

2017

First Quarter Report

FMI Nonresidential Construction Index

EXECUTIVE SUMMARY

Almost every component of the NRCI Index moved in a positive direction in the first quarter. This result for the beginning of 2017 is welcome, as many have been expecting a slower economy. That expectation seemed to be based only on the idea that it has been good for so long, it must go down. The fact that material and labor costs continue to rise is a positive sign of a growing economy. It appears we can sustain the growth cycle for some time longer, and that may be in part because it has been slow growth, not a meteoric burn and decay. Slow growth or not, panelists indicate that finding enough talented people to do the work and somehow improving productivity are among their chief concerns this year.

From comments, we see that finding qualified superintendents and project managers is among the toughest human resource challenges. That makes it even more difficult, as can be seen in the answers to a few questions about ownership transfer and management succession. While nearly half of the panelists participating this quarter indicate they need to replace most critical positions within the next five years, only 35% currently have management succession plans in place, and only 24% have ownership transfer plans. Of those that do have ownership transfer plans, 59% expect to sell to employees, a process we have found can take at least five years, depending on how it is structured.

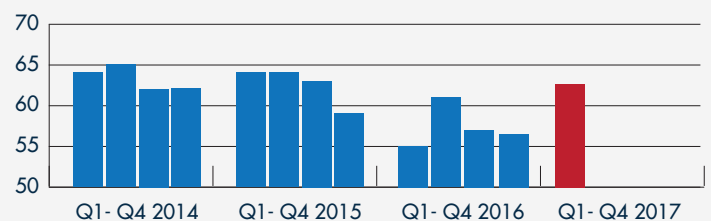
continued...

CURRENT SUMMARY

Overall economy	UP
Overall economy where we do business	UP
Our construction business	UP
Nonresidential building construction market where we do business	UP
Our expected backlog	UP
Cost of construction materials	HIGHER
Cost of labor	HIGHER
Productivity	HIGHER

EXHIBIT 1

FMI Nonresidential Construction Index (NRCI) Scores | Q1 2014 to Q1 2017



Current NRCI Reading | Q1 2017

62.5

Previous Reading | Q4 2016

56.9

(Scores above 50 indicate expansion, below 50 indicate contraction.)

Executive Summary (continued)

With productivity improvement still in the doldrums for most companies reporting, we looked at two newer approaches to construction that may help improve productivity as well as reduce project turnaround times and waste, Lean Construction and Integrated Productivity (IPD). Both practices have been employed in the construction industry for some time now; however, the number of projects and companies involved have been limited. For instance, IPD has been most associated with large, complex projects like hospitals or high-tech industry buildings, although this delivery method has been used on smaller projects as well. We found that, while only about 60% of panelists participated in these areas, there does appear to be some success using Lean Construction and IPD. According to the response, however, those who are making progress in these areas are the early adopters, and greater use is still more than three years out. This is not much different than other early trends such as BIM, prefabrication and modularization 10 years ago. The need to get more work done with fewer resources and more sophisticated owners may drive these trends a bit faster in coming years.

A special thank you to all of the panelists who help make the NRCI a useful gauge of nonresidential construction activity. We value your opinions and appreciate your taking the time to share your experience.



NRCI First Quarter 2017 Highlights

Overall Economy:

The NRCI Index component for the overall economy jumped 15.4 points to a strong showing of 73.8, reflecting improvements in GDP, the recent stock market rally and expectations of business friendly policy changes.

Overall Economy Where Panelists Do Business:

NRCI panelists were slightly less confident about the business outlook in their local markets compared with the overall economy, but still registered a positive 11.8-point jump to 72.0 for this component of the NRCI Index.

Respondents' Construction Business:

Panelists' outlook for their own business improved 8.7 points to a solid 75.3. This is a continuation of a strong business outlook in 2016.

Nonresidential Building Construction Market Where Panelists Do Business:

Registering an increase over the fourth quarter of 9.1 points to 73.7, panelists are not seeing what was an expected slowdown last quarter.

Expected Change in Backlog:

Backlogs continue to be reported at a median of 12 months, and most panelists expect this to continue or improve in the coming months.

Cost of Construction Materials and Labor:

With a strong outlook, it is not surprising to see increases in the costs of inputs like construction materials and labor. More about the tight labor situation is reported in our Current Issues section for Quarter 1.

Productivity:

The component index for productivity made a positive move to get out of negative territory, but only up to 50.0 points. Increasing productivity is one of the top challenges for construction in 2017, according to panelists in our Current Issues report below.



Current Issues

- **Hiring Plans:** Hiring plans for NRCI panelist companies are on par or a bit higher than last year, with 53% expecting a 0% to 5% increase in full-time direct employees. The top-three considerations for hiring continue to be: there is always room for exceptional individuals, when current staff begins to be consistently over full work capacity, and to assure there are people in place for management succession plans.
- **Top Challenges for 2017:** Most expected top challenges for 2017 mirror those for 2016 except for degree of importance. The top challenge continues to be hiring top people, followed by increasing productivity. Finding profitable work is expected to be a greater challenge than in 2016, and concern for domestic competition entering the markets increased nearly double from last year.
- **Expected Growth for 2017:** Panelists' outlook for growth is modest for 2017, but slightly higher than for 2016 at around 2.5% to 5%, with 11% responding expecting over 5% growth. This estimation is slightly lower than FMI's outlook for nonresidential construction at 7% for 2017.
- **Lean Construction and IPD Trends:** Panelists' response to several questions about trends in the use of Lean Construction, Integrated Project Delivery (IPD) and the application of both on a project indicate that the majority who answered the questions are applying Lean Construction on nearly half of their projects. The use of IPD is somewhat lower, and the use of both practices together on a project is still a small percentage for most companies but has signs of growth. Most expect it will be three years or more before these practices see widespread use.
- **Ownership Transfer and Management Succession Plans:** When asked about management succession plans, 41% of panelists said they will need successors to replace most critical positions within the next five to 10 years. For continuity planning purposes, 35% currently have management and leadership plans in place. Only 24% have ownership transfer plans in place. The top ownership transfer plan by far is "sell to employees."

EXHIBIT 2

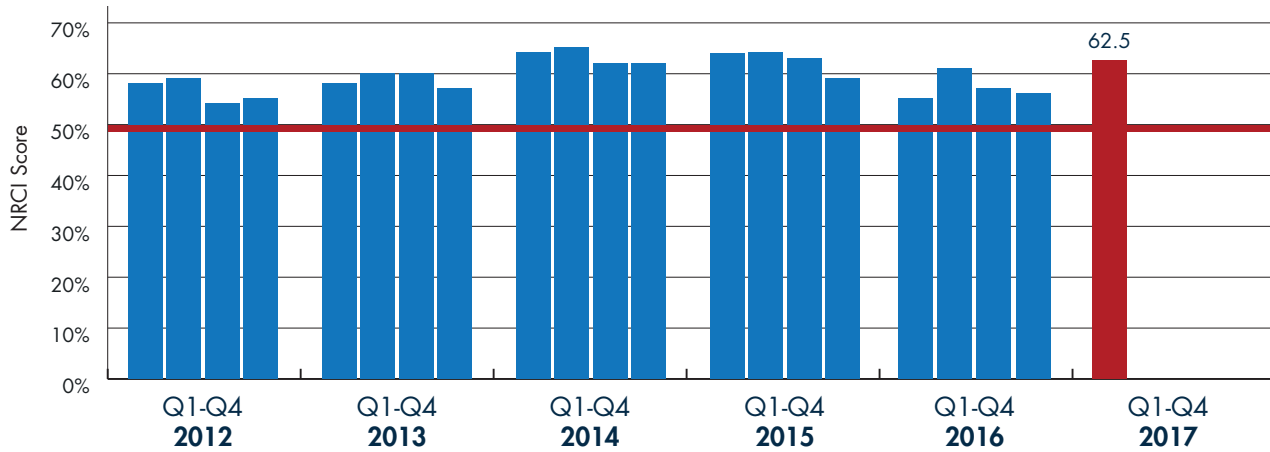
FMI Nonresidential Construction Index (NRCI) Scores | Q1 2012 to Q4 2017

Current NRCI Reading for Q1 2017

62.5

Previous Reading

56.9



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

With the first NRCI report for 2017, we asked a number of questions about several current issues and trends, including hiring plans, challenges for 2017, growth expectations, trends for Lean Construction and IPD, and a few questions about ownership transfer and management succession plans (OTMS). We have now built up a nine-year history of data for hiring plans. That history graphically shows the volatility in hiring plans that mirrors the top challenge for most construction companies in the past few years, finding and hiring talented people.

More companies will be hiring to have personnel for entering new markets this year, as well as to replace people leaving or retiring. Hiring to have the right people on board for management succession plans is also a continuing challenge, as our questions about ownership and management succession show. In the next one to five years, 46% of responding executives say they need to have successors in place for most critical positions. At this point, only 35% of panelists report that they have formal management and leadership succession plans in place. Only 24% have ownership transfer plans in place. Of those who have ownership transfer plans in place, 59% of those plans involve selling the company to employees. Only 5% expect to sell to a third party, and no one reported an intention to liquidate the assets of the company.

Looking at the employment plans and hiring concerns, it is no surprise that hiring talented people is once again the biggest challenge panelists expect for 2017. Likely, that challenge will be even more difficult as it has been a serious challenge for several years now. Increasing productivity is the next largest challenge for

2017 as indicated by panelists. This is directly related to finding talented people. Improving productivity takes planning and training. These things are more difficult to do when the workforce is busy and less skilled with higher turnover, which is the most important time to work on improving productivity. Even though we are seeing deeper backlogs, it is still a challenge to find new, profitable work, especially in the public markets as federal and local budgets are trimmed. Nonetheless, panelists' outlook for growth is modest for 2017, but slightly higher than for 2016 at around 2.5% to 5% with 11% responding expecting over 5% growth. This estimation is slightly lower than FMI's outlook for nonresidential construction at 7% for 2017.

As ownership transfer and management succession continues to be a top concern across the industry, we asked a few questions about this topic ahead of a larger report on the topic expected later this year. When asked about management succession plans, 41% of panelists said they will need successors to replace most critical positions within the next five to 10 years.

For continuity planning purposes 35% currently have management and leadership plans in place. Only 24% have ownership transfer plans in place. The top ownership transfer plan by far is "sell to employees." Considering that 70% of panelists need successors in the next three to 10 years, and only 35% have management and leadership succession plans, there should be little doubt that management succession should be a top issue now. This problem is only exacerbated by the hiring issues above. Most companies would like to find or develop top successors from within the company, and 59% expect to sell to employees when the time comes. Most of those who don't expect to sell to employees plan to sell or gift to family members (31%). Our experience is that management succession and ownership transfer plans take around five years to complete. That includes finding and developing the right people and setting up plans to allow employees to buy shares within a reasonable amount of time.

Comments on Planned Staff Changes for 2017:

- 2017, hiring only to replace retirees.
- Adding senior-level operations people (project execs and VPs) and looking to replace retiring superintendents.
- Backlog is down, and we may need to reduce overhead in six months if work operations don't pick up. The challenge is that we feel better about upcoming work starting in 2018.
- Difficult to increase salaried positions when we can't find enough hourly positions. The work is out there; however, labor shortage is affecting productivity and potential for growth.
- Engineering needs.
- Estimators.
- Filling open positions, some expansion.
- Finding it harder to get good experienced PMs. They are all working and come at a much higher price than in the past.
- Grew 30% YOY and are still filling needed positions.
- Higher wages.
- I have a few retirees this year and have experienced this in the past two years as well. The baby boomers are retiring, and we



are having trouble finding qualified people to replace them. This is a challenge and will continue to challenge us moving forward.

- Most personnel positions are for program management.
- Public sector is still unhealthy in our market. If we can't augment our private work with public work, we will need to shed staff.
- Ramping up.
- Recruiting, training and retaining people is the biggest challenge to profitable growth.
- Replace retiring staff.

- Staff growth through anticipated acquisition.
- Still looking for hard-to-find project managers.
- We are actively looking for qualified superintendents and project managers as well as quality project engineers and assistant superintendents. Quality candidates are hard to come by.
- We are seeking professional staff at all levels of project management and field forces.

Comments on Biggest Challenges for 2017:

- Available labor for our workforce and subcontractors' workforce and offers/hiring of our employees made by competitors.
- Finding quality backlog and managing succession.
- Finding talented people and providing a career path for new engineers in the field are extremely important to build our company for the future.
- Health insurance and benefits for our employees, increasing project fees.
- Keeping the backlog at the same level will be our biggest challenge.
- Labor availability.
- Labor shortages in large markets across the Southeast (Atlanta, Nashville, Charlotte, Miami, Charleston, Myrtle Beach).
- Managing bridled growth.
- People, productivity and inflation in wages and materials.
- Waiting to see what happens with the new administration. Lots of talk, but where is the money?

EXHIBIT 3

What changes do you foresee in the number of F/T direct employees in your organization for the coming year? (results for 2011-2017) (Excluding natural attrition, retirements, etc.)

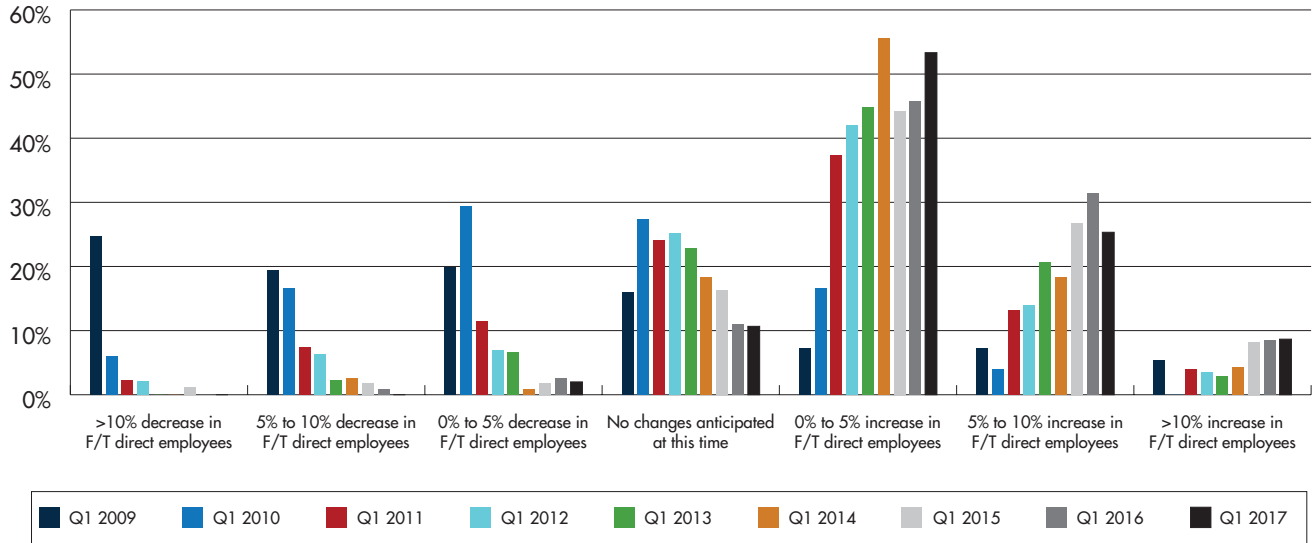


EXHIBIT 4

What are your key considerations or criteria for hiring for salaried employees? (NRCI data from 2011 to 2017)

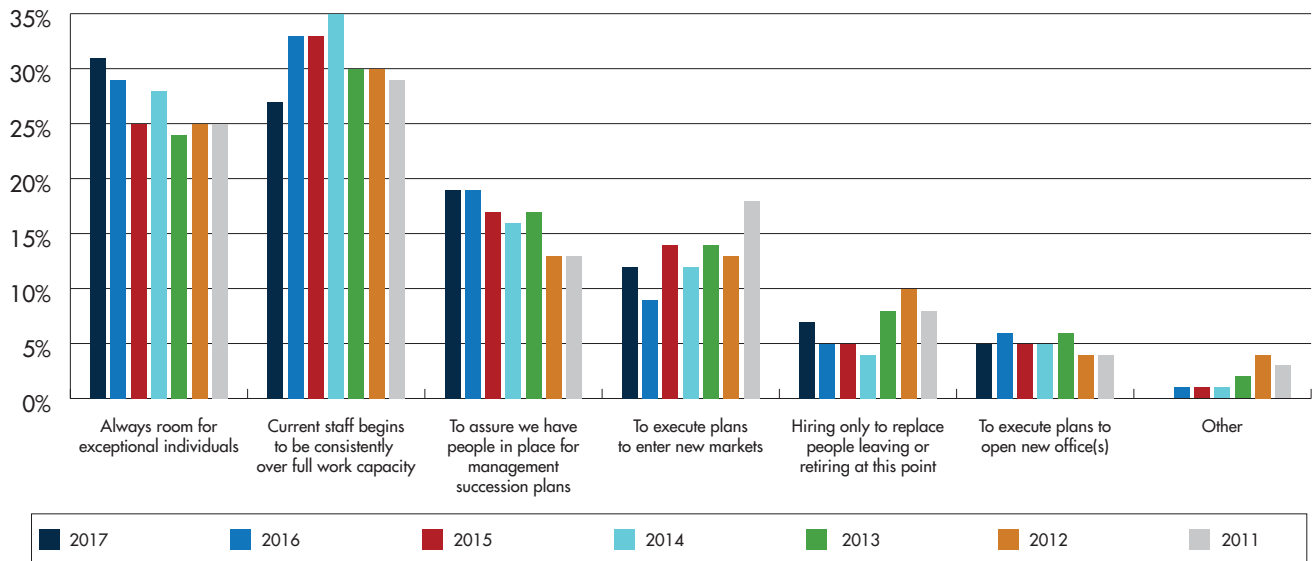


EXHIBIT 5

What do you expect to be the biggest challenges for your business in 2016? (Total Responses Ranked as 4's and 5's (Highest Challenges) for Q1 2016 and Q1 2017)

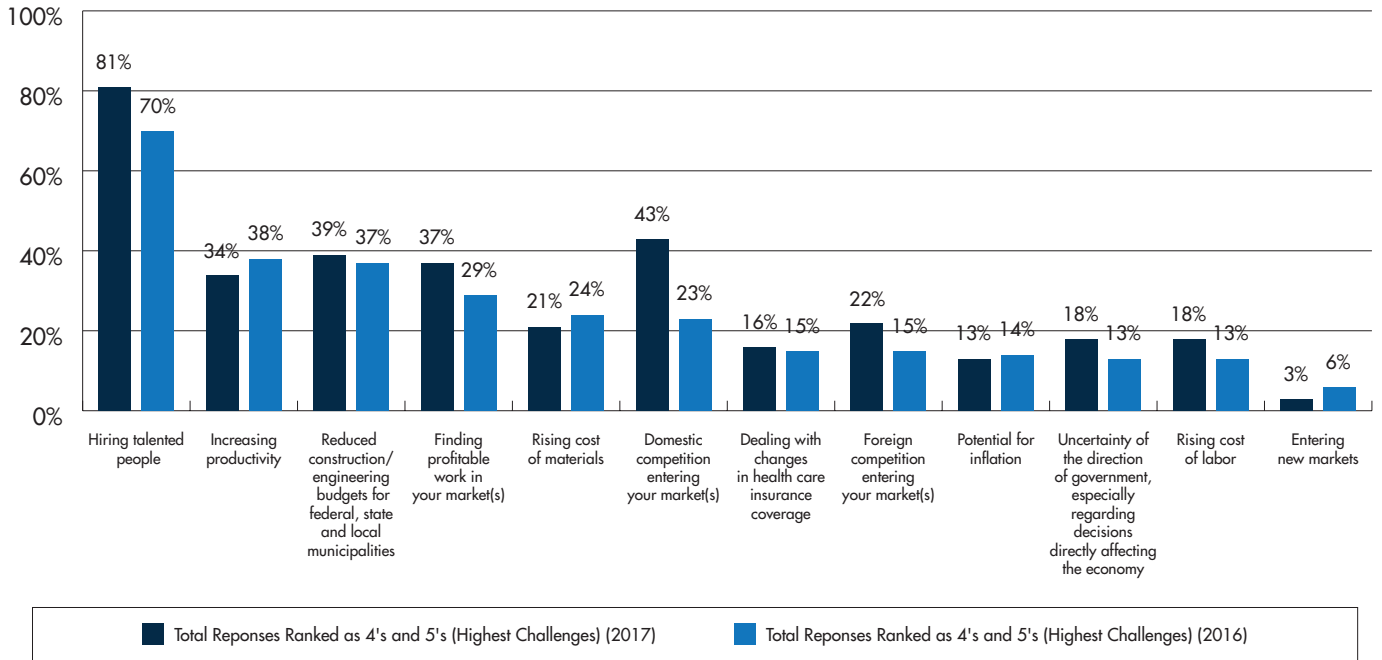


EXHIBIT 6

My organization will need successors to replace most critical positions in:

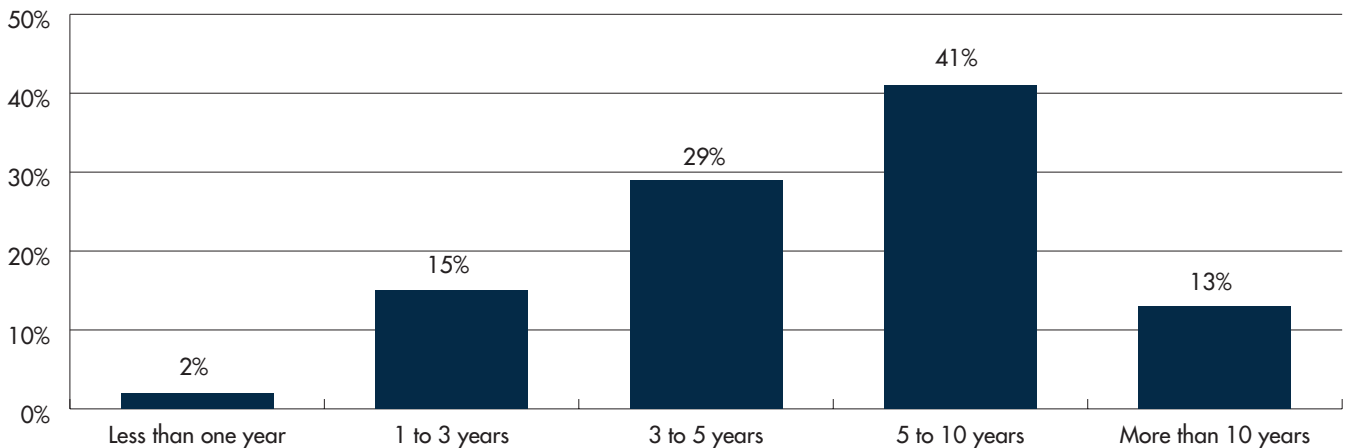


EXHIBIT 7

For continuity planning purposes, the following components are formally in place in my business: (Check all that apply)



EXHIBIT 8

Ownership Transfer Plans

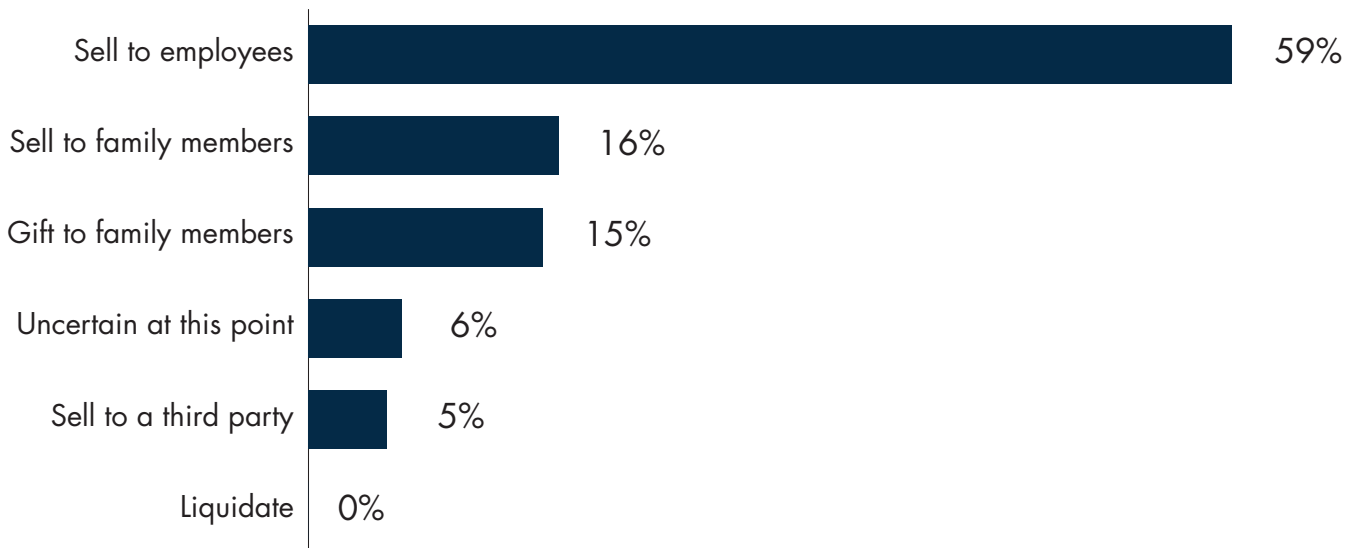
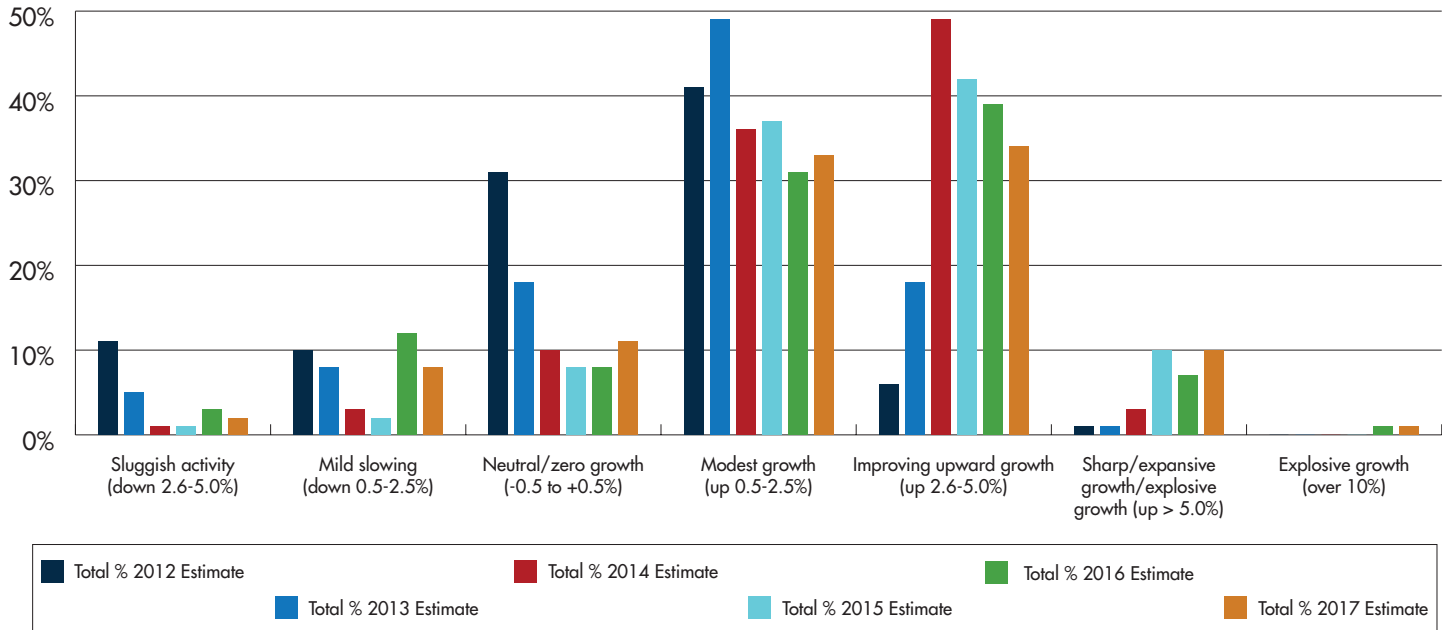


EXHIBIT 9

Construction activity for 2016 will finish around 5% higher than 2015. What do you predict in terms of overall construction put in place levels for 2017? (Compared to past results from 2012 to 2016)



Lean Construction and Integrated Project Delivery

The practices of Lean Construction and Integrated Project Delivery (IPD) have been employed in the construction industry for some time now; however, the number of projects and companies involved have been limited. For instance, IPD has been most associated with large, complex projects like hospitals or high-tech industry buildings, although this delivery method has been used on smaller projects as well. Lean and IPD are related practices or methods in construction, particularly in that both strive to reduce waste and improve delivery time. They also seek to improve the bottom-line profit. Without providing detailed definitions as to what is considered “truly” Lean Construction or IPD, we asked several questions to get an idea of how often companies have been involved in the use of both as well as work on projects where both practices are used together.

As we look at the results of these questions, it is important to note that only about 60% of panelists answering the NRCI survey also answered questions about Lean Construction and IPD. Therefore, we make the assumption that overall use of these practices is lower than indicated. With that caveat, it is still interesting to see that 44% of panelists have worked on projects using Lean Construction practices, 46% have used the IPD delivery method, and 40% have used both on a single project ranging for from 1% to 19% of their projects in recent years. Total revenue from these practices closely matches the number of projects for each.

While the numbers are low, 14% of the companies report using Lean Construction for over 60% of their projects. Overall, it appears that more companies are working with Lean Construction practices than using IPD. Lean Construction can more readily benefit all types of project delivery and projects, even though it is not expected to achieve all the benefits of using both lean and IPD together.

Among the drivers of both Lean Construction and IPD are owner requests or requirements and/or profitability on successful projects. We asked whether there is a measurable correlation in the use of “Lean Construction” and/or IPD and the project completion schedule, as well as, if there was a correlation, what the average percent improvement was. Significantly, 50% of those who used Lean Construction did not see any measurable improvement compared to commonly used construction methods. For IPD, that number was 43%. However, for those involved in using both Lean and IPD together, only about 11% reported no measurable difference. Of those companies that did use one of both practices, the majority realized between 1 and 19% improvement on project schedules, and a small percentage saw even larger improvements.

If Lean Construction and IPD are the “next big things” for construction, it appears that, like other revolutions in construction, it will take at least another three to five years before they could be called hot trends. Nonetheless, there are early adopters that are benefiting from these approaches to improving construction now.

EXHIBIT 10

Lean Construction and Integrated Project Delivery Percentage of Contractor Annual Revenue

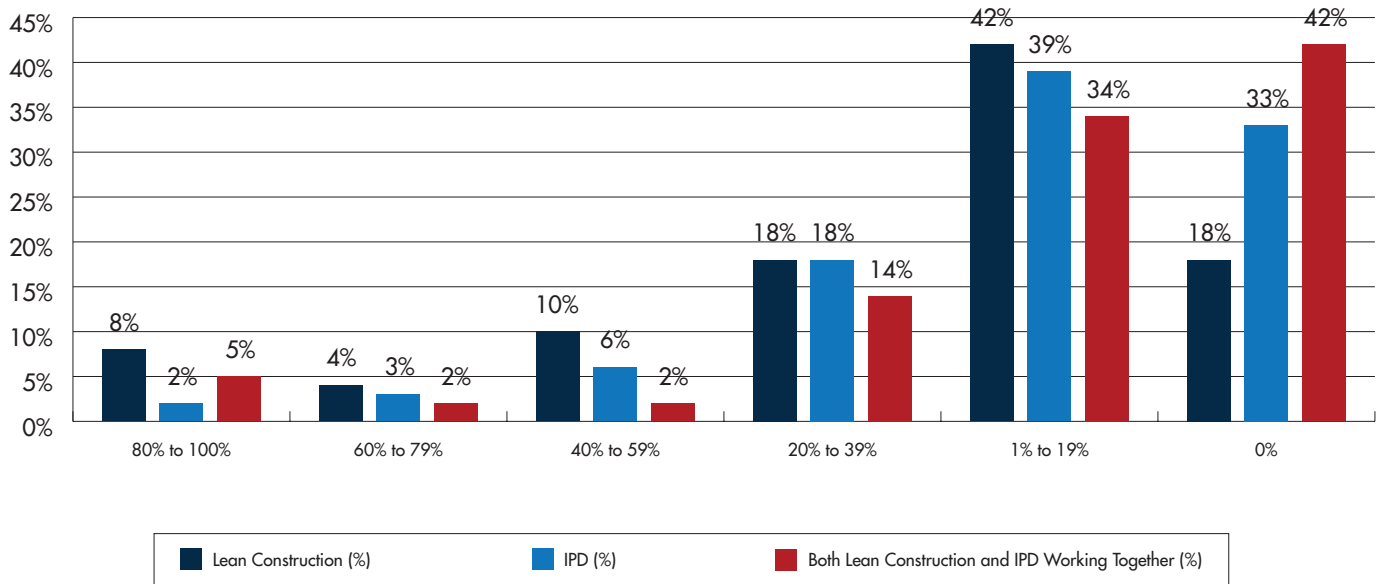


EXHIBIT 11

Was there a measurable correlation in the use of "Lean Construction" and/or IPD and the project completion schedule? (Estimate of the average percent improvement)

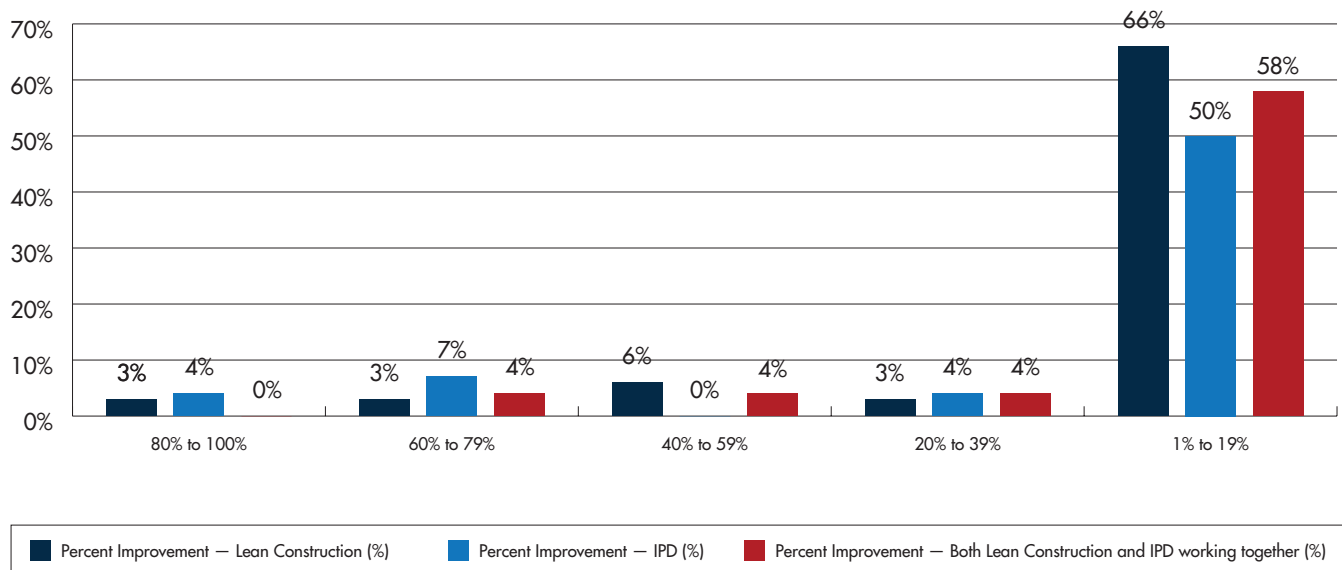


EXHIBIT 12

Was there a measurable correlation in the use of “Lean Construction” and/or IPD and the project completion schedule? (No significant difference to other commonly used methods)

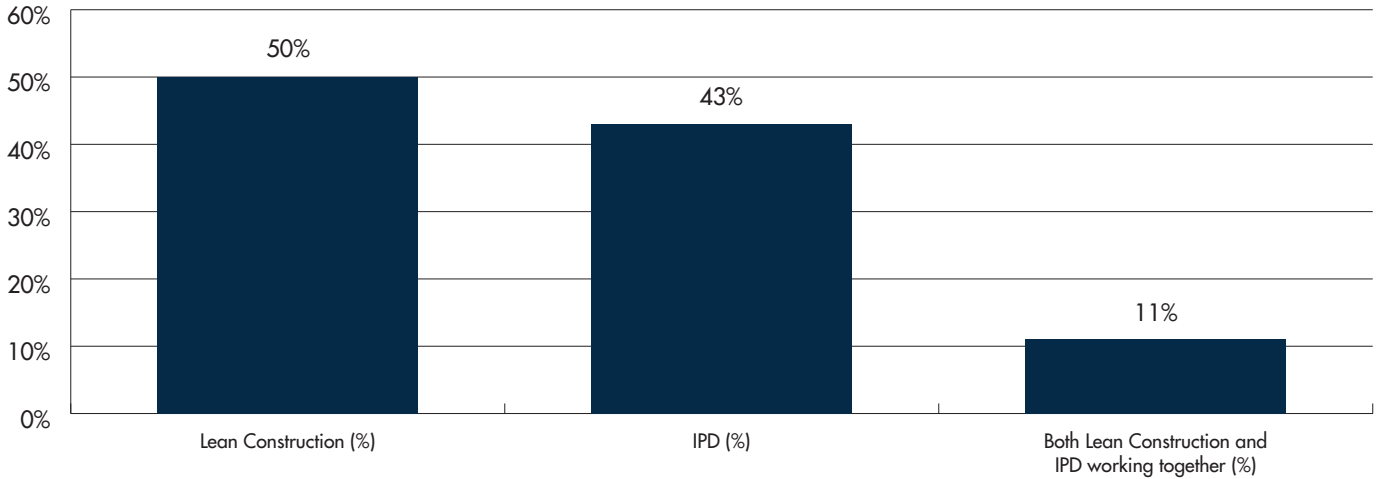


EXHIBIT 13

Based on your experience, do you expect widespread adoption of “Lean Construction/IPD” as an important/critical step in the evolution of project delivery and client relations?

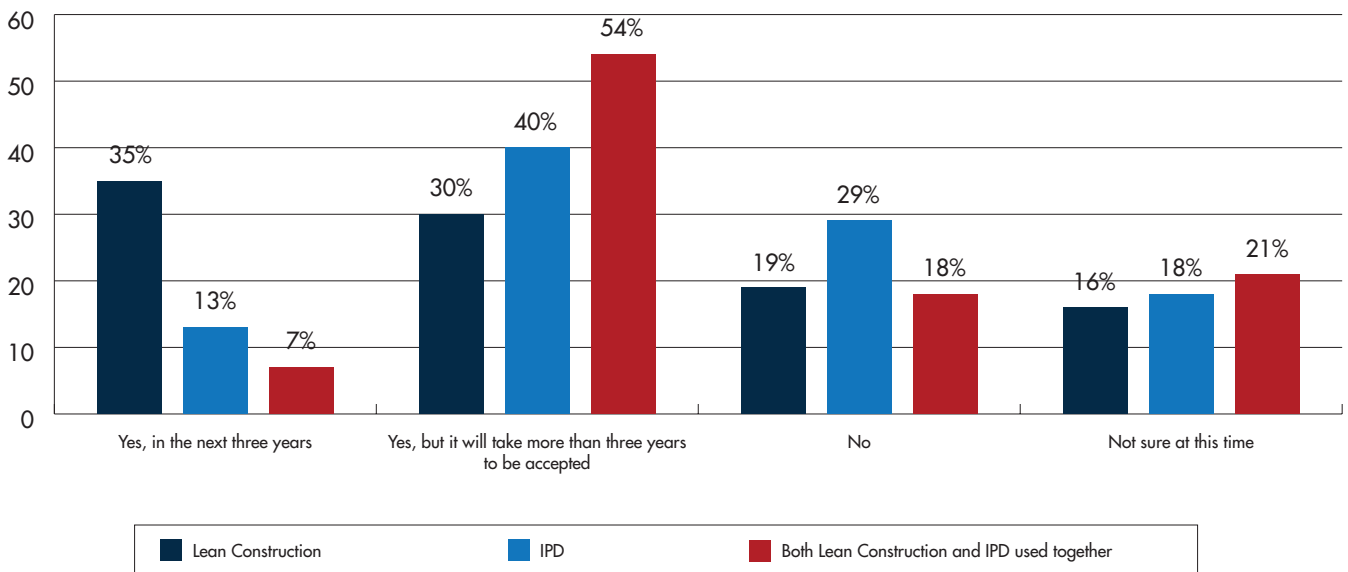


EXHIBIT 14

FMI Nonresidential Construction Index Detailed Results by Market Sector

	Overall Fourth Quarter 2016				Overall First Quarter 2017			
	Business Outlook Three Months			NRCI Component Results Q4 2016	Business Outlook Three Months			NRCI Component Results Q1 2017
	Improving over last quarter	Remains the same as last quarter	Worse compared with last quarter		Improving over last quarter	Remains the same as last quarter	Worse compared with last quarter	
Commercial	29.5%	63.1%	7.4%	61.1	28.6%	68.4%	3.1%	62.8
Education	32.6%	61.5%	5.9%	63.3	36.7%	58.7%	4.6%	66.1
Health care	40.7%	53.1%	6.2%	67.2	44.4%	51.3%	4.3%	70.1
Lodging	29.8%	62.3%	7.9%	61.0	38.7%	53.8%	7.5%	65.6
Manufacturing	33.9%	54.1%	11.9%	61.0	35.5%	55.9%	8.6%	63.4
Office	24.5%	63.3%	12.2%	56.1	36.4%	53.7%	9.9%	63.2
Other	42.4%	54.5%	3.0%	69.7	46.4%	53.6%	0.0%	73.2
	Business Outlook - One Year				Business Outlook - One Year			
Commercial	29.8%	59.5%	10.7%	59.5	39.8%	56.1%	4.1%	67.9
Education	38.4%	51.4%	10.1%	64.1	48.2%	46.4%	5.5%	71.4
Health care	41.5%	52.4%	6.1%	67.7	51.7%	44.1%	4.2%	73.7
Lodging	25.9%	57.8%	16.4%	54.7	35.9%	52.2%	12.0%	62.0
Manufacturing	33.9%	55.0%	11.0%	61.5	43.0%	47.3%	9.7%	66.7
Office	30.6%	52.4%	17.0%	56.8	38.5%	52.5%	9.0%	64.8
Other	53.1%	40.6%	6.3%	73.4	60.7%	35.7%	3.6%	78.6
	Business Outlook - Three Years				Business Outlook - Three Years			
Commercial	30.8%	31.7%	37.5%	46.7	25.0%	45.8%	29.2%	47.9
Education	35.8%	44.0%	20.1%	57.8	42.2%	38.5%	19.3%	61.5
Health care	35.0%	51.0%	14.0%	60.5	42.6%	43.5%	13.9%	64.3
Lodging	15.2%	43.8%	41.1%	37.1	19.8%	42.9%	37.4%	41.2
Manufacturing	29.6%	49.1%	21.3%	54.2	34.1%	45.1%	20.9%	56.6
Office	20.1%	45.1%	34.7%	42.7	22.5%	50.8%	26.7%	47.9
Other	50.0%	37.5%	12.5%	68.8	46.4%	42.9%	10.7%	67.9

NRCI Scores

- > 50 indicates growth (better)
- < 50 indicates slowing (worse)

* A note on the use of the diffusion index: Do not interpret diffusion index values in the same manner as averages, because a simple increase or decrease in a diffusion index does not necessarily imply an improving or declining result. For example, if a diffusion index moves from 31 last quarter to 35 this quarter, it does not imply the market has improved. A reading above 50 indicates improving or expansion, 50 indicates remaining the same, and below 50 indicates worse or contracting. Therefore, if a reading goes from 31 to 35, then the result still implies a decline from the previous quarter because 35 is below 50; but the decline is not as great as the previous decline because 35 is above 31. As another example, if the diffusion index changes from 31 to 65, it implies improvement over the previous quarter, not because 65 is above 31, but because 65 is above 50.

EXHIBIT 15

NRCI Component Indexes — Comparisons of Results: Q2 2016 to Q1 2017

	NRCI components Q2 2016	NRCI components Q3 2016	NRCI components Q4 2016	NRCI components Q1 2017
The overall economy	65.4	58.1	58.5	73.8
The overall economy where panelists do business	69.9	60.4	60.2	72.0
Panelists' construction businesses	76.0	70.9	66.7	75.3
Nonresidential building construction market where panelists do business	74.3	67.3	64.6	73.7

Cost of construction materials	25.2	22.3	26.4	20.1
Cost of labor	12.0	12.0	16.2	15.3
Productivity	52.4	46.5	48.1	50.0

Expected change in backlog	66.1	58.9	61.3	65.1
	Median	Median	Median	Median
Approximate current signed backlog in months	11.0	10.0	12.0	12.0

Note: NRCI scores and component scores are based on a diffusion index where scores above 50 represent improving or expanding, a score of 50 represents remaining the same, and a score below 50 represents worse than last quarter or contraction.

EXHIBIT 16

Size of the Organization in Annual Revenue

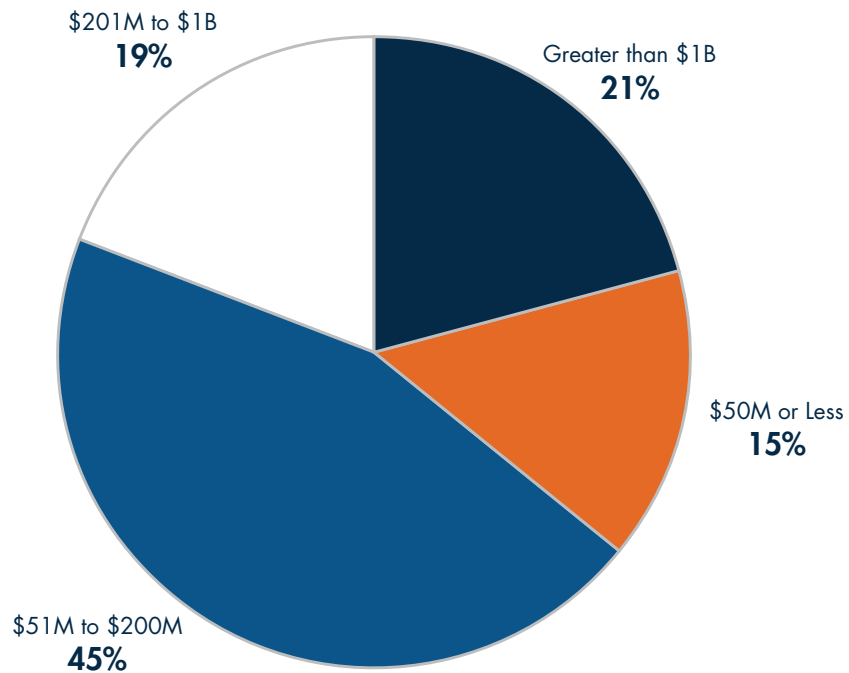


EXHIBIT 17

Type of Contracting Business

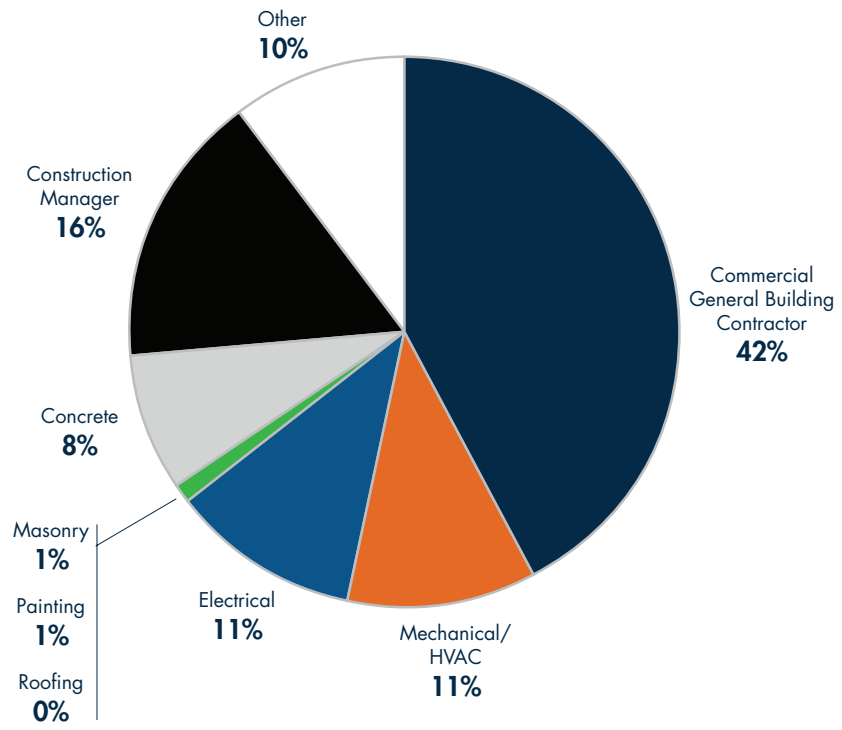


EXHIBIT 18

Primary Region in Which Panelists Work

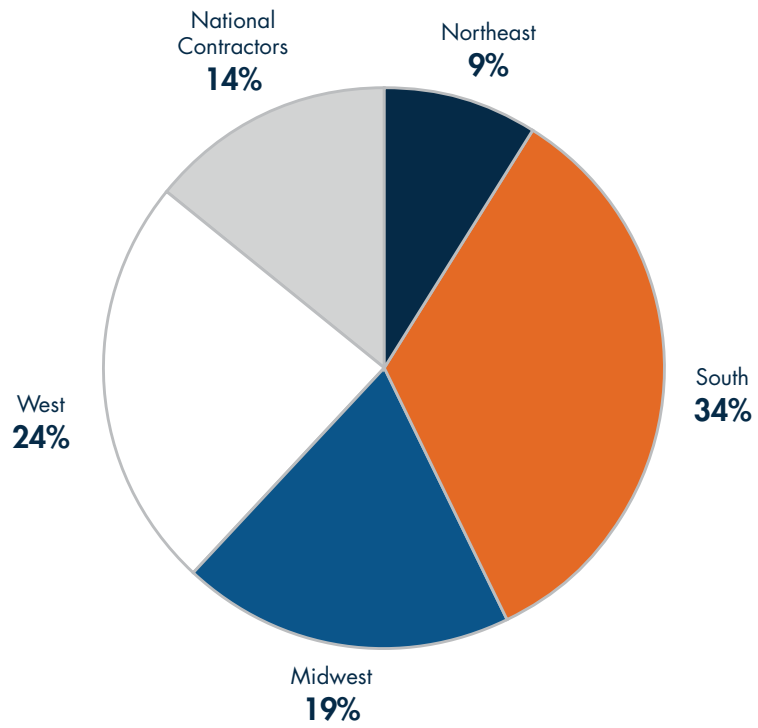


EXHIBIT 19

FMI Nonresidential Construction Index (NRCI) Component Results Q4 2016 to Q1 2017

	NRCI Component Results Q4 2016				NRCI Component Results Q1 2017			
	Improving over last quarter	Staying the same as last quarter	Worse compared with last quarter	NRCI components Q3 2016	Improving over last quarter	Staying the same as last quarter	Worse compared with last quarter	NRCI components Q4 2016
Overall Economy	23.0%	71.0%	6.0%	58.5	47.7%	52.3%	0.0%	73.8
Overall Economy Where Panelists Do Business	24.9%	70.7%	4.4%	60.2	44.7%	54.7%	0.7%	72.0
Panelists' Construction Business	39.9%	53.6%	6.6%	66.7	54.0%	42.7%	3.3%	75.3
Nonresidential Building Construction Market Where Panelists Do Business	35.7%	57.7%	6.6%	64.6	51.3%	44.7%	4.0%	73.7
Backlog in Months	High	Median	Low		High	Median	Low	
Approximate Current Signed Backlog	36.0	12.0	2.0		48.0	12.0	3.0	
	Grow faster than last quarter	Stay about the same as last quarter	Shrink compared to last quarter		Grow faster than last quarter	Stay about the same as last quarter	Shrink compared to last quarter	
Expected Change in Backlog	35.2%	52.2%	12.6%	61.3	36.2%	57.7%	6.0%	65.1
	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	48.9%	49.5%	1.6%	26.4	61.1%	37.6%	1.3%	20.1
Cost of Labor	68.1%	31.3%	0.5%	16.2	69.3%	30.7%	0.0%	15.3
	Improving over last quarter	Same as last quarter	Declining compared to last quarter		Improving over last quarter	Same as last quarter	Declining compared to last quarter	
Productivity	9.9%	76.4%	13.7%	48.1	13.3%	73.3%	13.3%	50.0

NRCI Scores

- > 50 indicates growth (better)
- < 50 indicates slowing (worse)

* A note on the use of the diffusion index: Do not interpret diffusion index values in the same manner as averages, because a simple increase or decrease in a diffusion index does not necessarily imply an improving or declining result. For example, if a diffusion index moves from 31 last quarter to 35 this quarter, it does not imply the market has improved. A reading above 50 indicates improving or expansion, 50 indicates remaining the same, and below 50 indicates worse or contracting. Therefore, if a reading goes from 31 to 35, then the result still implies a decline from the previous quarter because 35 is below 50; but the decline is not as great as the previous decline because 35 is above 31. As another example, if the diffusion index changes from 31 to 65, it implies improvement over the previous quarter, not because 65 is above 31, but because 65 is above 50.



HOW TO BECOME AN NRCI PANELIST

If you are an executive for a construction firm in nonresidential building markets and would like to become a panelist for the “FMI Nonresidential Construction Index,” please send your information or questions about this survey to Phil Warner at pwarner@fminet.com. The survey is sent to panelists quarterly and should take approximately 10 minutes to complete. Panelists will receive the full quarterly report free of charge.

CONFIDENTIALITY

*All individual responses to this survey will be confidential and shared outside of FMI only in the aggregate.
All names of individuals responding to this survey will remain confidential to FMI.*

ABOUT THIS REPORT

The data in this report is presented as a sampling of construction industry executives voluntarily serving as panelists for this survey. The responses are based on their experience and opinions, and the analysis is based on FMI’s interpretation of the aggregate results. All trends are based on a limited series of data that may or may not represent the larger population. We must caution that major decisions should not be made without additional investigation and research of specific geographic and construction market segments.

About FMI

For over 60 years, FMI has been the leading **management consulting and investment banking** firm dedicated exclusively to **engineering and construction, infrastructure and the built environment**.

FMI serves all sectors of the industry as a trusted advisor. More than six decades of context, connections and insights lead to transformational outcomes for our clients and the industry.

Sector Expertise

- A/E and Environmental
- General Contractors/CM
- Heavy Civil
- Industrial
- Specialty Trades
- Utility T&D
- Clean Tech and Energy Services
- Construction Materials
- Building Products
- Oil and Gas
- Private Equity
- Owners

Denver

210 University Boulevard
Suite 800
Denver, CO 80206
303.377.4740

Houston

9303 New Trails Drive
Suite 350
The Woodlands, TX 77381
713.936.5400

Phoenix

7639 East Pinnacle Peak Road
Suite 100
Scottsdale, AZ 85255
602.381.8108

Raleigh (headquarters)

5171 Glenwood Avenue
Suite 200
Raleigh, NC 27612
919.787.8400

Tampa

308 South Boulevard
Tampa, FL 33606
813.636.1364



www.fminet.com

Copyright © 2017 FMI Corporation

Notice of Rights: No part of this publication may be reproduced or transmitted in any form, or by any means, without permission from the publisher.

† Investment banking services provided by FMI Capital Advisors, Inc., a registered broker-dealer and wholly owned subsidiary of FMI.