future growth. As construction gets busier, productivity becomes more of a challenge. Contractors are taking greater advantage of a range of technology from BIM, communications advances, GPS, prefabrication, modularization and even robotics for dangerous and repetitive tasks like welding. This is still a small portion of the industry that is in the vanguard, but we expect to see these technologies and new business practices expand, especially in areas where it has been difficult to find skilled workers and highly competitive markets. Productivity improvement will be critical, no matter which way the stock markets go in the coming year.

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Exhibit 4: FMI Nonresidential Construction Index (NRCI) Component Results Q2 2015 to Q3 2015

	NRCI Component Results, Quarter 2 for 2015				NRCI Component Results, Quarter 3 for 2015			
	Improving over last quarter	Staying the same as last quarter	Worse compared with last quarter	NRCI Q2 2015	Improving over last quarter	Staying the same as last quarter	Worse compared with last quarter	NRCI Q3 2015
Overall Economy	56.7%	40.4%	2.9%	76.9	43.1%	54.9%	2.0%	70.6
Overall Economy Where Panelists Do Business	56.2%	41.0%	2.9%	76.7	49.5%	47.6%	2.9%	73.3
Panelists' Construction Business	59.4%	34.0%	6.6%	76.4	55.3%	40.8%	3.9%	75.7
Nonresidential Building Construction Market Where Panelists Do Business	58.7%	35.6%	5.8%	76.4	54.9%	40.2%	4.9%	75.0
Backlog in Months	High	Median	Low		High	Median	Low	
Approximate Current Signed Backlog	36.0	10.0	2.0		30.0	10.0	3.0	
	Grow faster than last quarter	Stay about same as last quarter	Shrink compared with last quarter		Grow faster than last quarter	Stay about the same as last quarter	Shrink compared to last quarter	
Expected Change in Backlog	50.9%	41.5%	4.5%	71.7	48.0%	41.2%	10.8%	68.6
	Higher than last quarter	Same as last quarter	Lower than last quarter		Higher than last quarter	Same as last quarter	Lower than last quarter	
Cost of Construction Materials	58.1%	41.0%	1.0%	21.4	46.1%	49.0%	4.9%	29.4
Cost of Labor	75.0%	25.0%	0.0%	12.5	74.8%	25.2%	0.0%	12.6
	Improving over last quarter	Same as last quarter	Declining compared with last quarter		Improving over last quarter	Same as last quarter	Declining compared with last quarter	
Productivity	10.5%	81.0%	8.6%	51.0	4.9%	85.4%	9.7%	47.6

The latest FMI Nonresidential Construction Index continues to show a growing economy for construction. However, NRCI panelists are slightly less optimistic than the previous quarter. (Scores higher than 50 indicate expansion, below 50 indicate contraction.)

Even an inchworm gets to some destination whether planned or not. However, in the past decade, we have seen many cases where that slow progress has been impeded. Setbacks caused by political actions, or most often inactions, have shut down the government, delayed or denied funding and otherwise just caused greater uncertainty all around. Debt incurred in the heyday prior to the Great Recession deepened during the recession, and now many countries, including the U.S., are trying to work their way out of it. Greece has been symbolically the canary in the coal mine or the potential Lehman Brothers of global financial markets. Although that scary scenario has once again been averted in 2015, as noted above, a slowing economy in China just popped to the top of the watch list for global economics.

Construction Forecast

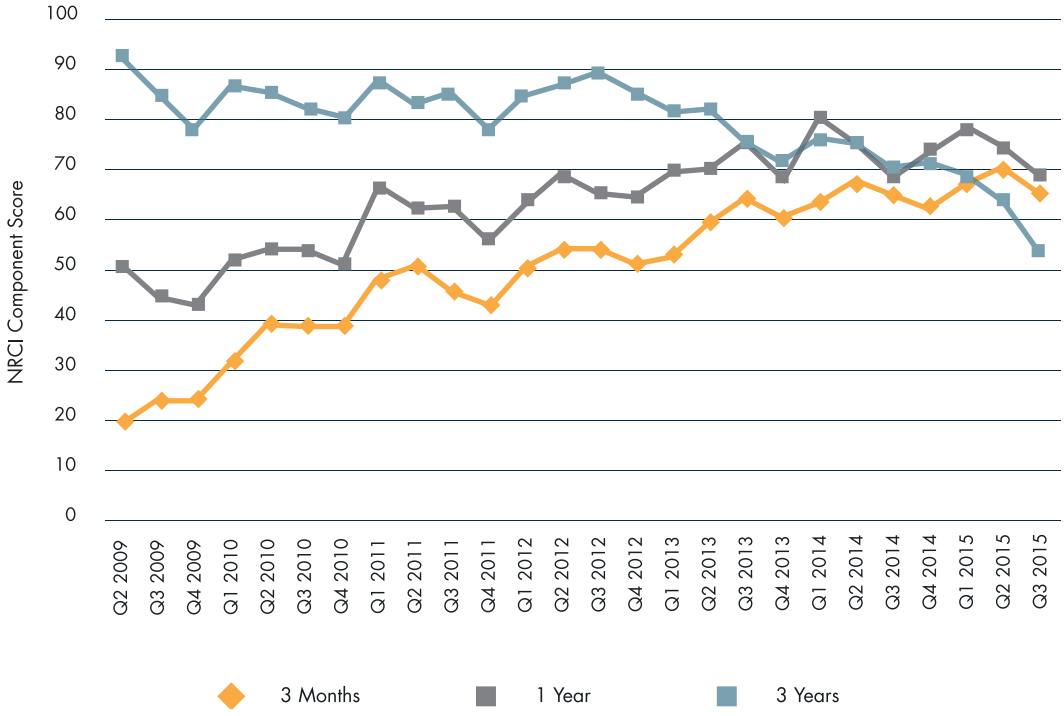
After adjusting our forecast for construction down a notch in the second quarter to 5%, we now expect 6% growth for 2015 and 7% for 2016, to reach $1.09 trillion, the highest total since 2008, unadjusted for inflation. Manufacturing has been the rock star of 2015 and should come in at 18% growth for 2015. However, that pace is unlikely to continue, as we predict only 5% to 7% for 2016 through 2019. (See the Appendix for individual market details and analysis.)

Manufacturing and industrial construction requires a long planning cycle in most cases; it also is a market that reflects global competition, as countries strive to keep their workers employed and boost exports. Lower energy prices are, overall, beneficial to this sector, with the exception being oil and gas-related construction, which has slowed since energy prices started dropping last year. Lower energy prices, along with a trained and available workforce and improved modes of transportation, also attract manufacturing.

The completion of the Panama Canal will mean a boost for manufacturing in Gulf Coast states. Other strong markets for 2015 include lodging, office, and amusement and recreation, all experiencing double-digit growth. Multifamily construction has cooled to 11% for 2015.

According to quarterly results to FMI's Nonresidential Construction Index, executives responding to the survey have adjusted their long-range outlook for commercial construction on a downward trend; however, the short-term, three months to a year, outlooks have been stronger starting in the second quarter of 2004. The market is highly dependent on economic factors like interest rates, consumer spending and housing growth.

Exhibit 5: NRCI: Commercial Construction Component Outlook History, Q2 2009 to Q3 2015 (for Three Months, One Year and Three Years)



As the U.S. per capita use of energy falls, the power industry is undergoing many changes due to changing fuel sources, new regulations and added capacity from renewable sources like solar and wind energy. The focus currently is on updating an aging fleet of power plants and adding peaking capacity. While transportation construction, largely driven by rail and airport renovation projects, is showing a sustainable growth of around 9% a year, highway and street construction continues to suffer budget uncertainties, and most work is being funded by states for necessary repairs to roads and bridges along with some key projects on major thoroughfares.

U.S. Regional Construction Forecast

We expect every region in the U.S. to see construction growth ahead of GDP growth with the strongest regions being the Pacific, South Atlantic, Mountain and East North Central. Growth in the Pacific region will be slightly lower than in 2015, but all others will be one to three percent higher than 2015.

Exhibit 6: U.S. Construction Put in Place — Regional Forecast Summary

YEAR	Total Residential	Total Nonresidential Buildings	Total Nonbuilding Structures	Total Put in Place	Projected Growth 2015 to 2016
New England					
2015	12,448	24,964	7,363	44,774	5%
2016	13,208	26,377	7,541	47,126	
Mid Atlantic					
2015	34,954	63,141	22,350	120,445	5%
2016	36,045	67,431	22,986	126,463	
East North Central					
2015	19,980	65,266	26,395	111,641	7%
2016	22,050	69,993	27,200	119,243	
West North Central					
2015	53,042	38,443	23,004	114,489	4%
2016	56,442	39,759	23,102	119,303	
South Atlantic					
2015	81,980	78,178	47,540	207,699	8%
2016	90,811	84,416	49,450	224,678	
East South Central					
2015	10,142	21,479	12,551	44,173	4%
2016	10,687	22,796	12,631	46,114	
West South Central					
2015	40,386	45,616	38,586	124,588	4%
2016	42,644	47,957	38,941	129,542	
Mountain					
2015	33,894	25,377	17,977	77,248	7%
2016	37,575	26,691	18,415	82,681	
Pacific					
2015	88,864	61,500	30,519	180,884	10%
2016	99,075	66,824	32,441	198,340	

Millions of Current Dollars

We have ranked below 20 top growth areas for construction based on volume and compound annual growth rates (CAGR). There are a number of factors that make up this growth for these MSAs, but most share the factor that this is where the jobs are. While several are tourist and recreation attractions, most also share ties to growth in technical jobs and universities. In general, these are all characteristics of a move, especially for the young and mobile population, to the metropolitan areas with economic and cultural growth aspirations.

20 High-Growth Hot Spots to Watch

1. Riverside-San Benardino-Ontario, CA
2. Phoenix-Mesa-Scottsdale, AZ
3. Sacramento-Arden-Arcade- Roseville, CA
4. Dallas-Fort Worth-Arlington, TX
5. McAllen-Edinburg-Mission, TX
6. Austin-Round Rock, TX
7. Provo-Orem, UT
8. San Antonio, TX
9. Las Vegas-Paradise, NV
10. Durham-Chapel Hill, NC
11. Atlanta-Sandy Springs-Marietta, GA
12. Portland-Vancouver-Beaverton, OR-WA
13. Fayetteville-Springdale-Rogers, AR-MO
14. Ogden-Clearfield, UT
15. Raleigh-Cary, NC
16. Worchester, MA
17. Charlotte-Gastonia-Rock Hill, NC-SC
18. Modesto, CA
19. Tuscon, AZ
20. Indianapolis, IN

The New Normal Is Disruptive

Our examples of what we said before and after the recession at the opening of this paper are little more than bookends for hundreds of books and stories in between with many more to come. The point is that all that history tends to shade and shape our look at the future. We are now working in what the head of PIMCO, Mohamed A. El-Erian, referred to as "the New Normal." "Our use of the term was an attempt to move the discussion beyond the notion that the crisis was a mere flesh wound...instead the crisis cut to the bone. It was the inevitable result of an extraordinary, multiyear period which was anything but normal."

In other words, the New Normal is not at all normal, which begs the question, when was anything in the economy normal? Perhaps it is mostly a nostalgic sense that between the Great Depression and the Great Recession, and dodging a number of lesser, but not insignificant, recessions, there was a period of normality where people worked hard, companies prospered and pensions and stocks were mostly predictable and depended on by investors. When there were disruptions, like the not so great era of inflation, things eventually returned to "normal." In fact, it is more like the never-never land in our dreams. Nonetheless, the New Normal, trite as some call the term, has some currency and helps us to look below at trends, challenges and opportunities in the current economy and not-so-distant future. How far can an inchworm travel uphill in a decade, if it lived that long?

The inchworm economy has traveled far enough to regain the bulk of the momentum lost during the downhill run. Good to see such progress, but now one of the immediate problems is that companies reluctant to hire during the slow recovery are hungry for talented workers to replace those jobs downsized during the depth of the recession, and companies need even more employees in order to take on more projects and grow again.

The new normal is rife with opportunities in between the hazards and sand traps. For instance, for some companies in the construction industry or those supplying it with materials, stormy weather is more than a metaphor for economic swings. Real natural weather changes and disasters can wreak havoc with businesses and make opportunities for those who help to put things back together again. Weather forecasters are possibly better at forecasting the long-range weather than economists are at forecasting the stock market six months from now. Weather forecasters are calling for a "strong El Niño season" for the late fall of 2015 and into the spring of 2016. Some are calling it a "monster El Niño." For roofers and others, how much potential work might such weather create?

The new normal is perhaps best characterized as being prone to disruptions to the point that disruption is normal.

The new normal is perhaps best characterized as being prone to disruptions to the point that disruption is normal. The rise of new technologies that turn traditional markets on their heads provides most examples of disruption, i.e., the microchip, personal computers, cellphones and smartphones, GPS, digital cameras, digital everything and on and on. In construction, possible disruptors include robotics, prefabrication and modularization, 3-D printing and 4-D Building Information Modeling.

Change and the Internet of Things

If there is one thing we know about change, it is that it is as inevitable as time. Change happens. However, change happens at different rates. Time just keeps marching on at the same rate—at least it did until theorists like Einstein came along and complicated things with ideas like time travel and wormholes. In geology and the sciences of evolution and paleontology, there have been long and famous arguments about the rates of change in landscapes and living organisms. Does it happen gradually (gradualism) or rapidly (catastrophism)? Storms and streams gradually shape the landscape. Earthquakes are more

impatient in their work. The current thinking is that we have both gradual and cataclysmic change. In any event, change and trying to forecast change, however tricky to do, are necessary for those seeking to make business plans and/or budget for R&D. We are all becoming data miners these days. No one doubts that technology and the growing Internet of Things (IoT) are changing business, but finding ways to be part of the change rather than a victim is the trick to learn in order to participate in future commerce.

Market disruptions appear to be more frequent in the age of the Internet, but not all change is immediately disruptive. (See graph below.) For instance, the idea that e-commerce will overtake brick and mortar storefronts is not inevitable, but it is inevitable that it will continue to remake the concept of the traditional store and might even decimate more markets like the bookstore, for instance. Can you find a local camera store these days? So what's next for the e-commerce engine? Consider online education, one of the biggest construction markets, as a potential candidate for more online exchange of goods. Religious construction can also be done online, and is. Office, travel, amusement and recreation, even health care are all changing as more of our lives are spent online. How far will it go? For now at least, it looks like the Internet of Things could mean everything will be connected, and everybody—literally and figuratively—will be part of everything. "Resistance is futile" as the Borg in old Star Trek shows would say.

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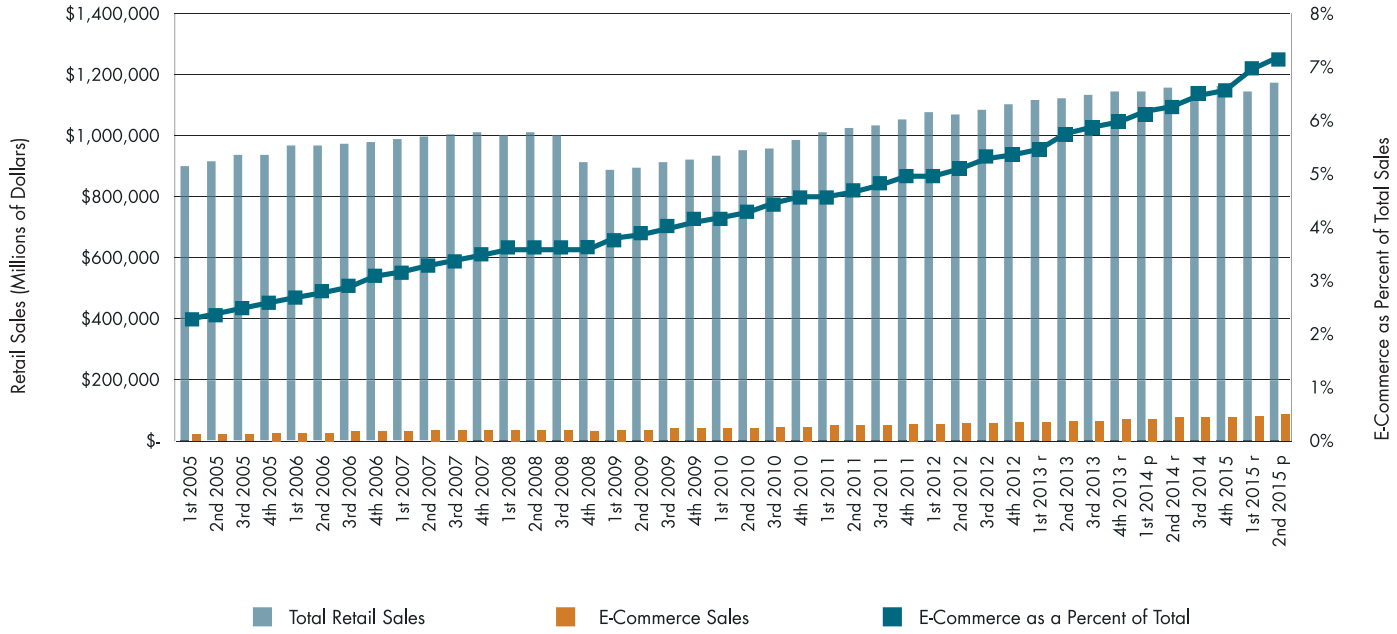
The point to all this pontificating about changing technology is that even traditional, mature industries like construction need to be aware of how much these things can and will change their businesses, not just in market changes, but construction companies utilizing new technologies in new ways. In most cases, even the generations-old family business isn't the same even though some have maintained the original culture. That's how a business grows for multiple generations. So where does a company go with its strategy in a technological world? New markets? Same markets, new products and services? Same clients, new services? Same markets, same services, more competitive? All of these are valid strategies, but which approach does a company use if, for instance, more retail goes e-tail? There is a need for more data centers and warehouses and maybe even pick-up centers. If a company persists in going to the same market in which it has always worked, even if it is getting too crowded there, it must have some new tactics like being the low-price provider or the most efficient supplier. That can lead to ideas like more modular and prefabricated construction. There is no single solution. If there were, why have multiple competitors in the market?

Companies often get stuck in their ways, chasing customers that no longer exist. If the traditional mall is not working the way it did 10 or 20 years ago, what is happening?

It isn't just products or building types that change; owners change to keep up or stay ahead of consumers. The current upheaval in many traditional big-box store chains provides a case in point. Some just haven't kept up with their customers' needs. Companies often get stuck in their ways, chasing customers that no longer exist. If the traditional mall is not working the way it did 10 or 20 years ago, what is happening? It is time to find new customers or find the old customer and ask what is different. Not all are going to the Internet, but they might be favoring new boutique shops, specialty stores and New Age restaurants that cater to the customer. Something that traditional stores forgot somewhere along the line. So what is the upshot for those selling roofing materials and systems? Maybe your old customers aren't home anymore or just aren't answering the door. It is time to look in new places and make new relationships.

Exhibit 7: Total Retail Sales vs. E-Commerce Sales Growth History



Construction Industry Trends

Talent Shortages and Management Succession

In many ways, the Great Recession is still with us, because many areas of the country and economy are still in recovery. The National Bureau of Economic Research officially declared the recession was over in June 2009. Nonetheless, the Federal Reserve has been very cautious about raising interest rates for fear of upsetting a slow recovery. That type of caution has permeated the thoughts of many business owners as well as the workforce, consumers and owners in the construction industry. It is also why even those contractors that have seen growing business have been reluctant to hire after going through the agony of letting 30% of their workforce go at the height of the recession.

The construction industry has long had this problem of attracting young people to an industry that is perceived as tough, dirty, dangerous and low-paying.

Our annual brief survey of hiring expectations for FMI's Nonresidential Construction Index reveals that most contractors have not been hiring until their staff is "consistently over full work capacity." Many of those companies are now struggling to find talented employees to handle current and expected backlog. Many, including FMI, have reported about the coming labor shortage in the construction industry for some years. Some companies have also seen it coming and planned and hired ahead, developing a pipeline for future recruits and talent development programs. Such companies understand that those that can master the labor needs will win business. They are among the few in the industry.

In recent studies conducted by FMI, we have found that the need to recruit and retain employees has increased the focus on employee development and succession planning not just for top executive positions. Everyone by now is aware that the focus for the industry—and most every industry—is on how to attract the next-generation millennials to their business. The construction industry has long had this problem of attracting young people to an industry that is perceived as tough, dirty, dangerous and low-paying. Millennials have been characterized by many studies as being high-tech and career-oriented, among other characteristics. Some of these characteristics are shared by earlier generations as well. It is a new realization by many contractors that they need programs that create career paths for incoming employees and offer training and support to make it happen.

As companies grow or plan to grow, they discover that human resource management is not a part-time job. In fact, for the construction industry, recruiting, retaining, training, tracking and keeping proper records needs to be a high priority. Human resource executives have an important place at the strategic planning table. The solutions for recruiting and developing a skilled workforce will vary from sector to sector and firm to firm. Despite attempts to treat construction as a commodity, the best-performing companies have unique cultures and approaches to the work. FMI believes that looking at solutions in terms of the implementation of human capital strategies offers the best results for long- and short-term goals. This approach should not only help reduce poor hiring but also improve employee retention and career development to provide an ongoing succession of talent and leadership.

Exhibit 8: What Are Your Key Considerations or Criteria for Hiring for Salaried Employees? (NRCI Data from 2011 to 2015)

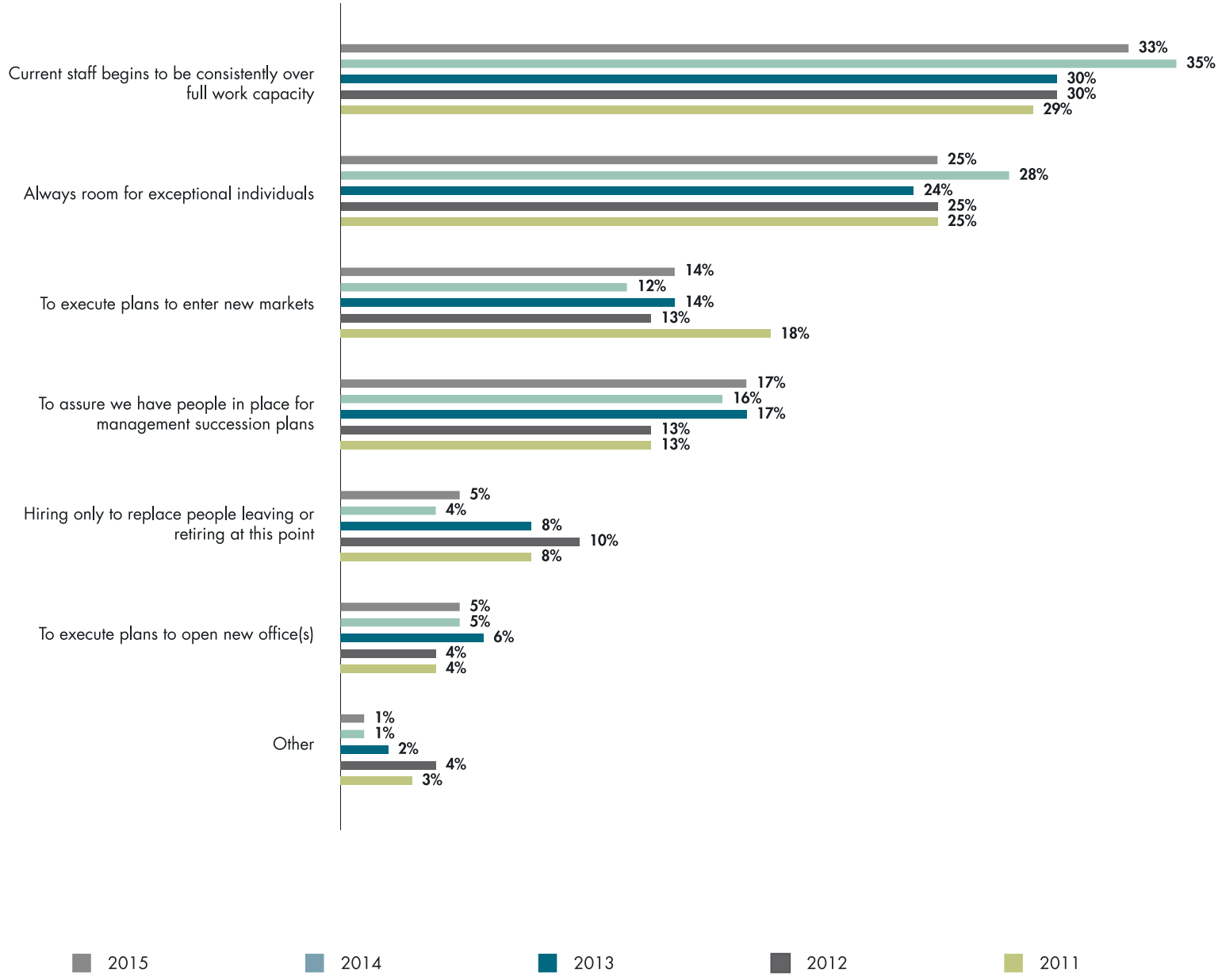


Exhibit 9: U.S. Construction Employment Projections

	2012 Employment	2022 Employment Need	Percent Change 2011-2022
Construction Laborers	1,071,100	1,331,000	24%
Brickmasons, Blockmasons, Stonemasons, and Tile/Marble Setters	24,400	34,900	43%
Carpenters	36,400	47,100	30%
Electricians	60,800	83,300	37%
Painters, Paperhangers, Plasterers and Stucco Masons	11,100	12,200	10%
Pipelayers, Plumbers, Pipefitters and Steamfitters	47,400	60,600	28%
Roofers	12,000	14,000	17%
Other Construction Trades	21,400	26,600	24%

(Source(s): FMI, Bureau of Labor Statistics)

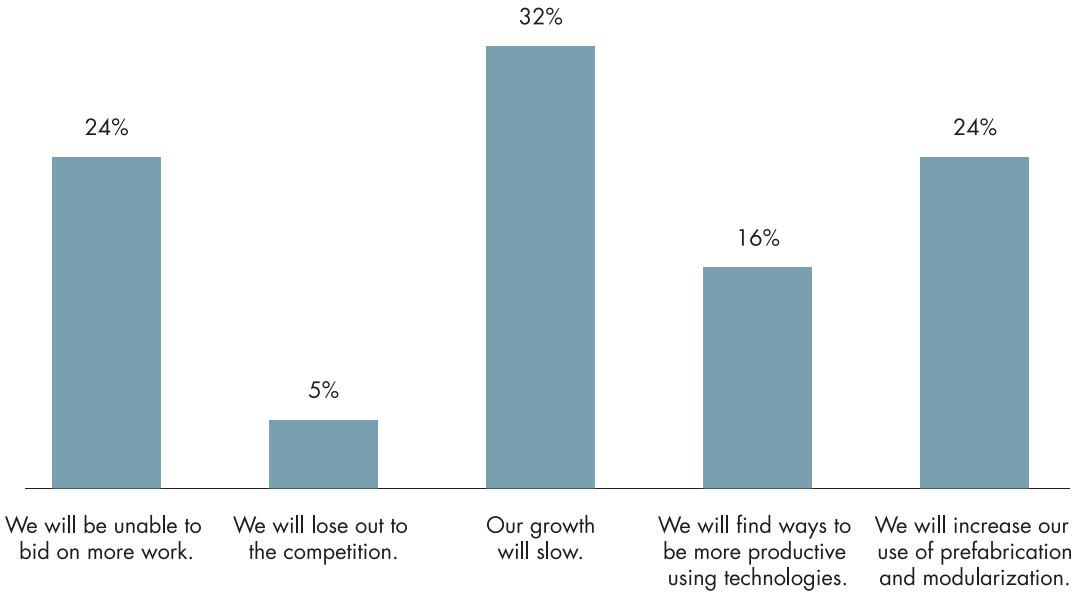
The New Normal is characterized by the use of technology and the Internet of Everything. The expectations are lower prices, faster delivery and, as always, higher quality.

Driving New Technologies

Now that the construction industry has returned to a period of growth, the lack of skilled labor has become one of the limiting factors to that growth, even though, despite reports of unemployment reaching around 5.3%, there are still millions of unemployed. However, the problem is one of structural unemployment. The people who need jobs may not have the skills for the growing list of job openings. They also may not live in an area where the jobs are growing. In a recent FMI survey of contractors concerning talent development needs, we asked what the contractors will do if they can't find the people with the skills needed for job openings. The results should set off some alarms. Contractors say they will be unable to bid more work (24%), they will lose out to competition that has a better solution to jobs (5%), and, most notably, 32% said that growth will slow. That is most distressing in an economy that finally is providing more growth opportunities.

However, not all contractors will sit back and accept that the shortages in skilled labor will halt growth. Contractors are resourceful, and 16% said they will find ways to be more productive, employing new technologies including increasing their use of prefabrication and modularization.

Exhibit 10: If You Cannot Reasonably Meet the Need for Skilled Labor and Tradespeople in the Next Few Years, What Do You Think Will Be the Impact for Your Business?



In 2013 FMI polled contractors on their experience with prefabrication and modularization. The majority of responses fell into the broad range of 1% to 10% growth in the next five years. Helping to offset the need for skilled labor was just one of the major reasons they expect growth in their use of these technologies and processes. The others include increased safety and productivity improvement. With the current need for skilled labor and the growing use of technologies like BIM, there is a potential for the markets to exceed the growth expected a few years ago. Currently, the technology is there, but the growing acceptance of modular designs by project owners and architects could spur accelerated growth in the next few years. The drivers for owners will be both cost and reducing the time for delivery. The New Normal is characterized by the use of technology and the Internet of Everything. The market expectations are lower prices, faster delivery and, as always, higher quality. Again, it is clear that the standard operating procedures of throwing more bodies at the problem of productivity and growth won't work in the future.

Working with commercial and other contractors on the need to increase prefabrication and modularization, it becomes clear that, for most, this is a new paradigm where construction begins to look more like a manufacturing environment where assemblies and modules are erected in the field rather than constructed on-site. It means a change in skill sets. The need for skilled labor doesn't disappear; it shifts to the shop and BIM skills. Construction becomes more standardized and computerized. There are skills sets that it is hoped will attract upcoming millennials looking for stable careers with growth opportunity. This will require some big changes to traditional approaches to construction, and some contractors will find it difficult to make the change.

Exhibit 11: How Fast Do You Think the Use of Prefabrication Will Grow in the Next Three Years?

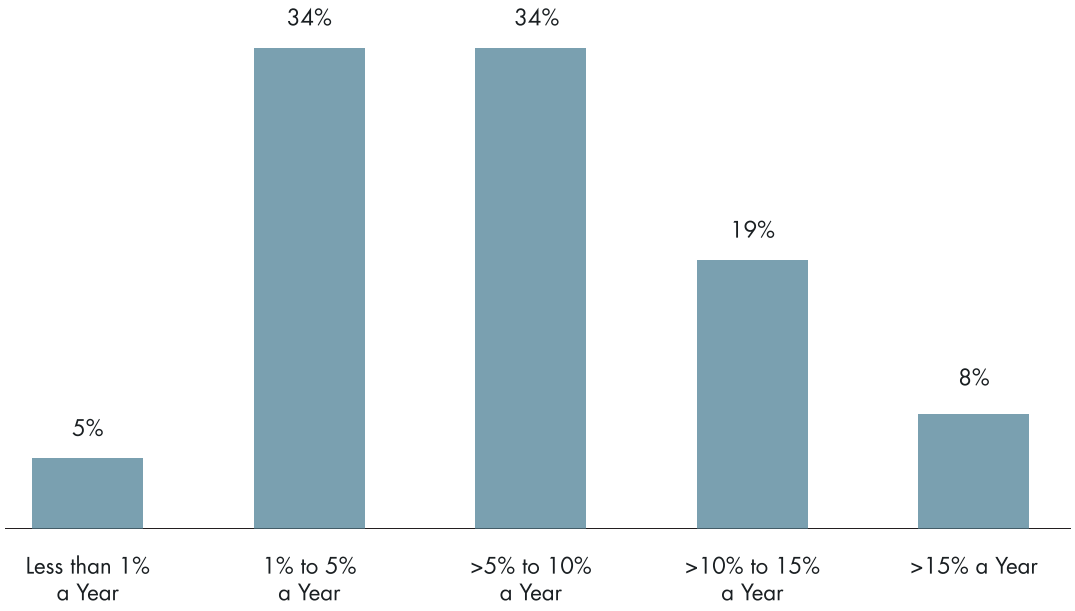
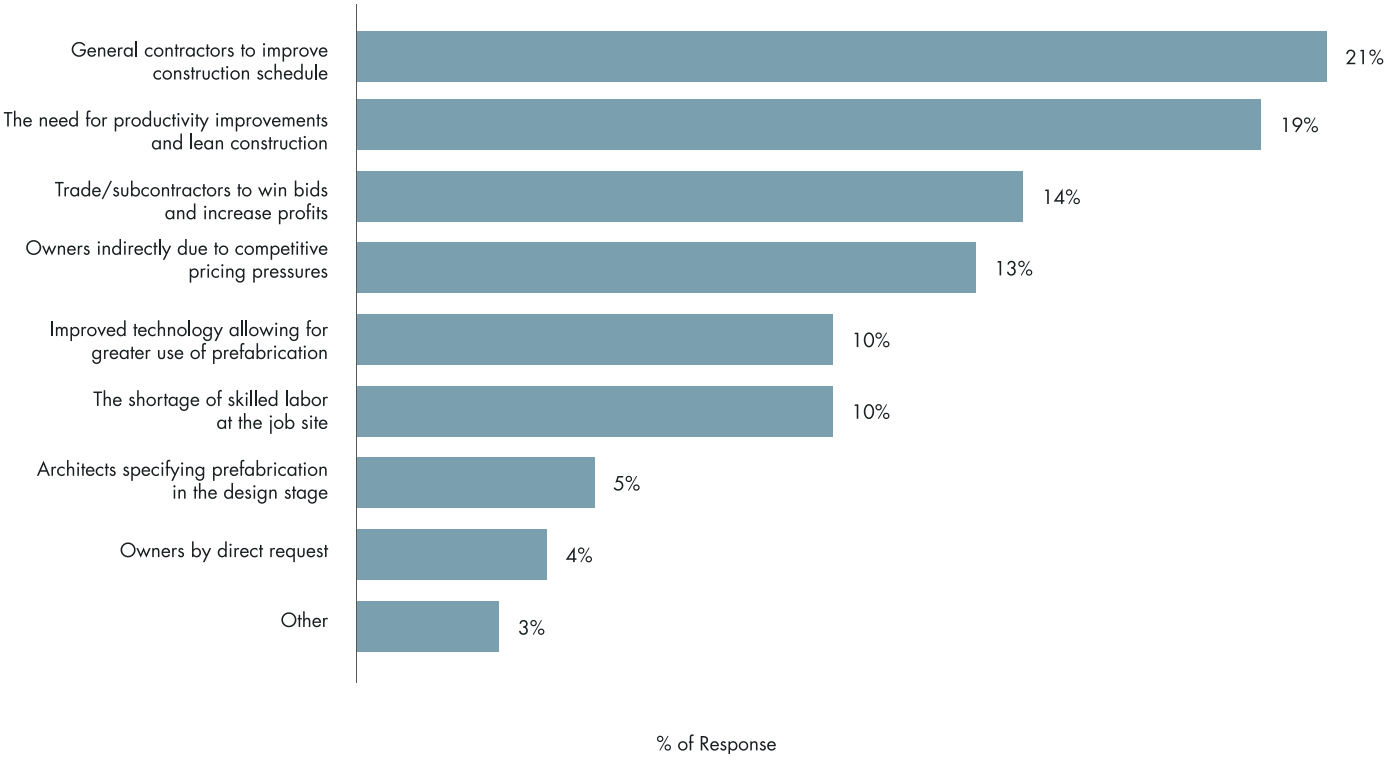


Exhibit 12: Who or What are the Primary Factors Driving the Demand for Prefabrication?



With the growing evidence that more contractors are capacity-limited, we are hearing more comments like the one from a panelist for FMI's Nonresidential Construction Index for the second quarter 2015:

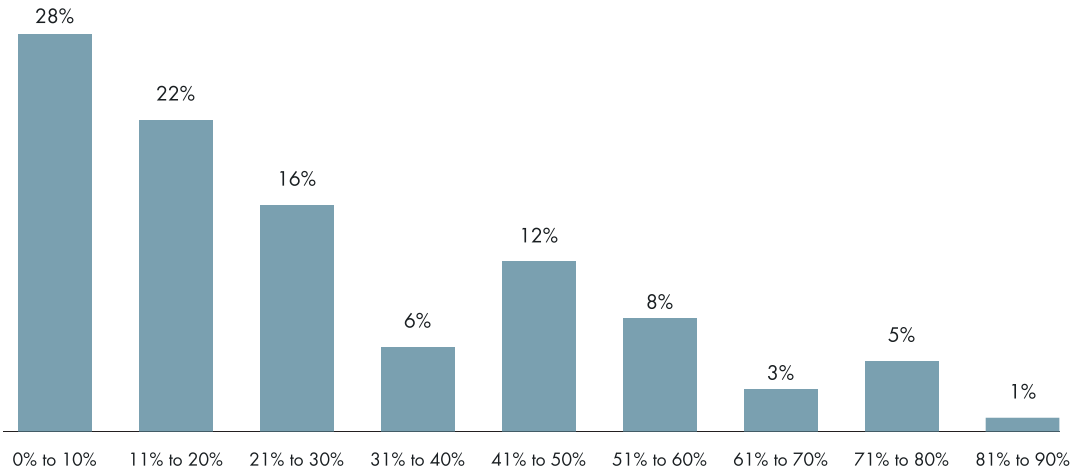
We are so busy; we have no teams available to do any work that would start in the field within the next six months. Crazy for a $400M a year contractor. Turning away opportunities every day.

Although trends in construction — prefabrication, modularization, use of robotics and 3-D printing — will take a long time to become mainstream like green construction has, the ongoing shortages of skilled labor will certainly hasten their coming.

Building Information Modeling is one of the key technologies driving prefabrication and modular construction, and, while it is a growing technology that is now extended to more than just design—planning, estimating, purchasing and as-built records for maintenance, etc.—it is now seen as something like table stakes for construction rather than cutting-edge. BIM models are playing a greater role than just marketing as now everyone on the project, including suppliers, needs to be connected to the "model," whether it is providing specifications for products in design, sending dimensional information to the shop for fabrication, or planning assembly schedules on-site.

Like BIM, green construction capabilities are now the way of doing business in all aspects of construction, not just a new thing or competitive edge. However, that is not to say that all projects are "green," even if more of the practices and materials used are "greener" than in the past. When we asked construction executives about what owners looked for most in green construction, energy savings topped the list by a large measure. Although a growing number of projects were reported to be greener, there is still room for growth in that area.

Exhibit 13: What Percentage of Your Current Projects Would Be Considered "Green" Construction? (%) (FMI NRCI Q2 2015)



Productivity Improvement Is Key for Profitability

No, we have always been focused on improvement here, before and after the recession and into the future. We are a labor business, productivity is our lifeblood. (FMI NRCI panelist, Q4 2013, in response to the question, "Since the recession began, have you changed your approach to productivity improvement? If so, how?")

For the contractor, technology and planning need to be focused on improving productivity, which is paramount to being profitable in highly competitive markets.

While capabilities in areas like the use of BIM, prefabrication, modularization and green construction are necessary marketing points for construction, for the contractor, technology and planning need to be focused on improving productivity, which is paramount to being profitable in highly competitive markets. However, this is an area where most contractors continue to struggle, as illustrated by responses to FMI's NRCI report since 2008. As the recession hit the nonresidential construction markets, the Index component for productivity, as reported by NRCI panelists, began to rise. This is primarily attributed to doing more with fewer people, and in many cases, those people who remained employed were the most talented workers with multiple skills. As the NRCI Index scores began to rise coming out of the recession, productivity began to slide to its current point of declining relative scores, as companies are feeling shortages of skilled labor and growing backlogs.

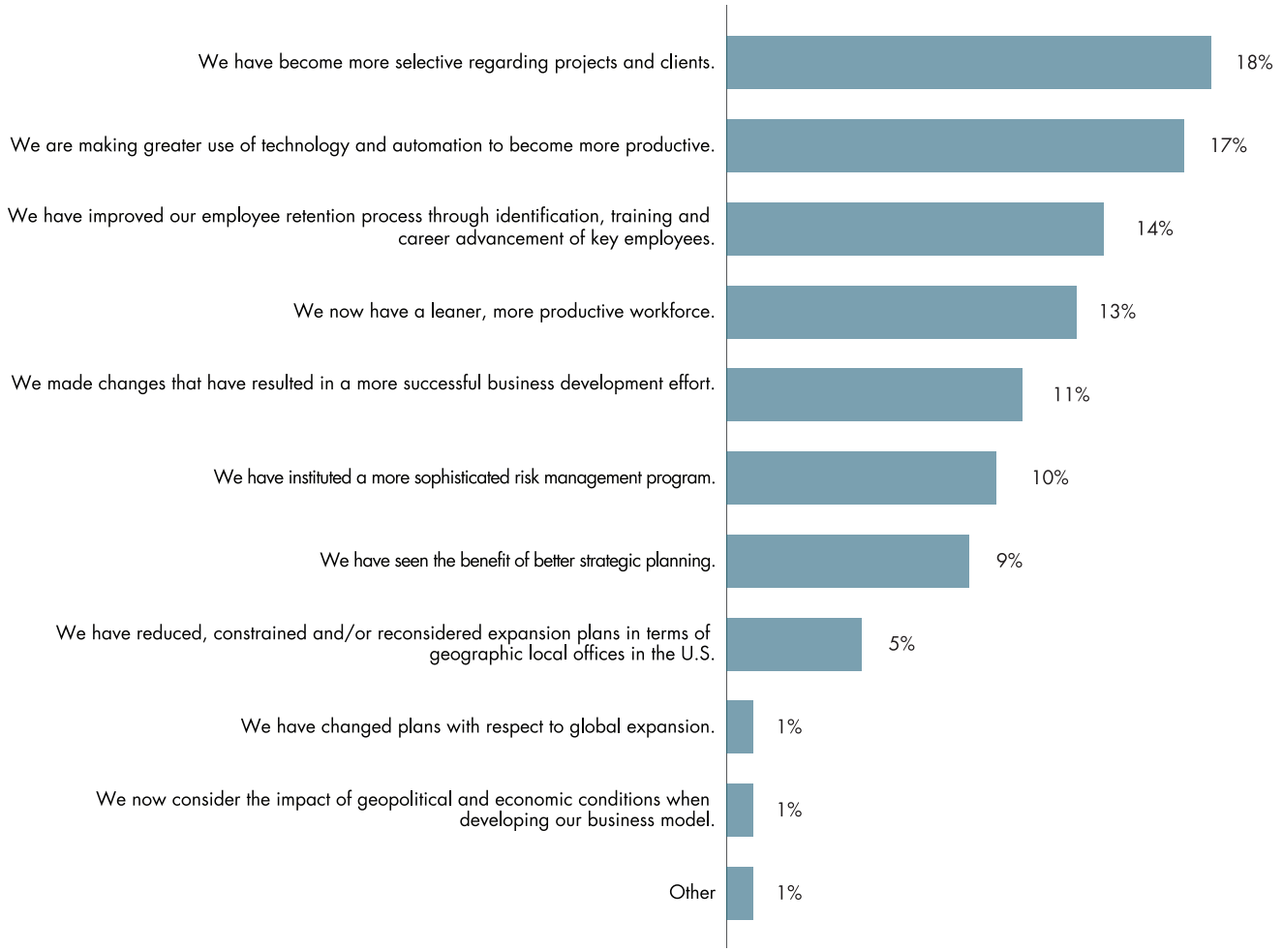
During the recession, becoming leaner and more productive was a focus for many companies in nonresidential construction. However, as backlogs grow, there is a tendency for struggle with productivity improvement programs when the pressures of getting the job done are growing.

The problem with productivity improvement is that it isn't a quick-fix solution that can be turned on as market forces grow. One approach where companies find the most success is lean construction and continuous improvement. One of the biggest points of resistance that contractors face when starting a formal continuous improvement program is, "We don't have time for that; we are busy and can't take anyone offline." Gregg Schoppman, a principal with FMI who focuses on productivity and project management, replies to such responses saying:

Contractors find it hard to change, even when they want to. For one thing, they cannot just shut down and fix things. They tried that in the recession. It didn't work out very well for most, because those who knew they needed to make changes didn't have the capital or the work to make changes on. It must be an "as-you-go" process. "We're too busy" is not an excuse. Do you ever want to be un-busy?

What does continuous improvement mean for commercial construction firms? The phrase "continuous improvement" seems intuitive to everyone. However, as we use it in the construction industry, it has a specific meaning as the name of an approach to improvement that has been known and used around the world for decades. In construction, continuous improvement is often associated with productivity improvement. However, it includes processes in the office or anywhere within the organization. It is for all of the company.

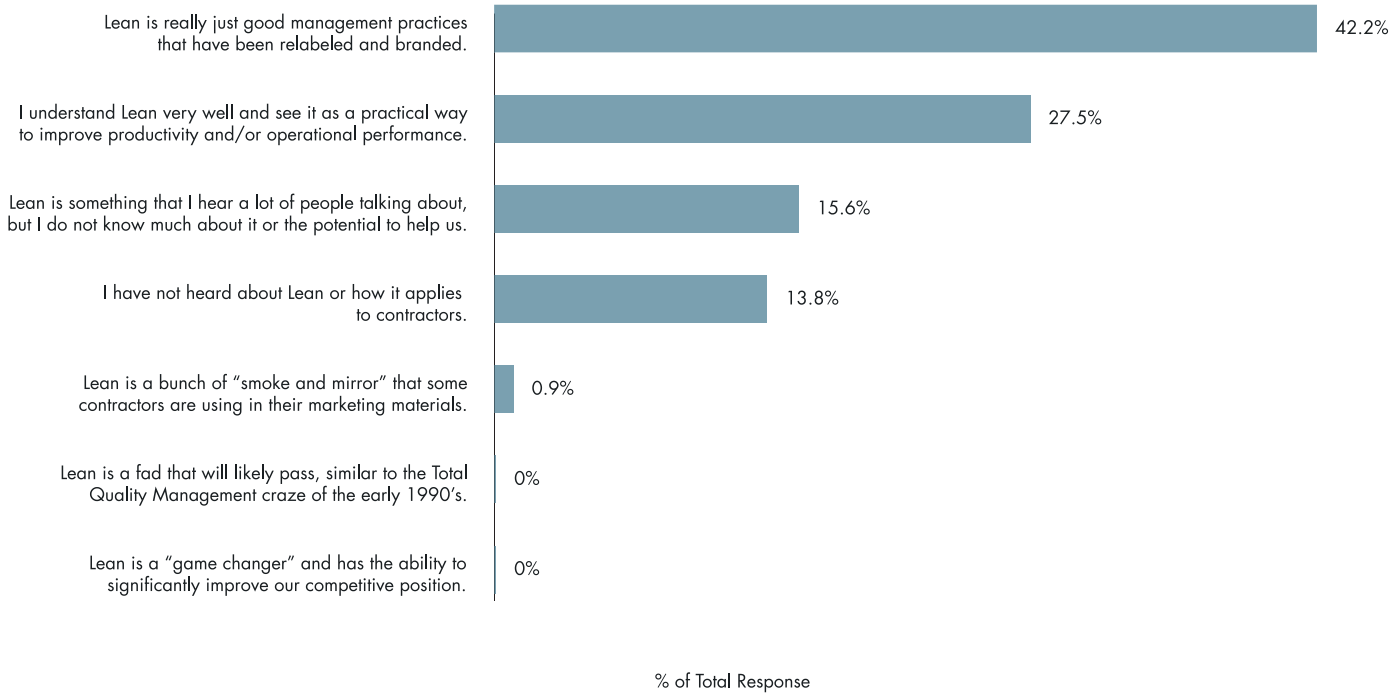
Exhibit 14: What Changes Did Your Company Make During the Recession that Are Proving to be Beneficial for Your Business Now? (Select all that apply.)



According to Gregg Schoppman, FMI, very few contractors are using a formal continuous improvement process at this time. When contractors have a problem or need to fix something they think is wrong, they will often call in a third-party resource. Larger companies may have someone in-house in charge of a continuous improvement process, but often they are really training managers, and training, while important in continuous improvement, is often used as a disguise for real continuous improvement. Construction firms just don't have the people or the training needed to work on it. However, they have the same needs to continuously improve their procedures and processes just as they need to keep up with safe working practices. Continuous improvement is scalable, and smaller companies usually have fewer people to train and work on fewer different types of projects.

Although the concept of continuous improvement has been around for many years, its proper application is not a trend in the construction industry. However, we see some increasing interest in Lean construction, as noted in our most recent productivity survey.

Exhibit 15: Thoughts and Perceptions About the Application of Lean Construction in Your Business



Call it what you will, there is always room in business for improvement. In fact, the markets demand it and competition drives it. Why would anyone hire a hundred men to dig a foundation these days when we have heavy machinery that can do the same work a lot faster and better? It took a while for heavy equipment to replace the shovel or power tools to replace a hammer and saw, but the world is changing faster than that now. New technologies, processes and ideas are needed to remain competitive. A culture of continuous improvement welcomes those ideas. If it is not a trend in construction at this time, it needs to be part of the "next big thing." Continuous improvement is the path to the next generation of best practices and improved performance.

Owners are again turning to more collaborative delivery methods and seeking value rather than simply low price. However, the rate of change is on the order of glacial.

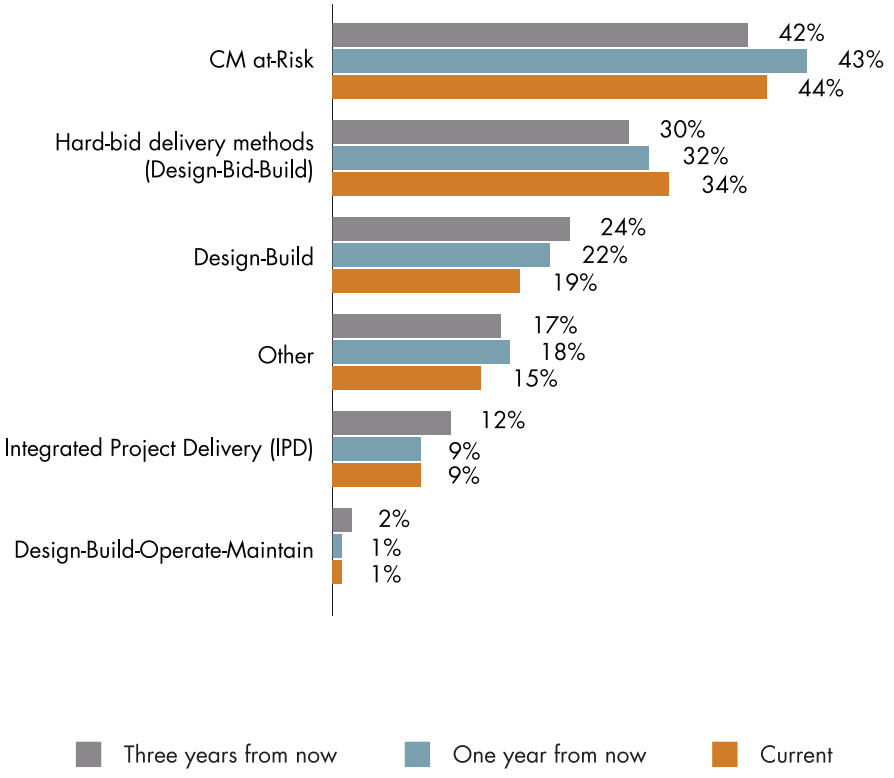
Construction Delivery Systems

In the second quarter of 2015, we asked FMI NRCI panelists what owners are currently demanding in the way of delivery methods and what the expectation is for change in these trends. We wanted to update our data on these trends. In particular, we were looking for a reversion from increasing the use of the traditional design-bid-build or hard-bid approach to the more collaborative or alternative delivery methods gaining in popularity before the recession. Generally, panelists confirmed the change that we expected. Owners are again turning to more collaborative delivery methods and seeking value rather than simply low price. However, the rate of change is on the order of glacial.

There are several reasons for the slow rate of change; chief among them is that construction doesn't change at the rate of pop culture. There are current contracts to complete, and some owners, particularly in the public sector, are required by law to use certain delivery methods. CM at-Risk is now allowed by most states, but those building CM at-Risk projects won't quickly move to IPD (Integrated Project Delivery). Design-build and IPD are expected to be growth areas for delivery methods, but IPD in particular, even though it offers many benefits to all parties, is not for everyone at this time. IPD, and even what has been

called IPDish, requires more sophisticated owners, designers and contractors in order to realize the full benefits of this delivery approach. It is worth noting that among those contractors responding, many tend to work with one delivery form or another, but the majority work with several delivery types. The one exception is the design-build-operate-maintain approach, which is a highly specialized area mostly for large industrial plants or complexes.

Exhibit 16: What Percentage of Your Projects is Currently Delivered with Each of the Following Major Delivery Methods, and What are Your Trend Expectations for Next Year and Three Years from Now? (Average Delivery Method Used, FMI NRCI Q2 2015)



Ownership Transition

The difficulties of weathering the recession and finding talented people to take on the role of leadership as baby boomers look at retirement have added to the difficulties of planning an orderly and profitable ownership transfer for most of the construction industry. We have talked and written about the coming critical problem of ownership transition for a decade or more now. It is no longer the light at the end of the tunnel; it is now the locomotive staring us in the face as 50% of construction firms will change ownership in the next 10 to 12 years. That still sounds like the problem is a long way off, but a large percentage of contractors are looking at ownership transition plans now, or should be. The following comments on the changing face of ownership transition were originally published in FMI's "Mergers and Acquisitions Advisor."

Planning the Lingering Ownership Transition

Ownership transition planning for commercial construction firms has historically focused on a transaction with retiring owners selling to the next generation. The transaction typically took place over a period of years and had a defined end. FMI is seeing a shift in the way sellers think of "retiring." Sellers are taking a slower approach to the sale, and sometimes the process does not have a defined end date.

1. **People are living longer –** The prospect of living to 90 or 100 means that retirements are longer, which, in turn, implies that retirement income may potentially be needed for decades.
2. **Traditional retirement investments have been underperforming for over a decade –** Since 1999, the stock market has been essentially flat, interest rates are nominal, and real estate has struggled. The strategy of living off the income from traditional retirement investments is not working very well. Trading stock in a profitable private business for traditional retirement investments is not very appealing economically.
3. **Many business owners want to stay engaged in their businesses –** Pure retirement does not appeal to all. The traditional model of working until the magic number of 65 is no longer desirable to many owners who still want to contribute while reducing their time obligations.
4. **Government's role in the economy undermines confidence in the future –** In combination, budget deficits, trade deficits, the falling dollar, entitlement liabilities and expectations of rising taxes undermine the confidence of business owners. Will inflation and taxes eat away at personal net worth and the retirement nest eggs in coming decades?

The reaction of some business owners to this environment is to put off transition planning indefinitely. Others sincerely want to sell and move towards retirement but are unsure how to proceed in the new environment. Some business owners feel the need to tie in the next generation with ownership, but they are not sure they are ready to make the full transition. For those who want to begin the process, FMI is seeing what we call a "Lingering Ownership Transition Strategy." It works like this:

1. The selling owner(s) begins a process of selling a portion of the business to the next generation with the intent of retaining 10% to 51% of the company indefinitely.
2. Selling owner(s) continues to work, drawing salary and benefits, while transitioning responsibilities of lesser interest to the next generation.
3. Put in place a buy/sell or stockholders agreement that protects the business and is in the best mutual interest of both selling shareholders and the next generation of shareholders.
4. Sellers maintain a flexible transaction structure that allows them to retain some ownership indefinitely, but also a structure that can be accelerated should full retirement be desired.

The advantages of this structure for the seller are that it maintains income for the indefinite future, holds exit options open and, hopefully, locks in the next generation. The owner's slow exit also provides stability for the organization, less financial strain on the company and, hopefully, a positive mentor for the next generation's leaders.

The disadvantages of this structure include the retention of business risk and the possible under-motivation of the next generation. This structure could be perceived positively or negatively by the next generation. A negative perception could result from the possible delay and uncertainty in gaining control

of the business. The next generation also may not look favorably upon sharing income with a less active, or exiting, owner. If structured fairly, the positive should be in the opportunity for increased ownership and leadership. The primary key to this strategy's success is developing and motivating the next generation. Prior to our long national recession, finding top, next-generation talent was already one of the greatest challenges facing leaders. This situation was likened to a "perfect storm" for the construction industry because of three factors that would transform the competitive landscape:

1. Industry image
2. Changing workforce demographics
3. Ineffective or nonexistent recruiting, development and succession planning

Many construction leaders assume that the "perfect storm" has blown over since the recession. However, a close examination of the three factors above reveals a different story. The construction industry still faces an uphill climb in marketing itself as an appealing profession for young people, who often assume it is dirty, dangerous and low-paying. It is unlikely that the talent that left the industry during the recession will return. Demographics are still a critical issue as the baby-boomer generation transitions out of senior roles in droves, leaving gaps that cannot be filled by the next generation. Finally, the recession has forced many companies to cut back on anything discretionary associated with talent development, which has had a major impact on recruiting, employee development and succession planning.

Companies that ready themselves for the new perfect storm affecting talent will be in a position to achieve considerable strategic advantage over less prepared companies and increase their odds of a successful ownership transition.

International Debt Problems

Although the U.S. has been enjoying a resurgent economy, European countries like Greece, Italy, Spain and Portugal are struggling. Weighed down by unsustainable debt and declining revenues, the threat of default on these debts continues to loom over the Euro economies. After years of rapid growth, China is also experiencing a slowdown in its economy, threatening the savings and investments made in a more bullish atmosphere in the last few years. For the time being, the Greek debt crisis has once again been averted. Although no longer front-page news, it would be foolish to think these debt problems have been solved. There is no sense of certainty in what long-term results of these problems and many other instances of global unrest will be.

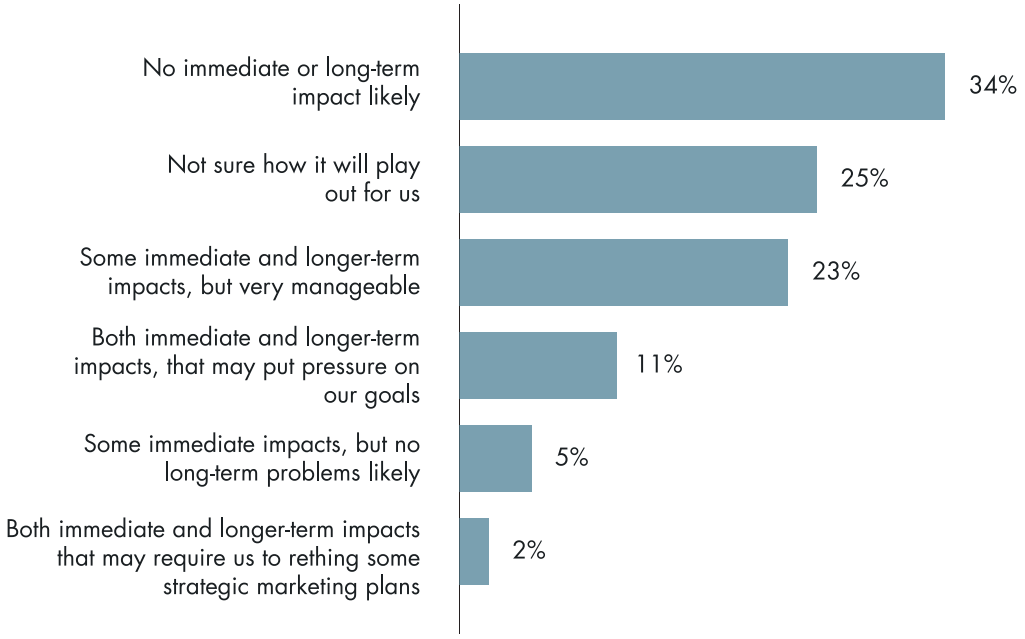
While most commercial contractors won't see any immediate changes in their markets due to these potential global financial concerns, the main concern is that market uncertainty can put owners' plans to build on hold. It could also tighten financial markets again, making it more difficult to get project financing. If the U. S. balance of trade become more unbalanced in favor of Europe and China due to currency devaluations against a strong dollar, there will be some people in the U.S. that lose jobs, thus decreasing consumer spending. The worst-case scenario leads to another global recession.

We asked NRCI panelists to give us their opinions on the potential effects to their business in light of ongoing economic crises abroad, i.e., the Eurozone (Greece, Italy, Spain and Portugal), Puerto Rico and market losses in China. However, 25% of our panelists were not sure how those various potential crises would eventually play out. There were a few NRCI panelists who noted they were more concerned about what might be happening in China. For instance, "Interest rates, China's slowing economic growth and a destabilized Middle East are all more worrisome than Greece." Their concerns were well-placed. China

devalued its currency by 4% over August 11-12, confirming what many suspected—China's economy was not quite as good as reports from China seemed to imply.

Investors are naturally willing to take on various amounts of risk, but when uncertainty meets opacity, the risk calculations become more complicated. Faced with that situation, on top of a long list of other "known unknowns," it appears that a number of supercomputers and nervous investors decided in unison to take some profits out of an otherwise bullish stock market. The market would stand corrected. The current shake-up in global stock markets is just the most recent sign of how much the global economy is tied together. When we consider large markets and the large corporations that work on that stage, we are talking about trillions of dollars (or whatever currency we want to use) and millions of jobs at stake. With technologies that level the playing field and improved global communications and transportation routes like the Panama Canal expansion, globalization is shrinking the planet, bringing all markets closer together. The construction industry is not immune to global changes; however, it is difficult to predict what those changes will be.

Exhibit 17: At this time, what impact do you think the growing list of economic crises developing in the Eurozone (Greece, Italy, Spain and Portugal) and Puerto Rico and market losses in China will have on your business?



Identifying the Customer and Forming Partnerships

The time is ripe for building product manufacturers to radically shift their focus from the inside to the outside. FMI does not suggest a wholesale abandonment of the operational excellence concentration that exists today, but a return to a more customer-centric orientation that served many firms well in years past. Even with several years of growth, many building products firms are still struggling to identify today's target customer, let alone develop the specific support programs needed to enhance the relationships and collaboratively build sales for both parties.

The market concerns faced by manufacturers are very much the same for commercial contractors. Contractors are more focused on identifying new customers as markets shift. For instance, if traditional bigbox stores continue to downsize or go out of business, who will replace those stores? If the growth in the market includes malls that are more multiuse-oriented with more boutique stores, commercial contractors must sharpen their capabilities to serve this market, whether it be changing delivery methods, collaborating with the owners, working greener or a number of other challenges. Manufacturers must match their marketing and delivery methods to the needs of the contractor and become partners in the process. By evaluating customers in terms of lifetime values, manufacturers can view these relationships in a somewhat different light and focus on long-term activities that provide benefit for both parties.

Most good customers are looking for a few favored suppliers that will work with them over the long term to enhance performance in a mutually beneficial fashion. By helping your targeted customers become more successful, you will sell more products to a better-managed, more financially sound and more loyal customer group.

Creating a true partnership with key customers is not a simple process; it requires some real work and discipline by both parties to maximize the value for all involved. At times, this effort may seem to be more trouble than it's worth to the firm and/or the customer. Yet, by providing customer development and other valuable support programs for your top customers, your firm enables them to successfully compete and grow in their respective market. These customers are the likely winners in up markets as well as down markets and will help drive your future success. This strategy doesn't mean lavish support or rewards to all channel partners or the continuation of programs that may be marginal at best. It does mean using tools other than price to continue to make warranted, prudent investments in helping the right customers enhance their performance. Targeted support programs that provide differentiation will pay dividends to key customers and, in return, to their preferred suppliers. Continuing to support these target customers to help them improve performance is a good strategy regardless of the current economic climate.

Creating a true partnership with key customers is not a simple process; it requires some real work and discipline by both parties to maximize the value for all involved. This positioning with target customers will provide dividends in today's growing market and a strong base when this period of market growth inevitably begins to fade.

Mergers and Acquisitions Activity Is Mixed

Although we are not yet able to discuss the building products market without reference to the "dark years," the repercussions of those years are positive for M&A dealmaking. Pace and scale of activity are both up with both strategic and financial buyers very active.

Healthier Companies

Dealmaking activity is up, in part, due to market leader firms becoming much healthier companies. In order to survive the recession, companies had to get to positive cash flow (or at least neutral) in the new demand reality of the 2009-2011 period. This relentless focus on efficiency created lower cost structures. Once the market started to inch its way toward recovery, profit margins soon returned to prior levels, despite the lower volumes; this has gone a long way toward repairing damaged balance sheets. With rising

earnings and decreasing debt levels, many of the larger industry players have repaired and reloaded their balance sheets.

Growing Fast in a Moderate Growth Market

Five years of moderate growth is a nice run, but it does not quite get the blood pumping. What is a manufacturer (or distributor) with strong profit margins, a healthy balance sheet and grand plans for growth to do in such a market? The only surefire way to outpace market growth is to make a significant acquisition. Most of the companies we talk to in the market are actively scouring for acquisitions, and the demand for attractive building products companies to purchase is high. A variety of factors drive M&A activity, but perhaps the most important is near-term market forecast – when market conditions seem ripe for growth, investors desire to put more money to work in the sector.

Overall, M&A levels across all sectors of the U.S. economy have largely rebounded from the cyclical lows experienced after the Global Financial Crisis. However, the number of transactions involving general building construction firms remained quite sluggish. The depressed M&A activity involving general building construction firms is a direct byproduct of the prolonged building downturn experienced in most markets since 2010. Robust transaction activity on a widespread basis will not occur until there is a pattern of sustained economic growth and an expansion of commercial, institutional and public market building activity.

Further reflecting sustained low-margin revenue activity, contractors have embarked upon a relentless focus to realize overhead efficiencies and maximize nontraditional margin enhancements (risk management, technology, self-perform, etc.). Those contractors with greater sophistication in realizing profitability in this way are well-positioned to prosper as the construction market improves. These same firms will also consider acquisitions as a viable growth strategy as they may be able to bring operating efficiencies to targets unable to achieve them independently.

Consolidate the Positive

On the manufacturing distribution side, 2015 was a year of large company consolidation. Goldilocks market conditions led to unprecedented merger activity among large players. Builders First Source acquired ProBuild, Stock Building Supply and BMC West agreed to merge, Beacon Roofing Supply agreed to acquire RSG, U.S. LBM Holdings changed ownership, and ABC Supply continued its roll-up strategy. In a bit of a surprise, Home Depot acquired Interline Brands.

These transactions are large bets on the future direction of the market. That so many firms feel so comfortable investing large additional sums of capital into the building products industry is a huge signal that expectations for market growth are positive. But every transaction has two sides: If expectations are so great, why sell now? That's where Goldilocks comes in. A year or two ago, these deals would not have happened, as prices were lower, and/or the acquiring balance sheet would not have supported the expenditure. Today, a seller can receive what the company deems a fair price, while a buyer feels there is still enough runway ahead to make a decent return on the investment. Add into the mix debt markets that are flush and accommodating, and we have a recipe for significant deal activity.

A Buyer's or a Seller's Market?

With demand high and the supply of attractive companies low, one would expect prices to increase, and they have. Purchase prices – measured in multiples of EBITDA – are high by historical standards, creating a seller's market. High-quality companies that hit the market today are fetching attractive prices. But in many ways, it is a buyer's market too. Long-term demographic trends foretell a good amount of growth left to go in housing, and commercial forecasts are positive as well.

Conclusion

The good news for commercial construction is that it has finally been lifted from the doldrums of the recession and post-recession. However, slow growth in many areas of the country will continue to mean that this is a highly competitive market. Cultural changes, technology growth and population movement all contribute to shifting markets toward metropolitan hot spots. The changing factors in the market will favor those who do not just expect it to act as they did before the Great Recession. Some owners are downsizing while new businesses spring up to cater to the new, young consumers. Competition will also come from the move to shop and conduct greater amounts of business online. The competitive nature of commercial construction will baffle some and provide opportunities for those who strive to understand it and collaborate with customers on the cutting edge. While technology appears to be the main focus for productivity improvement to get a competitive edge, the most important area to understand is the customer at all levels from the consumer on the street to the corporations trying to capture share of wallet and share of market. Ultimately, in such a competitive market, market share from profitable customers is king. Reaching that level of understanding and competitiveness will require feet on the street and mining the market data for underserved niches and with the goal of being there first.

For more information please contact:

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FMI NONRESIDENTIAL CONSTRUCTION FORECAST

Lodging

Lodging construction continues a trend of rapid growth of 15% for 2015 and an expected rate of 12% for 2016 to $20.8 billion. The current pace is expected to slow to only 8% growth in 2017. Increased business travel and improving room rates combine to bring this market back from the overbuilt prerecession levels.

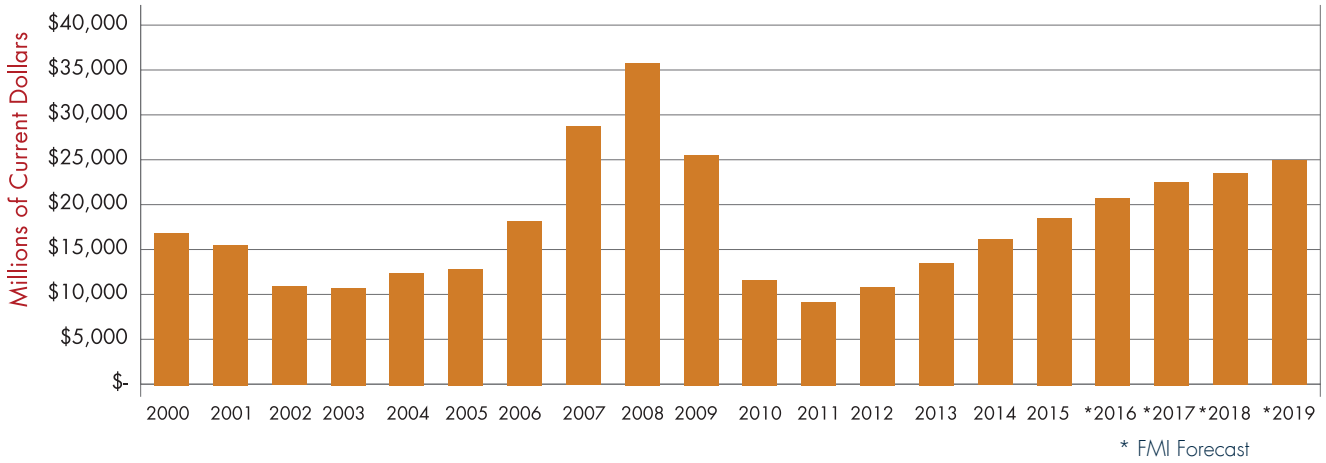
TRENDS:

- According to HospitalityNet, "PKF-HR is forecasting gains in excess of 10% for both 2015 and 2016 for unit-level net operating income, extending the streak of double-digit increases in hotel profits to six consecutive years."
- Lodging Econometrics reports, "Now at 3,885 Projects/488,230 Rooms, the Total Construction Pipeline has shown seven consecutive quarters of growth, with the last three quarters posting Year-Over-Year (YOY) gains of 20% or greater." (Lodging Econometrics, May 2015)
- STR reports the "industry's occupancy increased 1.2% to 74.3%. Average daily rate for the week was up 3.9% to US$122.30. Revenue per available room increased 5.1% to finish the week at US$90.85." ("U.S. Hotel Occupancy Up 1.2% to 74.3% Week Ending August 15th – 2015," STR, August 20, 2015)
- The greatest amount of growth will continue to be upscale properties and event locations.
- Green building is more commonplace in remodels and retrofits.

DRIVERS:

- Occupancy rate
- RevPar
- Average daily rate
- Room starts

LODGING CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



Office

Office construction has slowed since reaching 21% in 2014, but the current rate of 15% growth for 2015 continues to show that there is still steam in the office construction recovery. We expect growth to carry over into 2016 and beyond, but at a slower rate. Continued growth in the technical sector and in larger metropolitan areas like New York City will keep rents and absorption of new space high.

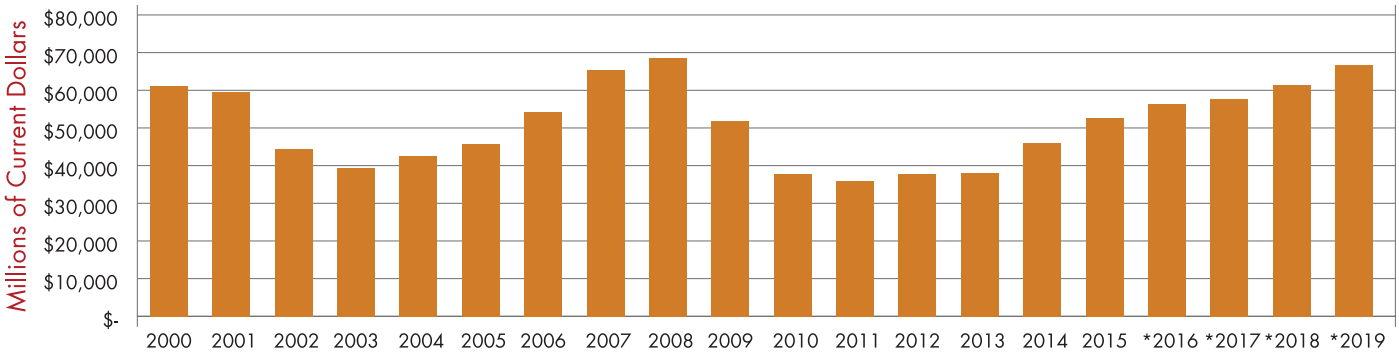
TRENDS:

- According to the National Association of Realtors, "office vacancies are expected to drop below 15.0 percent by the end of this year. Rents for office properties rose 2.5 percent over the first six months of 2015, leading to projections that—at the current demand pace—they will close the year higher by 5.0 – 6.0 percent from 2014." ("Commercial Real Estate Outlook: 2015.Q3," National Association of Realtors)
- JLL's "Office Investment Outlook, Q2 2015" reports, "Leasing activity surges as scientific and technical companies continue to grow. More than 40.0 percent of all office leases 20,000 square feet and larger are exhibiting growth this quarter."

DRIVERS:

- Office vacancy rate
- Unemployment rate

OFFICE CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



* FMI Forecast

Commercial

Commercial construction is expected to end 2015 with growth of 8% on top of 18% growth for 2014. The return to growth of one of the largest construction sectors, weighing in at $67.7 billion for 2015, reflects the improvement in the U.S. economy. Some of the fastest-growing areas are drinking places and food services. While many national chain stores are closing properties, new startup businesses are taking off in major metro areas. Though online sales continue to grow, the future will be an integration of storefronts and online marketing.

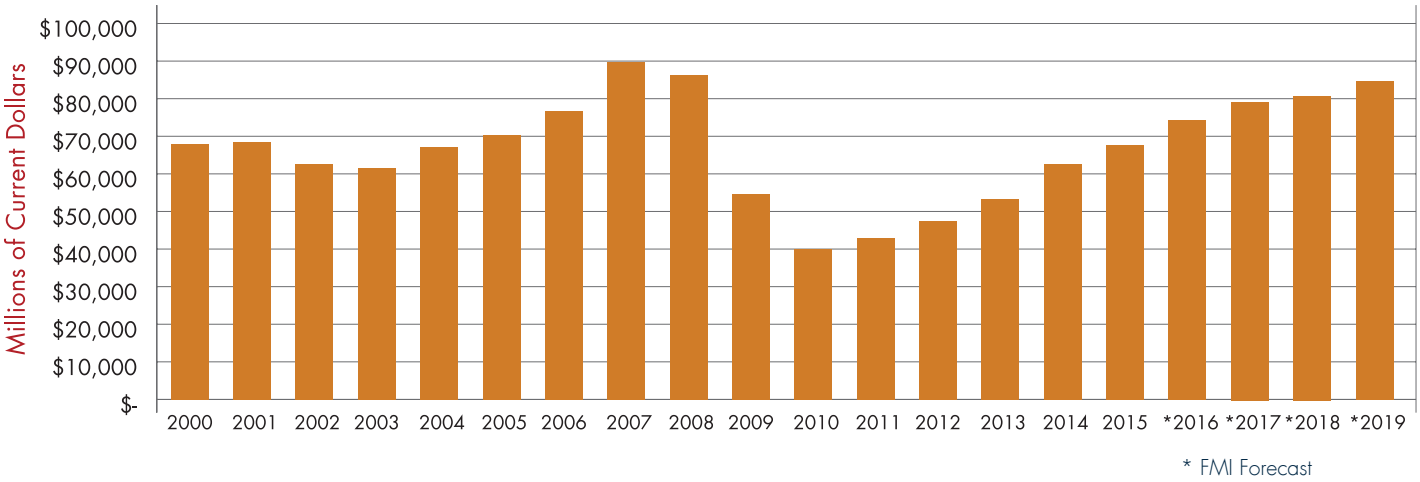
TRENDS:

- According to the U.S. Census Bureau, "[A] advance estimates of U.S. retail and food services sales for July, adjusted for seasonal variation and holiday and trading-day differences, but not for price changes, were $446.5 billion, an increase of 0.6 percent (±0.5%) from the previous month, and up 2.4 percent (±0.7%) above July 2014. Total sales for the May 2015 through July 2015 period were up 2.3 percent (±0.7%) from the same period a year ago." (U.S. Department of Commerce, August 13, 2015)
- The Department of Commerce also reported, "Food services and drinking places were up 9.0 percent (±3.3%) from July 2014, and motor vehicle and parts dealers were up 6.9 percent (±2.8%) from last year." Nonstore retailers grew 5.2% over 2014.
- Consumer confidence rose 10.5 points in August to 101.5 (The Conference Board).
- Closings of well-known chain stores like Sears, JCPenney and RadioShack signal a change in consumer shopping habits as well as an example of traditional brands' inability to move with the trends.

DRIVERS:

- ↑ Retail Sales
- ↑ CPI
- ↓ Income
- ↑ Home prices
- ↑ Housing starts
- ↓ Housing permits

COMMERCIAL CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



* FMI Forecast

Health Care

Health care construction is returning to a more historical growth rate for 2015 through our forecast horizon of 2019. Construction put in place for health care construction should end up at $40.4 billion for 2015 and grow to $1.9 billion in 2016. Although traditional large hospital projects are returning to the drawing boards and starts, the bulk of the work will be renovation and additions as well as outpatient care.

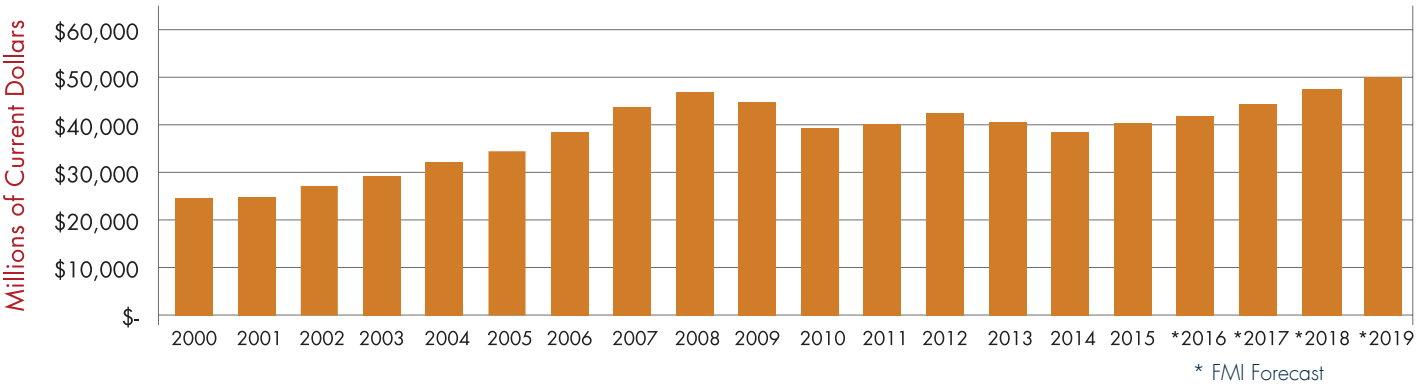
TRENDS:

- Hospitals cautious with new investment due to changing nature of health care and insurance as well as the need for more qualified health care workers to staff any additions.
- Veterans Administration hospitals rocked by poor management and patient care, old facilities and huge construction cost overruns.
- According to Health Facilities Management, "Ambulatory care accounts for approximately one-third of health care spending in the United States, slightly more than inpatient care, according to the U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality."
- "Renovation and expansion projects will account for about 73% of total healthcare-related construction." ("Giants 300 Report. Hospital and medical office construction facing a slow but steady recover." Building Design and Construction, August 6, 2015)
- The new model for hospitals is the medical center with a cluster of offices including beds, which will deliver more of a patient's needs.
- Nontraditional funding sources for private nonprofit facilities.
  - Private development and equity
  - Government or government-backed
  - Pension and life insurance companies

DRIVERS:

- ↑ Population change younger than age 18
- ↑ Population change ages 18-24
- ↑ Stock market
- ↓ Government spending
- ↑ Nonresidential structure investment

HEALTH CARE CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



Education

Our forecast for education construction has changed little in recent reports. The good news remains that this sector is growing again, although at a continued low rate of 3% for 2015 and an expected 4% for 2016. Although tax revenues have been improving for about half the states, increases in funding for school construction are slow to return to the highs prior to the recession. That means the need for new and renovated schools will continue to grow in most parts of the country. The National Education Foundation (NEA) reports that $197 billion is "needed for repairs, renovations and modernizations to bring on-site public schools up to a good overall condition." (NEA, September 9, 2014)

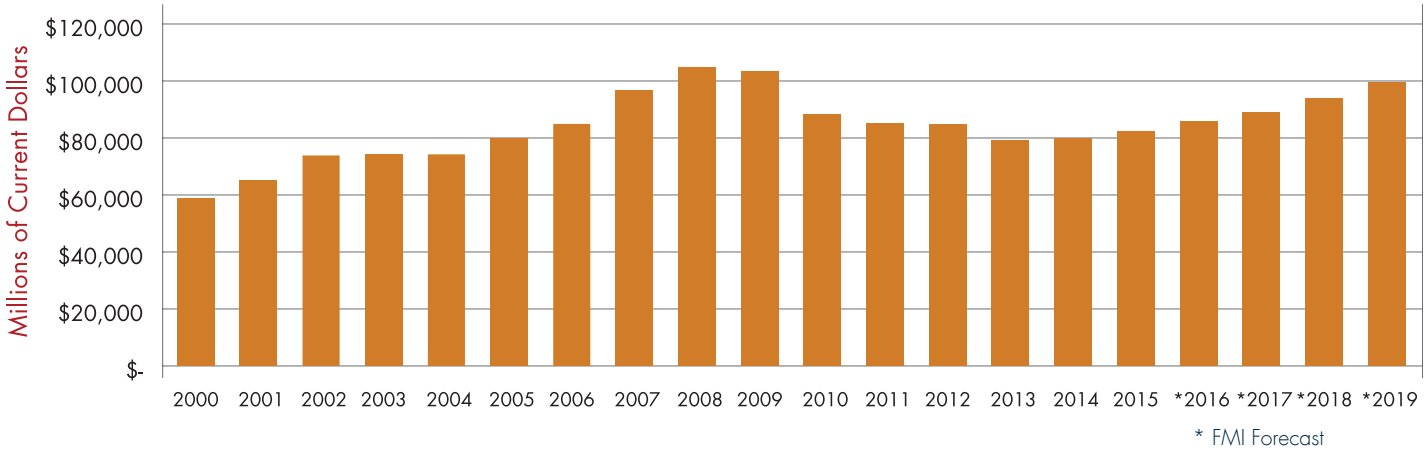
TRENDS:

- Significantly less funding from states for K-12 schools.
- Enrollment growth 2.5 million in the next four years.
- New designs for schools will be more flexible for changing classrooms and greater use of natural light. Expect more use of modular building designs.
- Greater attention to reducing energy use and employing green building technologies.
- Renovation and additions to current school buildings will continue to grow in comparison to new school projects.
- Greater focus on safe schools, as the threat for shootings on campus continues to rise.

DRIVERS:

- ↑ Population change younger than age 18
- ↑ Population change ages 18-24
- ↓ Stock market
- ↓ Government spending
- ↑ Nonresidential structure investment

EDUCATION CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



Religious

Religious construction continues to decline with our current forecast for 2015 indicating no growth, and the outlook for 2016 is just 2% growth. Although the recession can be seen as a primary reason for slow growth in this sector, there are also many other changes in the religious landscape, including a changing mix of religious faiths in America and fewer people who consider themselves regular churchgoers, even if they still belong to a certain faith. Many new churches are small and established in existing buildings like those found in vacated shopping centers.

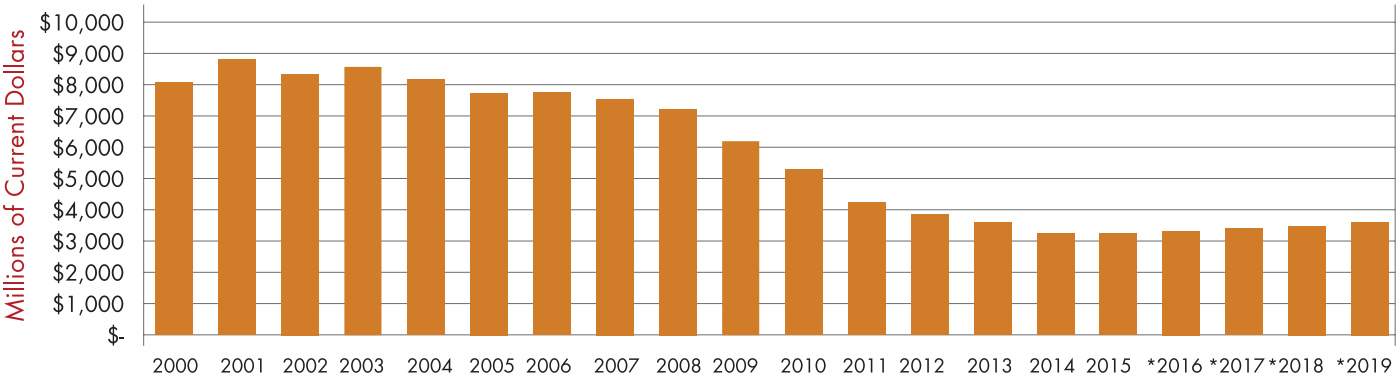
TRENDS:

- The lending environment continues to be a challenge for many congregations.
- Establishing a capital campaign is becoming increasingly common.
- Many churches are seeing tremendous declines in contributions and tithes.
- PEW Research Center reports the share of people "who describe themselves as Christians has dropped by nearly eight percentage points in just seven years, from 78.4% in an equally massive Pew Research survey in 2007 to 70.6% in 2014. Over the same period, the percentage of Americans who are religiously unaffiliated – describing themselves as atheist, agnostic or 'nothing in particular' – has jumped more than six points, from 16.1% to 22.8%." (America's Changing Religious Landscape, PEW Research Center, May 12, 2015)
- New methods for charitable giving, including online giving and donation collections, are empowering religious organizations.

DRIVERS:

- GDP
- Population
- Income
- Personal savings rate

RELIGIOUS CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



* FMI Forecast

Public Safety

Spending for public safety construction is currently on the decline with our forecast calling for a 3% drop in 2015 and a return to only 2% growth in 2016. In part, this is largely the result of reduced government spending. Otherwise, there are questions as to how much should be privatized or publicly funded. The prison breakout in northern New York in 2015 put some light on the age and condition of some of the prisons in the country.

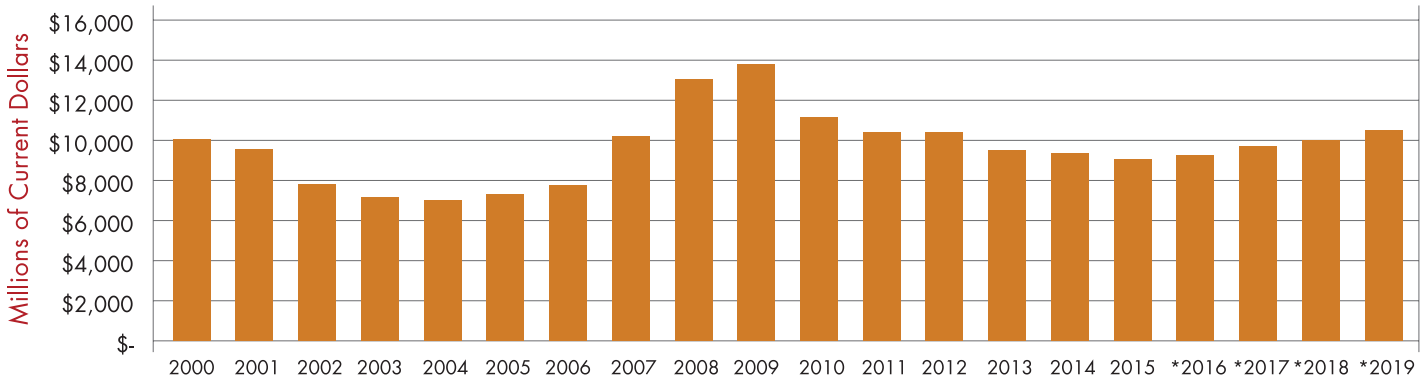
TRENDS:

- "The federal prison system is increasingly overcrowded. Overall, the federal prison system was 36% over its rated capacity in FY2013, but high- and medium security male facilities were operating at 52% and 45%, respectively, over rated capacity. At issue is whether overcrowding might lead to more inmate misconduct."
- "While our country is home to only 5% of the world's total population, we are home to 25% of the world's prison population." (Sen. Cory A. Booker, CNN, April 23, 2015)
- Private corporations now operate 5% of the 5,000 prisons and jails in the U.S. The private prison industry is growing at a rate of 30% per year.
- CM at-risk or design-build arrangements will increase.
- P3s overcome shortfalls in public financing.

DRIVERS:

- ↑ Population
- ↓ Government spending
- ↑ Incarceration rate
- ↑ Nonresidential structure investment

PUBLIC SAFETY CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



* FMI Forecast

Amusement and Recreation

Amusement and recreation construction growth jumped to 11% in 2015 after growing 9% in 2014. Our forecast calls for a slower 8% growth in 2016, but still strong compared with most sectors. Sports venues are promoted as job creators with the ability to revitalize many dilapidated areas around a city. While many question the return on investment when public money is concerned, America still loves its sports and is willing to invest its money to partake in the pastime, whether at the stadium or in front of the big screen TV.

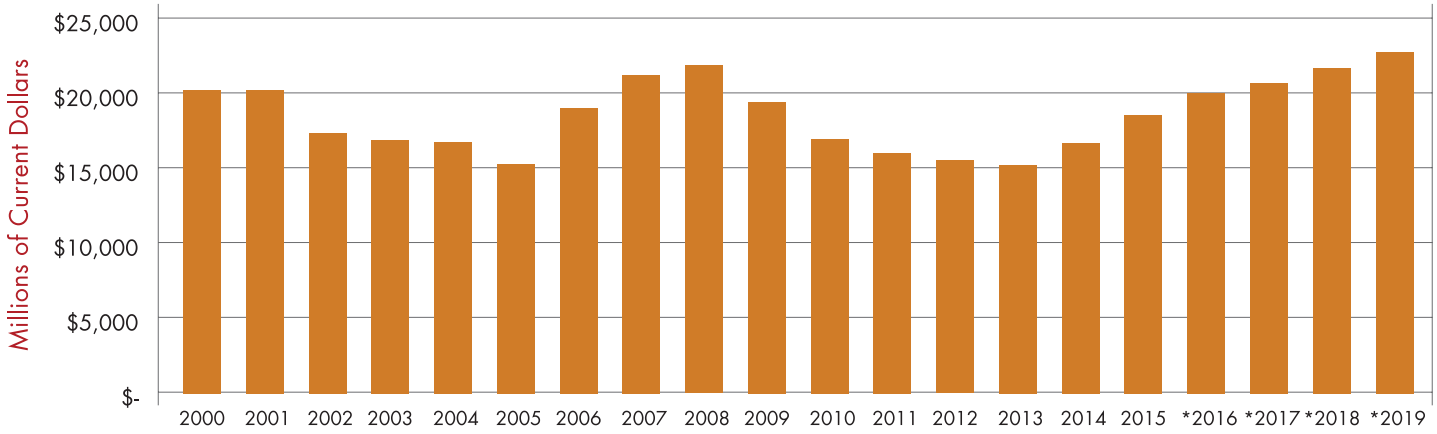
TRENDS:

- The Tropicana Las Vegas was sold to Penn National Gaming. According to Meeting and Conventions online magazine, "In the first phase of a two-part, three- to five-year plan, Penn will invest approximately $20 million over the next six to nine months on facility improvements and the integration of the property into its portfolio." (August 25, 2015)
- A new, privately funded indoor arena was recently announced by the partnership of AEG and MGM Resorts International. The Las Vegas arena will have 20,000 seats and is expected to cost $375 million.
- Building Design and Construction reported recently that "the Green Bay Packers will break ground on Titletown District, a mixed-used development west of the NFL team's home of Lambeau Field." (August 24, 2015) This is not a sports venue, per se, but characteristic of mixed-use development around sports venues.
- Public/private venture planned for the campus of UNLV includes a 50,000-seat, domed stadium but still waiting approvals and taxpayer votes on plan to allow the project to be tax-free.
- Competition in the gaming sector will draw business away from some existing gambling centers, such as Atlantic City and Las Vegas, as well as from other public arenas.

DRIVERS:

- ↑ Income
- ↑ Personal savings
- ↓ Unemployment rate

AMUSEMENT AND RECREATION CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



* FMI Forecast

Transportation

Transportation construction achieved a solid 9% growth in 2015, and it is expected to match that growth rate for 2016. After Vice President Biden compared LaGuardia Airport with a third-world country, it is finally breaking ground on a $4 billion renovation or nearly a complete rebuild. Like many airports near major metropolitan areas, it is landlocked, thus restricting the ability to build new and badly needed runways. However, the LaGuardia project will manage to rearrange buildings to allow for new runways.

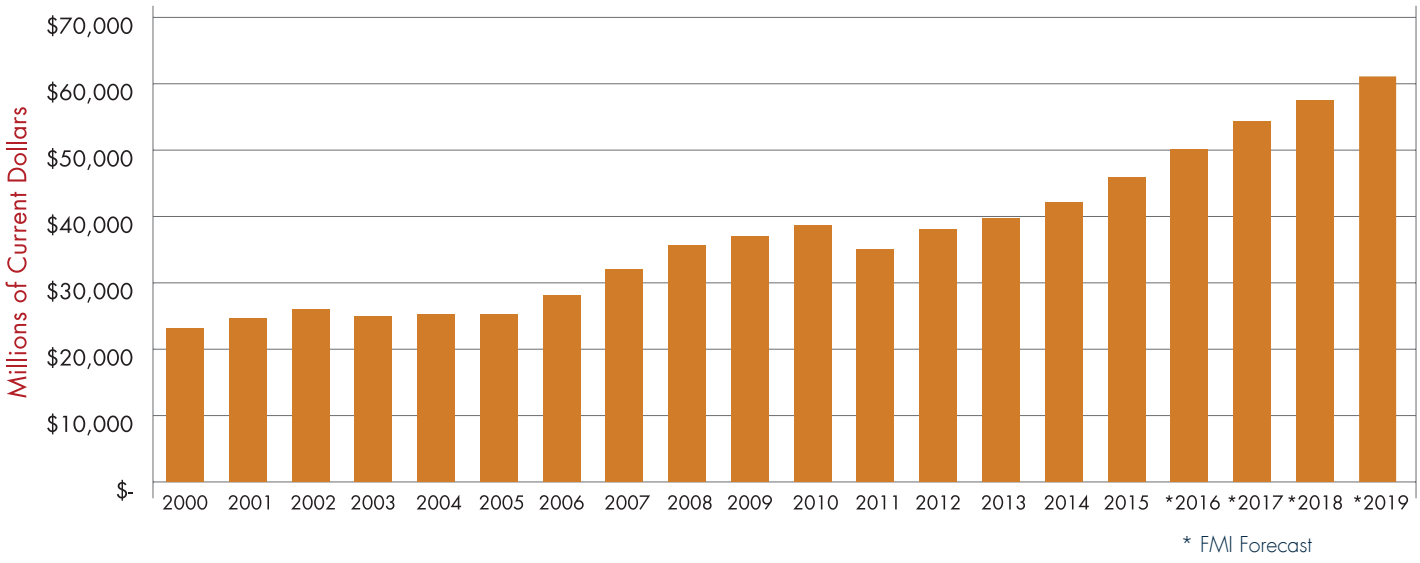
TRENDS:

- According to the American Association of Railroads report for July 15, 2015, "Total carloads for the week ending July 11, 2015 were 271,494 carloads, down 6.6 percent compared with the same week in 2014, while U.S. weekly intermodal volume was 262,603 containers and trailers, up 2.4 percent compared to 2014." (AAR, July 15, 2015)
- The FAA Modernization and Reform Act will provide $63.6 billion for the agency's programs between 2012 and 2015.
- "The 2015 FAA forecast calls for U.S. carrier passenger growth over the next 20 years to average 2.0 percent per year, slightly lower than last year's forecast. The sharp decline in the price of oil in 2015 is a catalyst for a short lived uptick in passenger growth." (FAA Aerospace Forecast Fiscal Years 2015-2035)
- High-speed rail is slow to get projects off the ground due to state funding and political resistance.
- The recent disaster involving an Amtrak train derailment in Philadelphia points up the need for improving transportation infrastructure as well as safety procedures.

DRIVERS:

- ↑ Population
- ↓ Government spending
- ↓ Transportation funding

TRANSPORTATION CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



* FMI Forecast

Communication

Communication construction put in place will improve by 4% over last year. We expect between 3% and 5% growth each year through 2019. The trend for communications is likely to be more integration and mergers in order to capture market share. The current trend is for building more data centers and beefing up security and privacy against potential interlopers and severe weather events. The passing of new net neutrality regulations by the FCC is designed to protect the free flow of content on the Internet. This means that access providers cannot charge special rates for data flows or slow down the delivery of certain content to others. With mergers and proposed mergers, we will see a rise in multimedia giants.

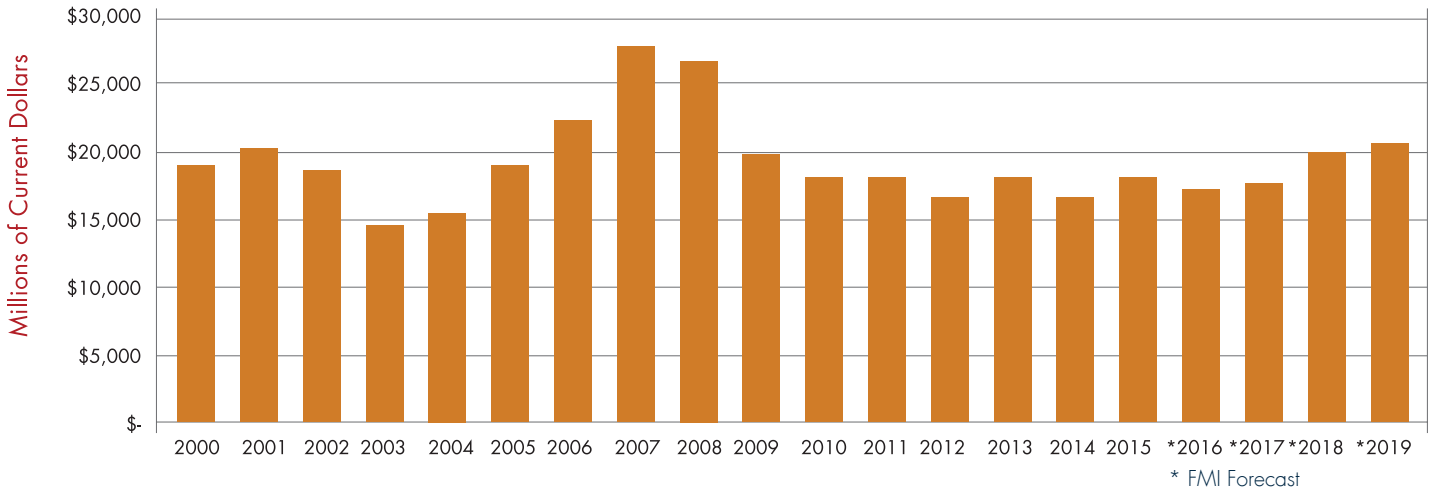
TRENDS:

- The AT&T/Direct TV merger has been approved. One of the stipulations of the approval is that AT&T connects fiber-optic service to 12.5 million new customer locations.
- "Mini towers" for increasing coverage and spectrum will proliferate rapidly in the next five years.
- Google Fiber is deploying high-speed gigabit connections in selected metro areas.
- Data security is critical for large businesses and governments in the face of potential disasters and threats from hackers and foreign enemies.

DRIVERS:

- Innovation/technology
- Global mobility
- Population
- Security/regulatory standards
- Private investment

COMMUNICATION CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



Manufacturing

Manufacturing is currently the fastest-growing construction sector at 18% for 2015. However, we expect that rate to slow in 2016 to just 5%. Continued low energy prices will hold down capacity additions in the oil and gas sector, but help those relocating or expanding in other areas of manufacturing including the current boom in the petrochemical areas. One concern, like much of the construction industry, is the lack of trained personnel needed to keep up with growing backlogs. Current fluctuations in the stock market and the future direction of the Chinese economy will be watched closely by those considering adding new manufacturing plants or relocating to the U.S. from offshore locations.

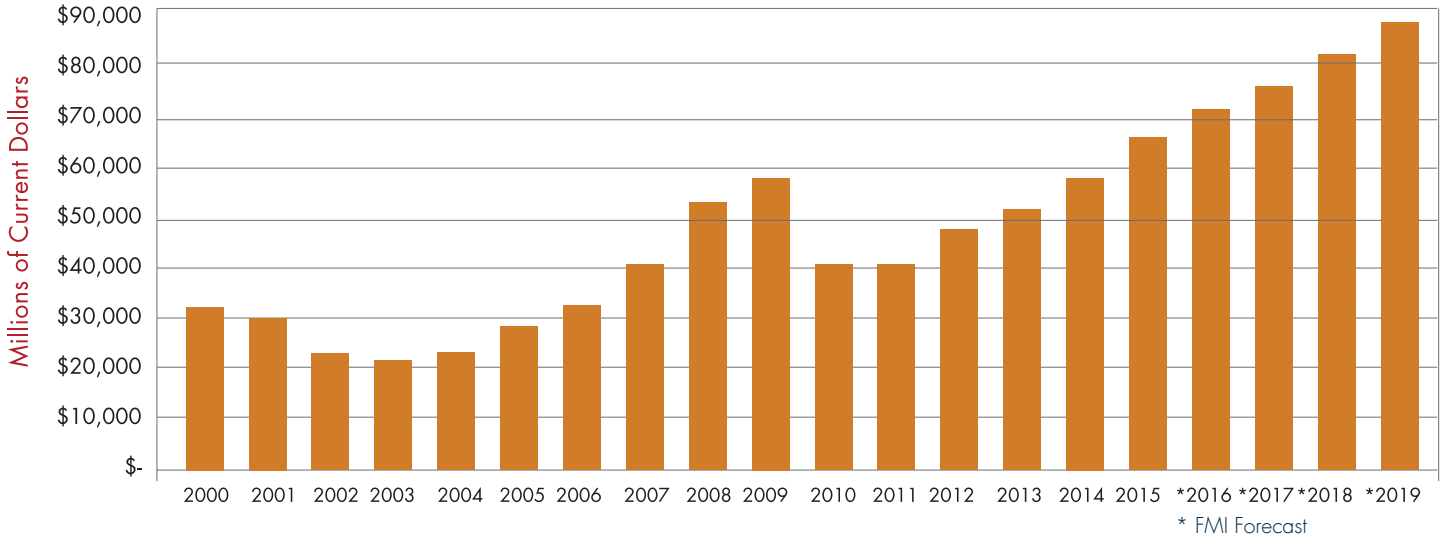
TRENDS:

- With little change since last quarter, manufacturing capacity utilization rates are at 77.7% of capacity in July 2015, which is near the historical average.
- The U.S. Department of Commerce reports, "Nondefense new orders for capital goods in July increased $0.9 billion or 1.1 percent to $82.3 billion. Shipments increased $0.1 billion or 0.1 percent to $79.3 billion. Unfilled orders increased $3.1 billion or 0.4 percent to $762.2 billion. Inventories increased $0.2 billion or 0.1 percent to $177.3 billion."
- "Reshoring of manufacturing" may experience setbacks as long as the dollar stays strong in international markets.
- "New orders for manufactured durable goods in July increased $4.6 billion or 2.0 percent to $241.1 billion, the U.S. Census Bureau announced today. This increase, up two consecutive months, followed a 4.1 percent June increase. Excluding transportation, new orders increased 0.6 percent. Excluding defense, new orders increased 1.0 percent." (U.S. Census Bureau, July 2015)
- The Manufacturing ISM® Report On Business® reports the PMI for August 2015 was at 51.1%.

DRIVERS:

- ↓ PMI
- – Industrial production
- – Capacity utilization
- ↑ Durable goods orders
- ↑ Manufacturing inventories

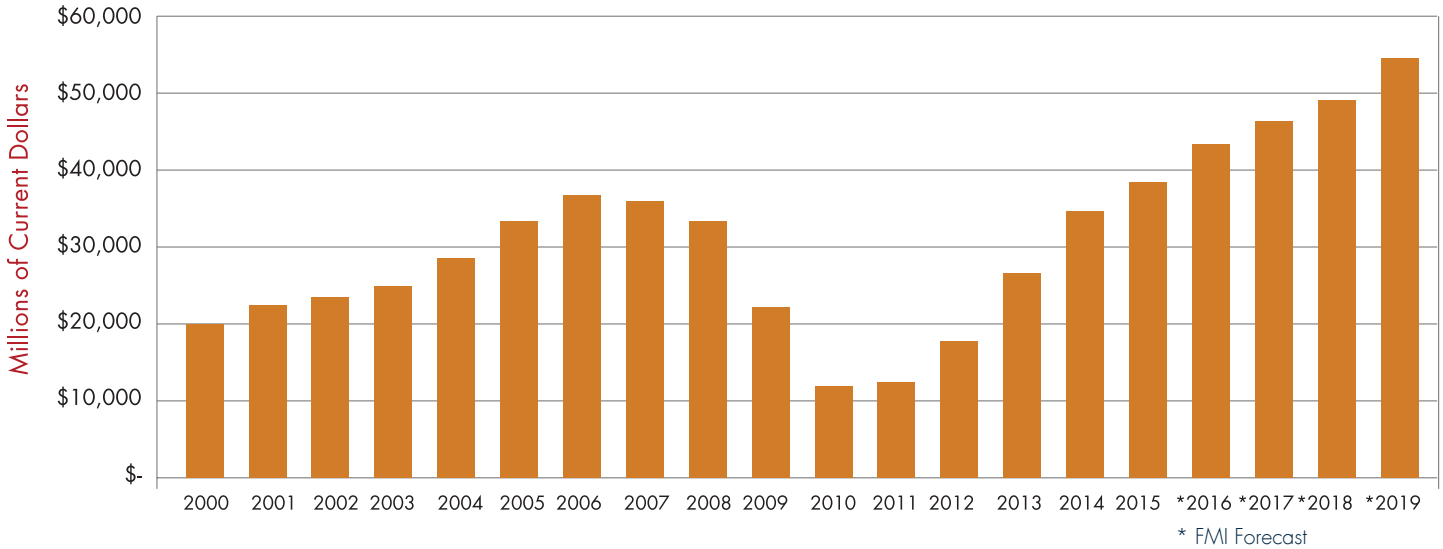
MANUFACTURING CONSTRUCTION PUT IN PLACE
Forecast as of Q3 2015



Multifamily High-Rise

After a rapid rise for multifamily post-recession, there is the sense that it is temporarily overbuilt in some areas. The growth of residential purchases of new and existing homes has also slowed multifamily momentum. Currently, nationwide, there is more demand than supply for housing, as the current supply is at 5.2 months as of July 2015. That compares with a supply of 5.1 months in March and a supply of 12.2 months at the height of the recession in January 2009.

Large Multifamily Construction
(4+ Stories)



Construction Put in Place
Estimated for The United States
Millions of Current Dollars
3rd Quarter 2015 Forecast (based on 2nd Quarter 2015 Actuals)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RESIDENTIAL BUILDINGS										
Single-Family	113,310	109,984	131,816	167,364	191,692	209,415	229,917	249,885	274,366	299,167
Multifamily	17,405	17,821	26,293	38,545	50,689	56,151	63,136	68,108	72,596	79,413
Improvements*	118,398	124,853	128,738	135,306	103,613	110,125	115,485	119,937	125,609	133,529
Total Residential	**249,112**	**252,657**	**286,847**	**341,215**	**345,993**	**375,691**	**408,538**	**437,931**	**472,571**	**512,109**
NONRESIDENTIAL BUILDINGS										
Lodging	11,635	9,129	10,836	13,484	16,124	18,539	20,762	22,521	23,476	24,916
Office	37,850	36,011	37,800	37,979	46,056	52,579	56,306	57,660	61,229	66,691
Commercial	40,100	42,816	47,335	53,159	62,708	67,659	74,414	79,134	80,770	84,696
Health Care	39,344	40,204	42,544	40,689	38,410	40,416	41,898	44,277	47,454	50,129
Educational	88,405	84,985	84,672	79,060	79,700	82,277	85,810	88,956	93,825	99,362
Religious	5,288	4,239	3,846	3,590	3,248	3,237	3,317	3,394	3,488	3,610
Public Safety	11,153	10,407	10,431	9,506	9,380	9,079	9,284	9,695	10,041	10,516
Amusement and Recreation	16,943	15,995	15,480	15,207	16,630	18,499	19,972	20,662	21,650	22,760
Transportation	38,340	34,737	37,862	39,459	41,786	45,655	49,917	54,086	57,278	60,842
Communication	17,730	17,685	16,165	17,783	17,093	17,742	18,716	19,237	19,971	20,792
Manufacturing	41,178	40,559	47,741	50,548	57,761	68,282	71,850	75,920	81,427	86,970
Total Nonresidential Buildings	**347,966**	**336,767**	**354,712**	**360,464**	**388,896**	**423,964**	**452,247**	**475,542**	**500,609**	**531,285**
NONBUILDING STRUCTURES										
Power	77,945	75,185	97,434	93,317	101,216	93,540	96,715	99,238	108,749	118,521
Highway and Street	82,529	79,322	80,546	81,364	84,220	86,350	87,855	89,683	90,317	91,934
Sewage and Waste Disposal	25,991	22,710	22,261	22,425	23,321	24,808	25,731	26,729	27,481	28,381
Water Supply	15,322	14,163	13,218	13,597	13,334	13,842	14,260	14,485	14,851	15,507
Conservation and Development	7,172	7,538	6,228	5,967	7,323	7,747	8,144	8,562	9,177	9,820
Total Nonbuilding Structures	**208,959**	**198,918**	**219,687**	**216,670**	**229,414**	**226,286**	**232,705**	**238,697**	**250,575**	**264,162**
Total Put in Place	**806,037**	**788,342**	**861,246**	**918,349**	**964,303**	**1,025,941**	**1,093,490**	**1,152,170**	**1,223,755**	**1,307,555**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Construction Put in Place
Estimated for The United States
Change From Prior Year - Current Dollar Basis
3rd Quarter 2015 Forecast (based on 2nd Quarter 2015 Actuals)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RESIDENTIAL BUILDINGS										
Single-Family	6%	-3%	20%	27%	15%	9%	10%	9%	10%	9%
Multifamily	-46%	2%	48%	47%	32%	11%	12%	8%	7%	9%
Improvements*	3%	5%	3%	5%	-23%	6%	5%	4%	5%	6%
Total Residential	**-2%**	**1%**	**14%**	**19%**	**1%**	**9%**	**9%**	**7%**	**8%**	**8%**
NONRESIDENTIAL BUILDINGS										
Lodging	-54%	-22%	19%	24%	20%	15%	12%	8%	4%	6%
Office	-27%	-5%	5%	0%	21%	14%	7%	2%	6%	9%
Commercial	-27%	7%	11%	12%	18%	8%	10%	6%	2%	5%
Health Care	-12%	2%	6%	-4%	-6%	5%	4%	6%	7%	6%
Educational	-14%	-4%	0%	-7%	1%	3%	4%	4%	5%	6%
Religious	-15%	-20%	-9%	-7%	-10%	0%	2%	2%	3%	3%
Public Safety	-19%	-7%	0%	-9%	-1%	-3%	2%	4%	4%	5%
Amusement and Recreation	-13%	-6%	-3%	-2%	9%	11%	8%	3%	5%	5%
Transportation	4%	-9%	9%	4%	6%	9%	9%	8%	6%	6%
Communication	-10%	0%	-9%	10%	-4%	4%	5%	3%	4%	4%
Manufacturing	-29%	-2%	18%	6%	14%	18%	5%	6%	7%	7%
Total Nonresidential Buildings	**-20%**	**-3%**	**5%**	**2%**	**8%**	**9%**	**7%**	**5%**	**5%**	**6%**
NONBUILDING STRUCTURES										
Power	-12%	-4%	30%	-4%	8%	-8%	3%	3%	10%	9%
Highway and Street	0%	-4%	2%	1%	4%	3%	2%	2%	1%	2%
Sewage and Waste Disposal	5%	-13%	-2%	1%	4%	6%	4%	4%	3%	3%
Water Supply	-1%	-8%	-7%	3%	-2%	4%	3%	2%	3%	4%
Conservation and Development	25%	5%	-17%	-4%	23%	6%	5%	5%	7%	7%
Total Nonbuilding Structures	**-4%**	**-5%**	**10%**	**-1%**	**6%**	**-1%**	**3%**	**3%**	**5%**	**5%**
Total Put in Place	**-11%**	**-2%**	**9%**	**7%**	**5%**	**6%**	**7%**	**5%**	**6%**	**7%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

About FMI

Founded in 1953 by Dr. Emol A. Fails, FMI is the leading management consulting, investment banking† and people development firm dedicated exclusively to the engineering and construction industry. FMI professionals serve all sectors of the industry and combine more than 60-plus years of industry context and leading insights to achieve transformational outcomes for our clients. We have subject matter experts in the following practice areas and serve clients throughout the U.S., Canada and internationally:

Management Consulting

- Strategy
- Market Research
- Business Development
- Operations and Project Execution
- Risk Management
- Compensation
- Peer Groups
- Performance Management

Investment Banking†

- M&A Representation
- Valuations and Fairness Opinions
- Private Capital Placement
- Ownership Transfer Planning

People Development

- Organizational Leadership Development
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- Executive Coaching
- Succession Planning
- Training and Talent Development

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