



Q4
2019

USG CORPORATION + U.S. CHAMBER OF COMMERCE

Commercial Construction Index

POWERED BY
DODGE DATA & ANALYTICS



TABLE OF CONTENTS



1 EXECUTIVE SUMMARY

2 DRIVERS OF CONFIDENCE

- 4 Backlog
- 5 New Business
- 6 Revenue/Profit Margins

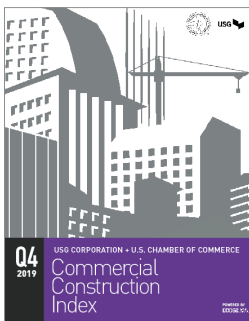
3 QUARTERLY SPOTLIGHT

- 7 Technology
- 10 Women in Construction

4 MARKET TRENDS

- 12 Workforce
- 15 Access to Financing
- 16 Materials & Equipment

5 METHODOLOGY



The USG Corporation + U.S. Chamber of Commerce Commercial Construction Index (CCI) is a quarterly economic index designed to gauge the outlook for and resulting confidence in the commercial construction industry. Recognizing a need to highlight the important contributions of this sector to the nation's economy, USG Corporation and the U.S. Chamber of Commerce partnered to produce this first-of-its-kind index. Each quarter, contractors across the country are surveyed in order to better understand their levels of confidence in the industry and top-of-mind concerns.

CONTRACTOR OUTLOOK SHIFTS DOWNWARD FOLLOWING OPTIMISTIC Q3.

OVERVIEW

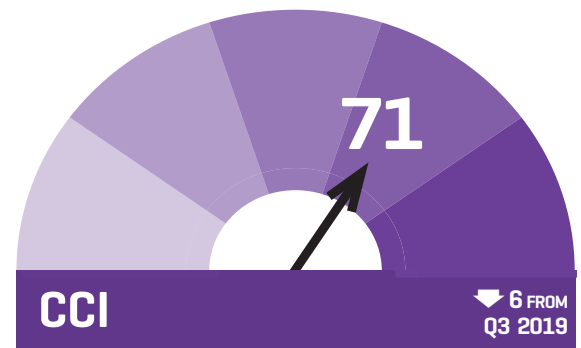
In Q3 2019, the Commercial Construction Index (CCI) composite score peaked at 77, the highest it's been since the report first launched in Q1 2017. This quarter, there is a notable decline of six points, down to 71, marking the lowest score since the Index's inception.

KEY DRIVERS OF CONFIDENCE

All of the key drivers of confidence dropped from the positive outlook of Q3. Revenue declined six points to 66, the same level as in Q2 2019, after hitting 72 last quarter. The ratio of current and ideal backlog dropped to 76 from 82, after an extended period of high ratings that started in the third quarter of 2018. Contractors are also more conservative about the market, with their confidence in new business dropping from a measure of 76 to 72.

It is important to place all these figures into the context of previous findings: Revenue is consistent with Q1 and Q2 of 2019. The backlog ratio and degree of optimism reported about the market are still higher than they were from Q3 2017 to Q2 2018.

Rather than suggesting a precipitous decline, the instability between Q3 and Q4 appears to indicate greater uncertainty among contractors about what to expect from the construction market. While the overall index number is relatively low, that is in comparison to what has been a boom market in construction since the index was launched in 2017. It will be essential to see the findings over the next few quarters to gauge whether this is the beginning of a decline or just volatility as the market continues to be influenced by



both headwinds and tailwinds.

See Drivers of Confidence on pages 4–6.

QUARTERLY SPOTLIGHTS

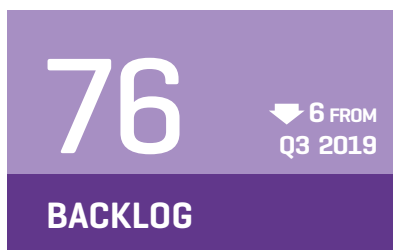
This quarter features two spotlight topics. First, a few questions on advanced technology show the use of several technologies is growing notably, even in a short year-over-year time frame.

The survey also asked about women in construction, and how the industry can encourage more female participation. On average, respondents reported that only 7% of their craft workers are women, and that a change in construction culture is needed to entice more women to join the industry. *See Quarterly Spotlight on pages 7–11.*

MARKET TRENDS

Labor shortages plague the industry, and the impact of tariffs continues to be felt, despite a slight drop in the levels of concern about material and equipment prices and availability. *See Market Trends on pages 12–17.*

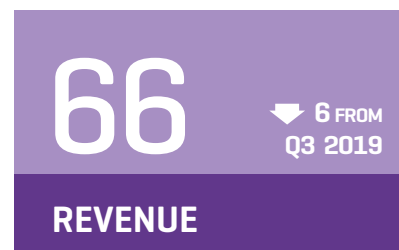
KEY DRIVERS OF CONTRACTOR CONFIDENCE



After a series of very positive quarters in 2019, the ratio of average current to ideal backlog dropped from 82 to 76 in Q4.



Contractors' confidence in the ability of the market to provide new business in the next 12 months dropped notably from Q3, when it was 76.



Revenue numbers declined after a spike in Q3 to 72. However, a majority of contractors still expect to see revenue increases.

ADDITIONAL MARKET TRENDS



HIRING

Hiring expectations declined five points from Q3, which is not surprising given the drop in backlog and reduced optimism in new business. *See page 12 for more details.*



SKILL LEVEL

Concern about worker skill levels also declined by eight points since Q3, perhaps due to reduced expectations about hiring. *See page 14 for more details.*



FINANCING

Even with the four point drop from Q3, most builders still believe that owner access to financing will get easier or remain the same in the next six months. *See page 15 for more details.*



TOOLS & EQUIPMENT

Half of contractors expect to spend more on tools and equipment in the next six months, suggesting that many still see the market as strong enough to drive investment in their businesses. *See page 16 for more details.*

Fewer contractors report a backlog level increase.

BACKLOG DROPS BACK

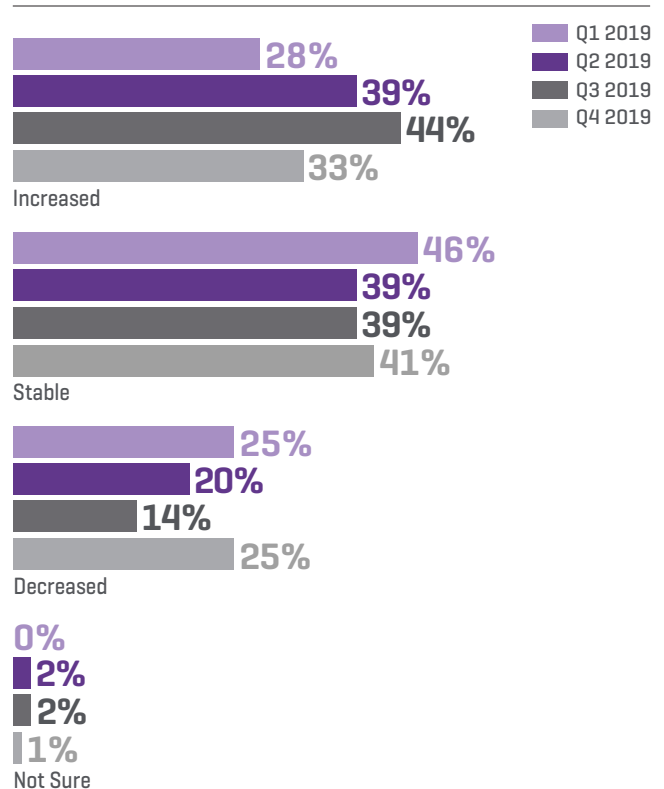
At first glance, the change in those reporting increased or decreased backlog between Q3 and Q4 seems dramatic, but, in fact, it merely reflects a shift back near levels seen in Q1 2019. Backlog is still strong in the industry, with most contractors [74%] reporting that their backlog has either increased or remained stable in the last three months.

CURRENT BACKLOG

The average level of backlog this quarter is 9.3 months. The decline from 10.2 months reported last quarter may be influenced by fewer large companies responding to the survey this quarter than last. However, that would not influence the ratio of current to ideal backlog, which also dropped back to 76%, again an adjustment back to levels previously seen in Q1 2019.

AMOUNT OF BACKLOG REPORTED While there is a slight shift away from those reporting more than 12 months backlog between Q3 [27%] and Q4 [24%], and small increases in those reporting lower levels of backlog, overall these changes are minor, and backlog levels continue to be strong.

Change in Backlog in the Last Three Months



Current vs. Ideal Backlog



Amount of Backlog Reported



Confidence levels in new business opportunities shift from high to moderate.

NEXT 12 MONTHS

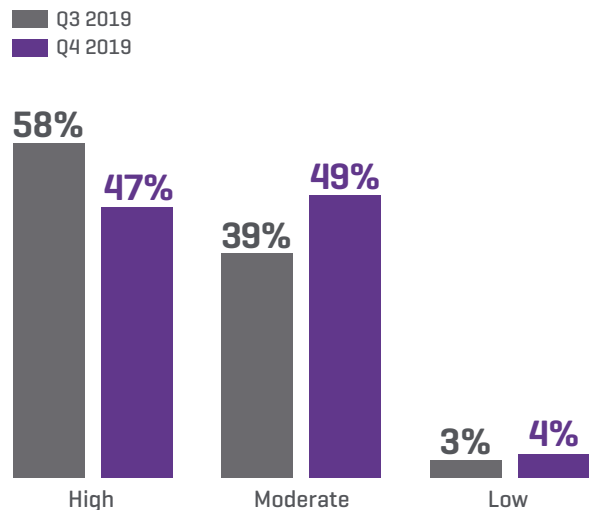
Nearly all contractors [96%] report either high or moderate confidence in new business opportunities over the next 12 months, though there is a notable shift between Q3 and Q4 from high to more moderate levels of confidence. While this shift may indicate growing caution, it likely does not reflect a high degree of concern, and only a nominal percentage [4%] still report low confidence in the ability of the market to provide new work.

NEXT 24 MONTHS

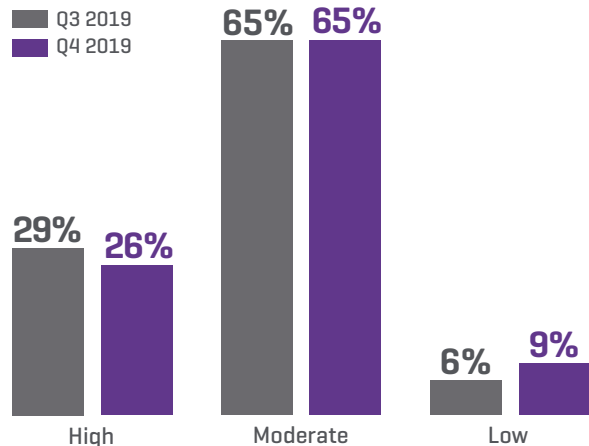
The large shifts in the 12-month outlook are not evident in the 24-month outlook. Contractors have been consistently more cautious in their two-year expectations than in their expectations for the next 12 months. It is notable, though, that the small decline in those with a high level of confidence is reflected by an increase in those with a low level of confidence, rather than just shifting to a moderate level. At 9%, only a small fraction of the contractors seem to be highly concerned, but it may suggest some growing unease about the possibility of an economic slowdown.

Degree of Confidence Among Contractors in Sufficient New Business Opportunities

Next 12 Months



Next 24 Months



Note: Percentages are based on ratings using a 10-point scale, where the three points at the bottom [1–3] indicate a low level of confidence and the three points at the top [8–10] indicate a high level of confidence.

Revenue and profit margin expectations return to Q2 2019 levels.

REVENUE EXPECTATIONS

In Q4, expectations about revenue increases among contractors are significantly lower than they were in Q3. However, they are consistent with the revenue expectations seen in Q2 2019, suggesting that this is an adjustment in their level of optimism rather than a dramatic shift in the market. It is notable that nearly all Q4 respondents [95%] expect their revenues to either increase or remain the same, indicating business is still strong.

VARIATION BY COMPANY TYPE More general contractors (GCs) than trade contractors (40% versus 32%) expect their revenues to increase in the next 12 months.

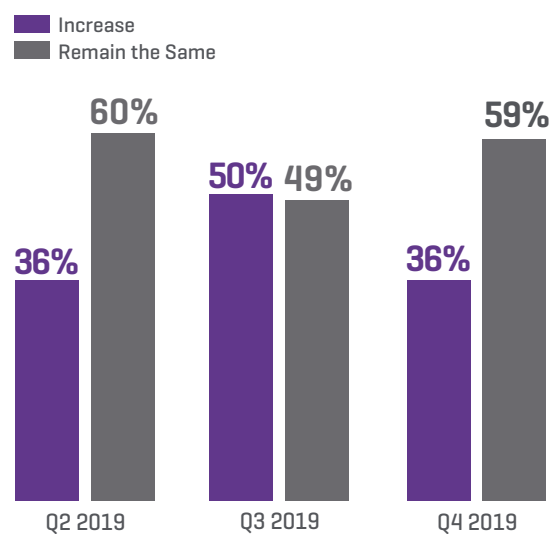
PERCENTAGE INCREASE IN REVENUE OVER THE NEXT 12 MONTHS Over half of contractors (54%) expect revenue increases of 4% or more.

PROFIT MARGIN EXPECTATIONS

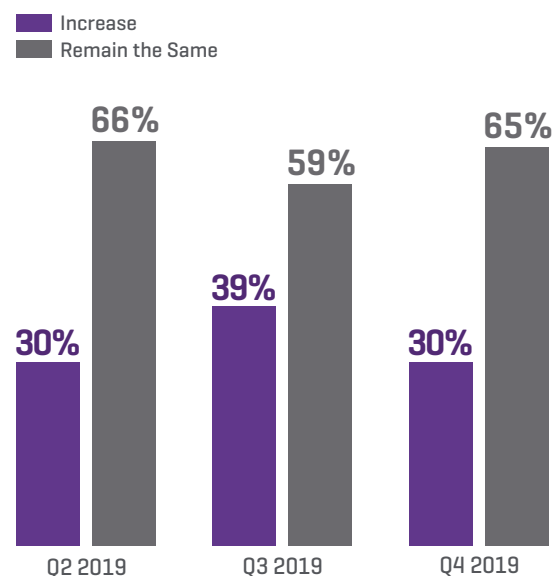
As with revenue, Q4 profit margin expectations declined from those in Q3, but they nearly mirror the findings from Q2, suggesting that this is merely an adjustment back to previous expectations rather than a symbolic change.

Note: Percentages for revenue and profit margins are based on ratings using a 10-point scale, where the three points at the bottom [1-3] indicate a decrease, three points in the middle indicate it has stayed about the same and four points at the top [7-10] indicate an increase.

Expected Revenue Changes in the Next 12 Months



Expected Profit Changes in the Next 12 Months



Drones and equipment tagging are 2019's leading jobsite technologies. Wearable technologies expected to surge by 2022.

CURRENT USE OF ADVANCED TECHNOLOGIES BY CONTRACTORS

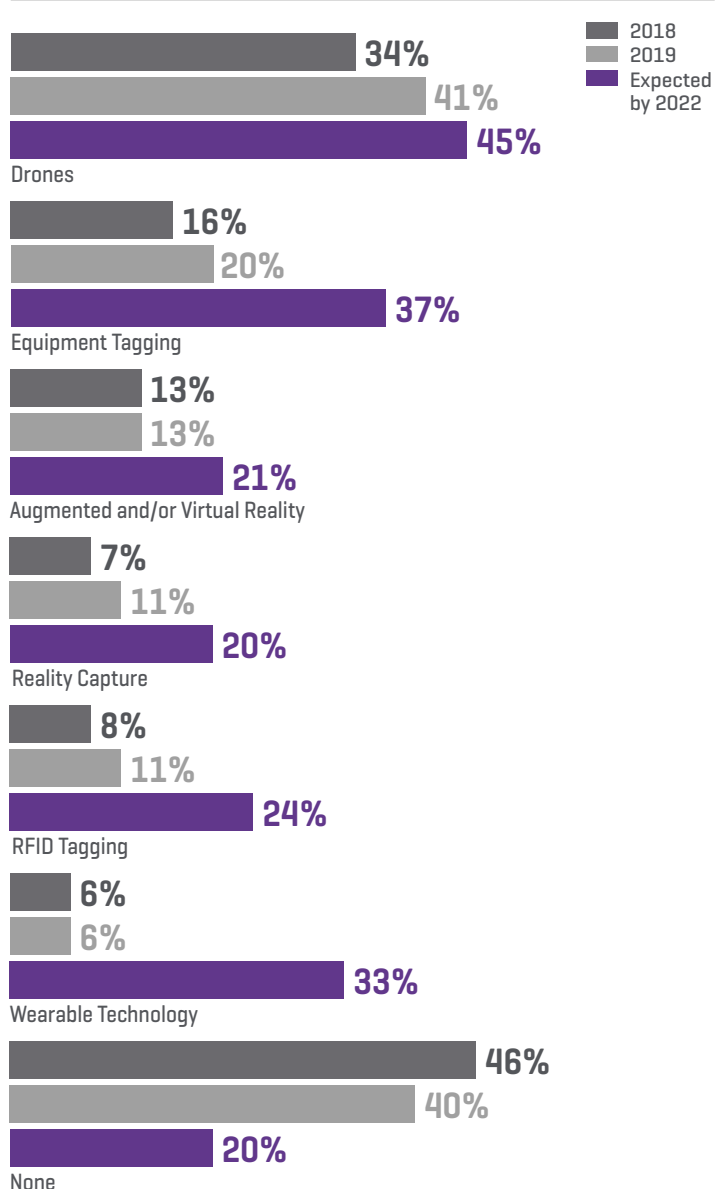
For the second year in a row, contractors were asked about their use of advanced technologies onsite, and the findings demonstrate that the construction industry is embracing new technology to improve project delivery. In fact, 60% already report using at least one technology from the list of eight, up six points from 2018, and 80% believe they will be using some technology by 2022.

Drones continue to be the most widely used, and one in five report using equipment tagging. Contractors expect equipment tagging to increase dramatically, with 37% expecting to adopt it by 2022. Other technologies in wider use now than in 2018 include reality capture and RFID tagging.

Wearable technologies are of great interest to the industry. While use stayed the same between 2018 and 2019, 33% of respondents expect to use them in the next three years.

The survey also asked about 3D printing and automated equipment/robotics. Both see relatively low levels of use now (6% and 5%, respectively) with just modest growth over last year and no dramatic change expected by 2022.

Current and Expected Future Use of Advanced Technologies Onsite by Contractors



General contractors embrace new technologies at a faster pace than do trade contractors.

USE OF ADVANCED TECHNOLOGIES BY FIRM TYPE

General contractors use advanced technologies more than specialty trade contractors, according to the Q4 findings. In fact, over 75% of general contractors currently use at least one of the technologies included in the survey. The chart at right shows the top technologies they either currently use or plan to use in the next three years.

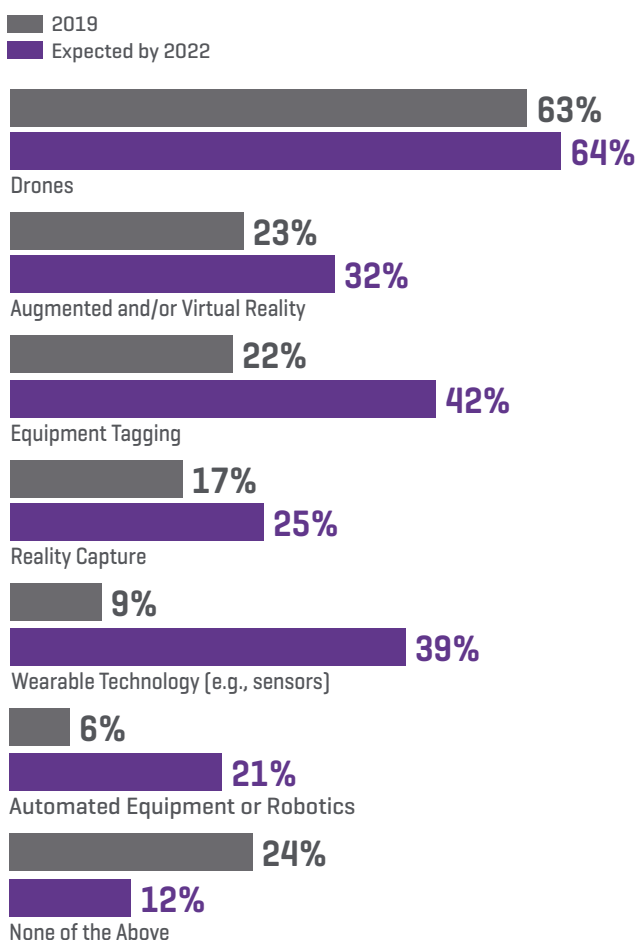
Nearly two-thirds [63%] report already using drones on their projects, and nearly one-quarter employ augmented and/or virtual reality and equipment tagging.

By 2022, general contractors expect to see the greatest growth in the usage of wearable technology, equipment tagging and automated equipment or robotics.

USE OF ADVANCED TECHNOLOGIES BY FIRM SIZE

Contractors with 100 or more employees are using technology much more widely than smaller companies, including drones, augmented and/or virtual reality, and reality capture. Wearables, though, see nearly equal use between large companies and small ones [fewer than 10 employees], but less use among midsize firms.

Current and Expected Future Use of Advanced Technology by General Contractors



Most contractors believe technology will help improve productivity, meet or reduce project schedules and improve safety.

BENEFITS EXPECTED FROM USING ADVANCED TECHNOLOGY

Over 70% of contractors included in the study believe that advanced technologies can increase productivity [78%], improve schedule [75%] and enhance safety [79%].

PRODUCTIVITY While there is general agreement that technology can improve productivity, contractors are divided about which technologies will have the greatest impact. Selected as the top three are equipment tagging [27%], wearables [25%] and RFID tagging [24%], though automated equipment or robotics and drones are also referenced by a notable percentage.

SCHEDULE There is more agreement among contractors about technologies expected to improve project schedules than about productivity. Equipment tagging and RFID tagging are selected by 30% of respondents, with the next highest factor, reality capture, lagging by 10 points.

SAFETY There is general consensus among contractors that wearable technology [60%] has a high potential to improve safety. A notable percentage also believe automated equipment/robotics [22%] will also be useful to address safety concerns.

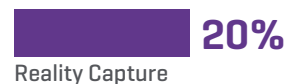
Top Technologies for Improving Job Performance

Selected in the top three

PRODUCTIVITY



SCHEDULE



SAFETY



Women are vastly underrepresented on jobsites, but changing perceptions could help reverse that.

PERCENTAGE OF WOMEN ON JOBSITES

On average, contractors report that just 7% of their onsite workers are women. It is notable, though, that nearly one-third (31%) were not sure about what percentage of their onsite workforce is women.

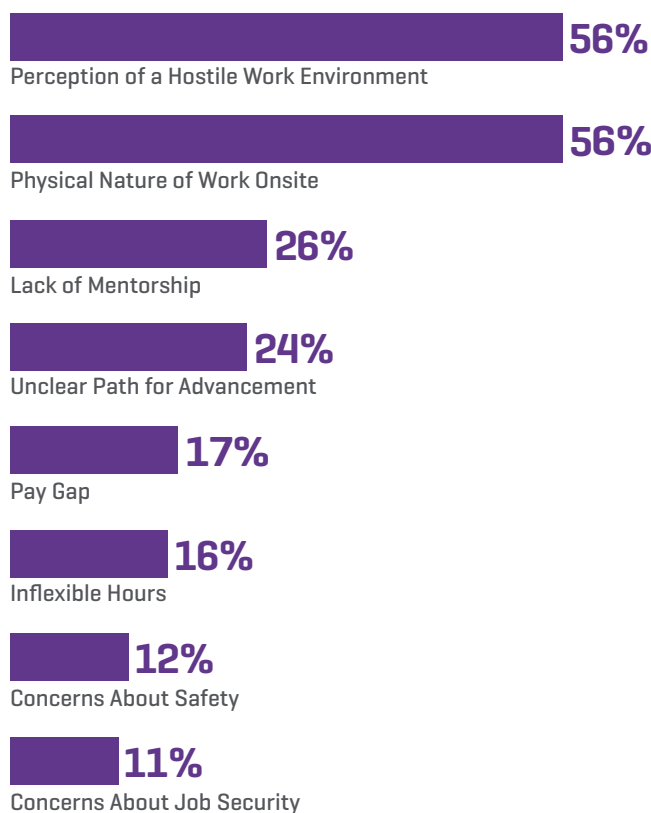
Almost half (49%) of those who worked for companies with fewer than 10 people said that there were no women working for their company onsite, while all of those from companies with 100 or more employees reported at least some percentage of women onsite.

TOP OBSTACLES TO DRAWING MORE WOMEN INTO CONSTRUCTION

By far, the most significant obstacles to attracting more women to construction according to contractors are the perception of a hostile work environment and the physical nature of work onsite. In the Q1 2019 CCI, better pay and a clear path for advancements were top means of recruiting new workers, but the findings on the obstacles and drivers this quarter (see page 11) reveal that changing the culture of construction is more important to draw women into this industry.

Top Obstacles to Drawing More Women Into the Construction Industry

Selected in the top three





Multiple approaches are needed to recruit more women into construction.

TOP WAYS TO RECRUIT WOMEN INTO CONSTRUCTION

The top two ways to recruit more women reflect the general recruitment strategies favored by contractors in an earlier survey from Q1 2019: improve the perception of construction industry professionals in general and increase outreach in schools.

However, other recruitment strategies, selected by one-third or more respondents, deal with issues related to women's perception of the industry. They include providing more examples of successful women [39%], developing mentorship programs that are designed to include women [35%] and providing a more welcoming culture to women [33%]. This suggests that a specific strategy to include women needs to be considered by those seeking to expand the construction workforce. It is notable that these approaches rank above more concrete factors like better pay and flexible hours.

VARIANCE BY REGION Mentorship is particularly valued in the Midwest, where 52% of contractors select it among their top three, especially compared with just 22% in the Northeast.

Top Ways to Recruit More Women Into the Construction Industry

Selected in the top three



Percentage of contractors expecting to employ more workers remains high, despite decline from last quarter.

HIRING EXPECTATIONS

While fewer contractors in Q4 report they expect to hire more people over the next six months than did in Q3, the percentage is still well over half (56%), suggesting that the demand on the limited pool of skilled workers is still very high.

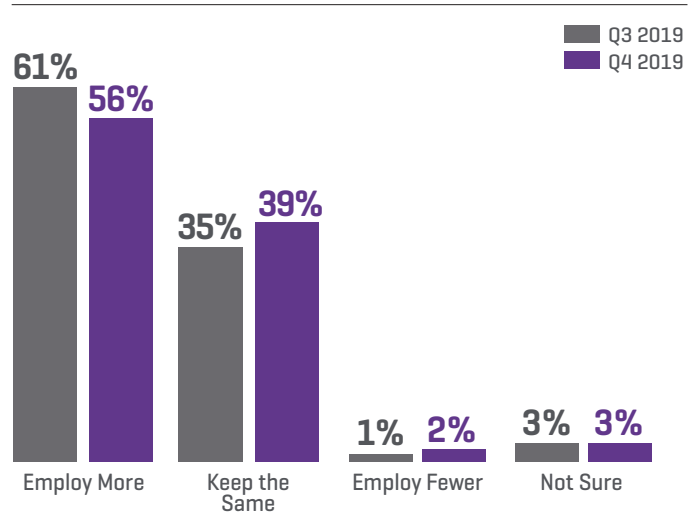
FINDING SKILLED WORKERS

The majority (89%) of contractors report at least a moderate level of difficulty finding skilled workers, with 59% reporting that it is quite difficult. However, there is a four point increase in those reporting a low level of difficulty, a notable change since this is the first time since Q1 2017 that more than 10% of contractors have rated the difficulty of finding skilled workers that low. It is worth watching to see if this is just a momentary increase or a true shift for some companies.

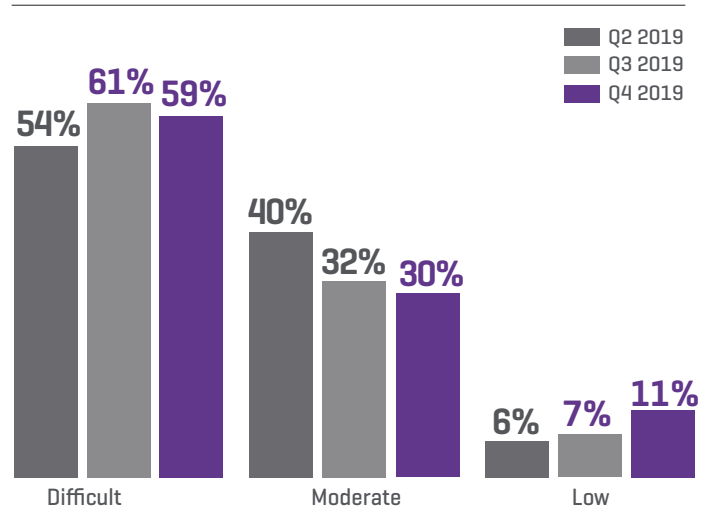
VARIANCE BY REGION Most contractors (71%) in the Midwest report that it is very difficult to find skilled workers, but only 44% of contractors in the Northeast agree. In fact, 22% of contractors in the Northeast report a low level of difficulty in finding workers.

Note: Percentages for difficulty levels are based on ratings using a 10-point scale, where the three points at the bottom (1-3) indicate a high level of difficulty and the three points at the top (8-10) indicate a low level of difficulty.

Contractor Hiring Plans Over the Next Six Months



Difficulty Finding Skilled Workers



Skilled worker shortages still negatively impact project schedules and construction costs.

IMPACTS OF SKILLED LABOR SHORTAGES

A consistently high percentage of contractors report they are challenged to meet schedule requirements and submit higher bids for projects due to skilled labor shortages.

VARIANCE BY TYPE AND SIZE OF COMPANY Most general contractors [83%] are currently challenged to meet schedule requirements due to skilled worker shortages, compared with 63% of trade contractors.

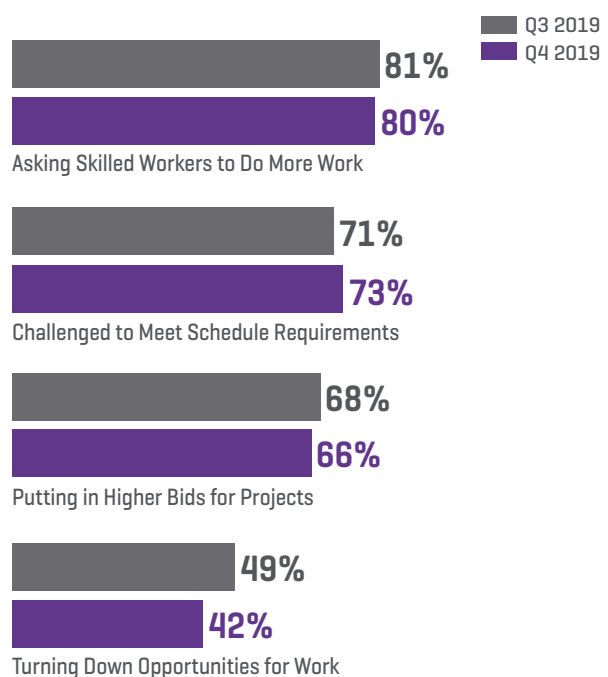
A relatively high percentage of small companies [53%] report having turned down opportunities for work due to skilled worker shortages, compared with midsize companies [34%]. Large companies fall in the middle [45%].

THE COST OF SKILLED LABOR

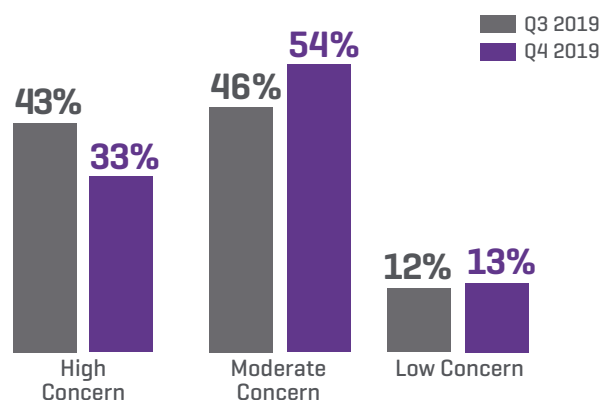
Most contractors [87%] are at least moderately concerned about the cost of skilled labor. This quarter, there is a clear shift with more contractors citing moderate concerns about the cost of skilled labor and less reporting a high concern.

Note: Percentages for degree of concern contractors have about the cost of skilled labor are based on ratings using a 10-point scale, where the three points at the bottom [1-3] indicate a high level of concern and the three points at the top [8-10] indicate a low level of concern.

Consequences of Skilled Labor Shortages



Degree of Contractor Concern About Cost of Skilled Labor



Nearly all contractors are concerned about worker skill levels.

ADEQUATE SKILL LEVELS

Nearly all [92%] contractors report being at least moderately concerned about their workers having adequate skill levels, with half reporting a high level of concern.

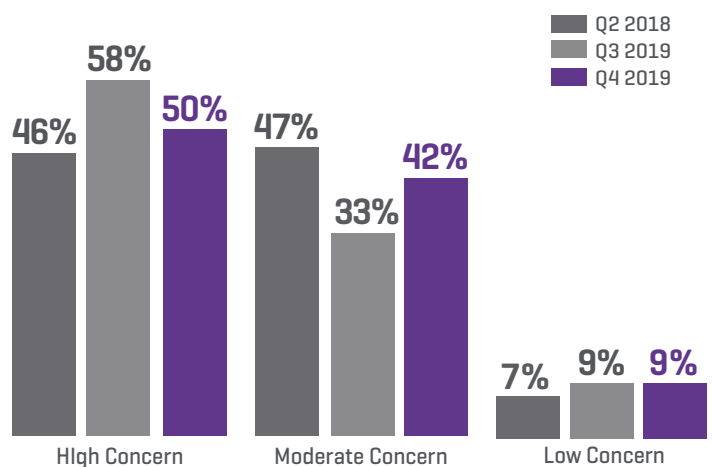
VARIANCE BY REGION Only 31% of contractors in the Northeast report a high level of concern over skill levels, far fewer than those in the Midwest [59%], South [54%] and West [47%]. In addition, one-quarter [25%] of those in the Northeast rate their concern as low.

CHANGE IN SKILL LEVELS IN PREVIOUS SIX MONTHS

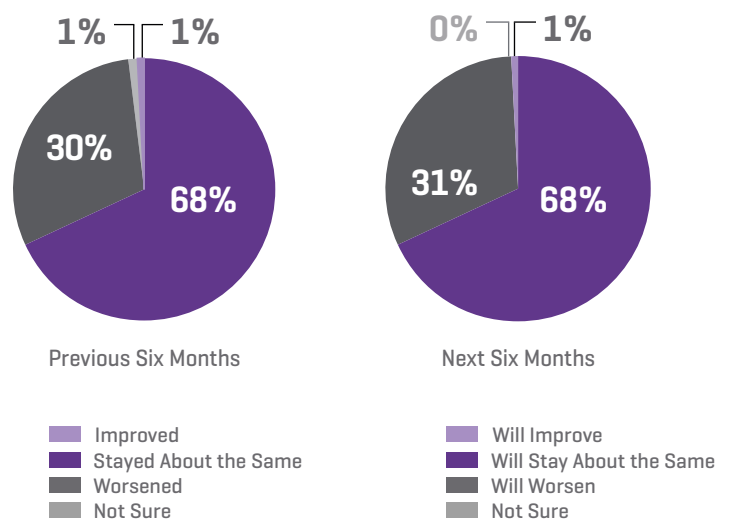
Close to a quarter [30%] of contractors who are concerned about worker skill levels report this issue has worsened in the past six months, and nearly the same percentage [31%] expect it to continue to worsen. Only 1% have seen or expect any improvement, with nearly all who remain expecting the problem to continue at the same level.

Note: Percentages for degree of contractor concern about workers having adequate skill levels are based on ratings using a 10-point scale, where the three points at the bottom [1-3] indicate a high level of concern and the three points at the top [8-10] indicate a low level of concern.

Degree of Contractor Concern About Adequate Worker Skill Levels



Problems With Finding Skilled Workers Among Those Concerned About Skill Level



Working capital is expected to remain widely available.

CONTRACTOR WORKING CAPITAL

Most contractors [76%] believe their access to working capital financing should remain the same, and only 9% believe that it may become more difficult.

CONSTRUCTION FINANCING

The majority [70%] of contractors believe that owner access to financing will get easier or remain the same over the next six months. While this is lower than the percentage who had this expectation in Q3 [74%], it is higher than in Q2 [66%]. This generally reveals a relatively high level of optimism about the ability of owners to fund projects.

Those who believe it will be more difficult did increase notably from 12% in Q3 to 17% in Q4, but that is simply a return to the Q2 findings, not a major shift in perception.

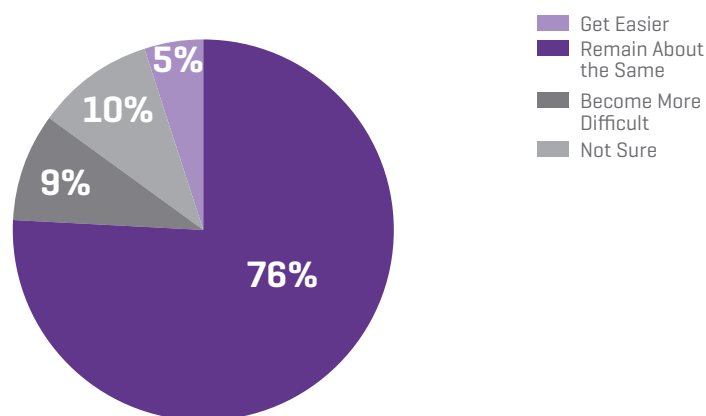


VOICE OF THE CONTRACTOR

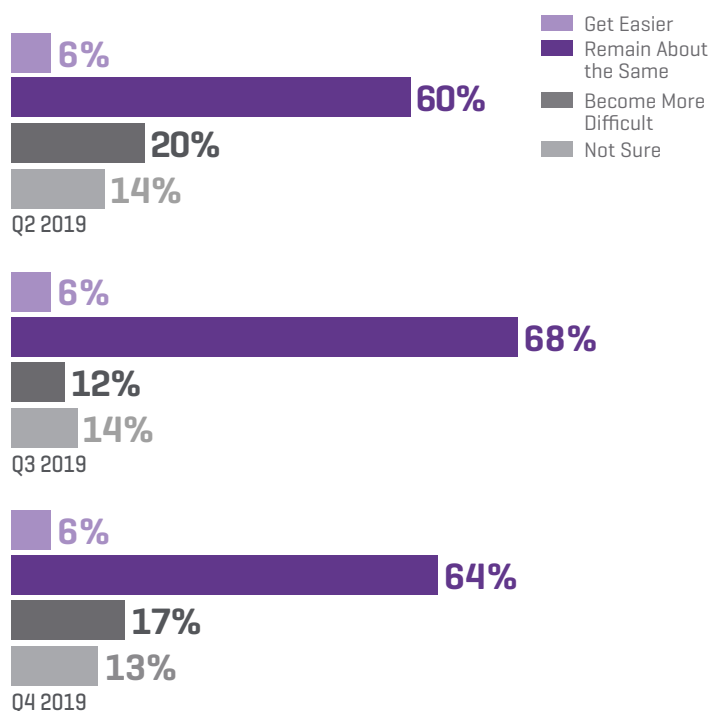
[The greatest challenge for my business in the next 12 months is] pricing getting too expensive for owners to be able to get projects to pencil.

—CCI Survey Respondent

Expected Change in Access to Working Capital Financing by Contractors in the Next Six Months



Expected Change in Building Owner Access to Financing in the Next Six Months



Contractors report less concern about material cost fluctuations.

SPENDING ON TOOLS AND EQUIPMENT

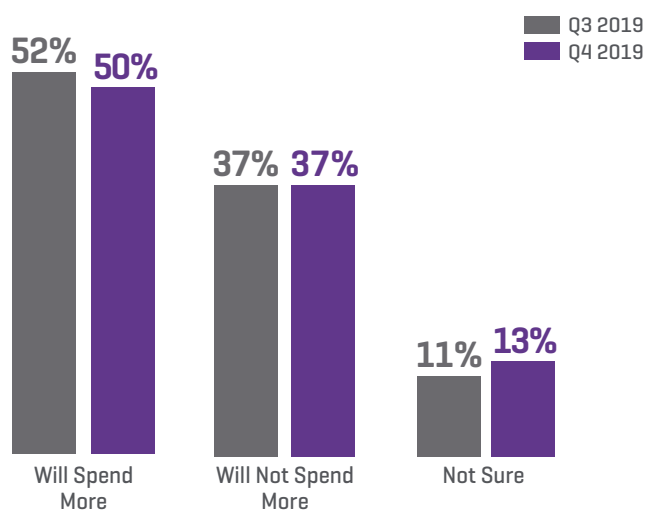
Half of contractors surveyed expect to spend more for tools and equipment in the next six months, a percentage largely consistent with the findings in Q3. This, combined with the 56% who expect to hire more workers [page 12], suggests that contractors still see a thriving construction market ahead, despite some growing concerns.

VARIANCE BY COMPANY TYPE 62% of trade contractors anticipate spending more, compared with 41% of general contractors.

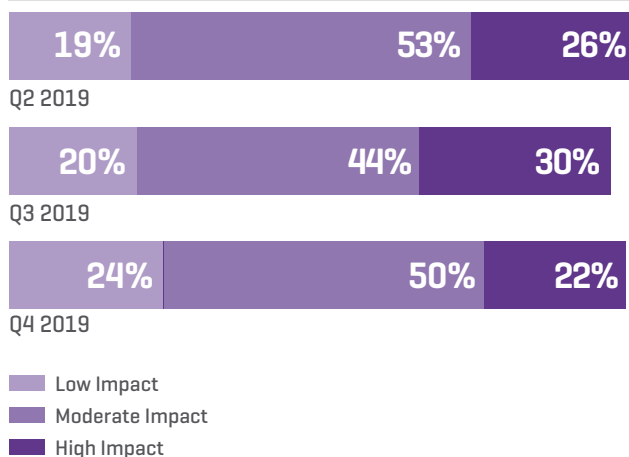
IMPACT OF MATERIAL COST FLUCTUATIONS

Contractors are still divided about the impact of material cost fluctuations, with half expecting moderate impacts and the rest nearly evenly divided between low and high impacts. However, those expecting a high impact declined by 8% this quarter, from 30% in Q3 to 22% in Q4. These findings align closer with Q2 than with Q3, and the repeated shifts suggest increasing uncertainty about the impacts expected.

Contractors Expecting to Pay More for Tools and Equipment in the Next 6 Months



Impact of Material Cost Fluctuations on Construction Projects



Tariff concerns continue, but fewer contractors expect product shortages to have an impact on projects.

IMPACT OF PRODUCT SHORTAGES

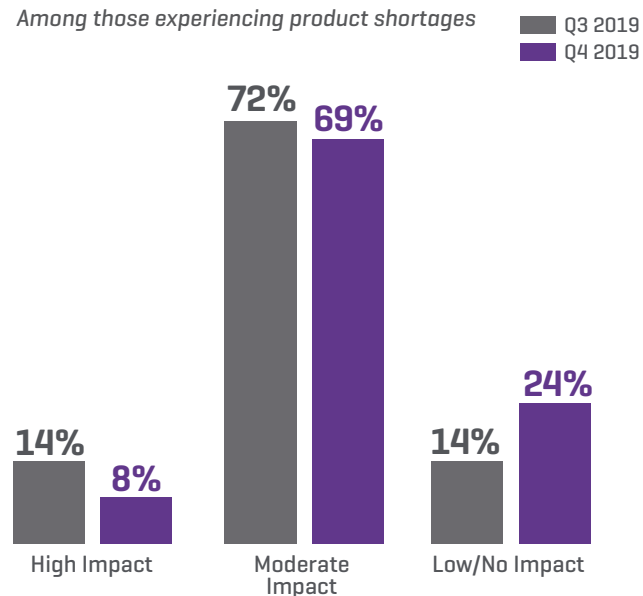
About half of contractors (51%) report they have experienced some product shortages, but there is a notable shift between Q3 and Q4 in the expected impact of those shortages, with those expecting a high impact dropping six points to 8%. Those expecting little to no impact increased by 10 points, from 14% to 24% this quarter.

IMPACTS OF TARIFFS AND TRADE CONFLICTS

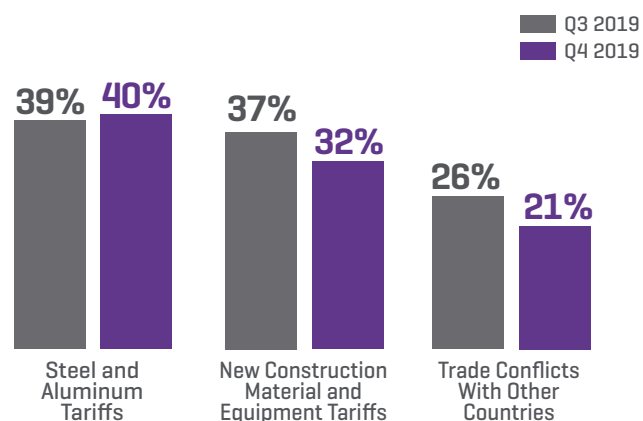
40% of contractors continue to expect steel and aluminum tariffs to have a high impact on their business for the next three years, consistent with the findings from the previous quarter. However, more general concerns about new construction material and equipment tariffs have dropped by five points, as have the expectation of impacts from trade conflicts with other countries.

Impact of Product Shortages on Projects

Among those experiencing product shortages



Contractors Expecting a High Degree of Business Impact from Tariffs and Trade Conflicts in the Next Three Years



VOICE OF THE CONTRACTOR

[The greatest challenge for my business in the next 12 months is] with the political climate of world trade and tariff wars, its potential effect on material pricing.

—CCI Survey Respondent

Note: Percentages for Expected Material Shortages' Impact on Contractors are based on ratings using a 10-point scale, where the three points at the bottom indicate a high impact and the three points at the top indicate a low impact.

5 METHODOLOGY

Dodge Data & Analytics (DD&A) in partnership with USG Corporation and the U.S. Chamber of Commerce conducts the Commercial Construction Index survey on a quarterly basis with the DD&A Contractor Panel. The majority of data represented in this report is from the Q4 2019 survey conducted online from October 17 to 22, 2019.

DD&A CONTRACTOR PANEL

In order to enable reliable market research in the construction industry, DD&A maintains a panel of more than 2,700 decision-makers that includes general contractors, construction managers, design-builders and trade contractors. This panel allows DD&A to provide findings that are representative of the entire U.S. construction industry by geography, and by size and type of company.

FOURTH QUARTER SURVEY DEMOGRAPHICS

209 contractors who do projects in the commercial and institutional sectors in the U.S. (including multifamily residential) responded to the survey.

TYPE OF COMPANY More than half (56%) of respondents are prime contractors (including general contractors, construction managers, design-builders and remodelers), and 44% are trade contractors.

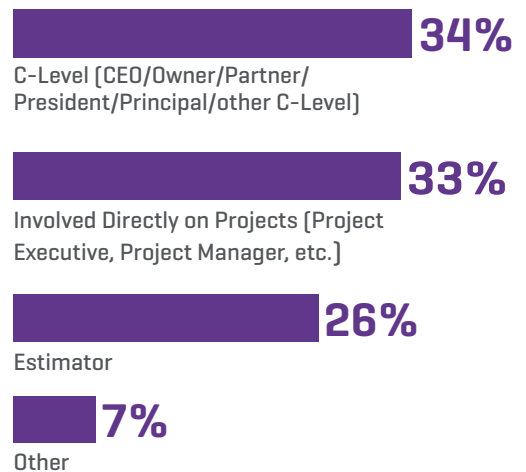
JOB FUNCTION Most are in leadership roles or engaged in projects.

SIZE OF COMPANY The percentage of small and mid-size contractors is higher than that of large companies.

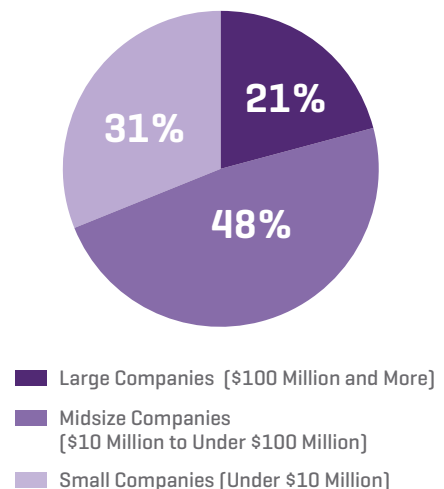
LOCATION 16% of the respondents are located in the Northeast, 34% in the South, 27% in the Midwest and 22% in the West.

The analysis includes comparisons to previous surveys conducted online with the DD&A Contractor Panel since January 2017.

Job Functions of Respondents



Size of Company [by Annual Revenue]



COMMERCIAL CONSTRUCTION INDEX

The Commercial Construction Index is an indicator of the health of the contractor segment of the U.S. building industry. It is comprised of three specific components reflecting aspects of the commercial contractors' situation.

THE FIRST COMPONENT calculates each respondent's ratio of current backlog to ideal backlog. It takes the mean of the ratio across all survey respondents.

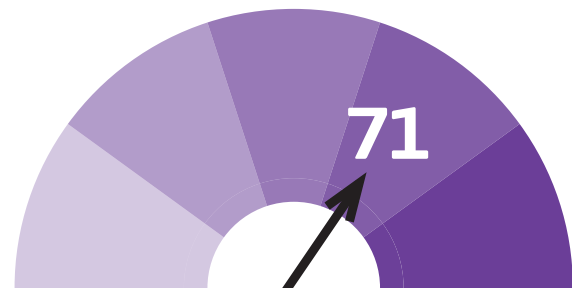
THE SECOND COMPONENT is the mean of all responses, on a scale of 1-10, to the question "How confident are you that the U.S. market will provide your company with sufficient new business opportunities?"

THE THIRD COMPONENT compiles contractors' ranges of expected revenue growth/decline and transposes those to a 10-point scale, then takes the mean of responses on that scale.

Each measure is drawn from the quarterly survey responses, and they are weighted evenly by one third (33.3%) to create the composite index.

DEFINING COMMERCIAL CONSTRUCTION

For purposes of the CCI we define commercial construction as the following types of buildings: Office, Retail, Hospitality, Education, Healthcare, Multifamily Residential (mid- and high-rise), Government, Warehouses, Airport Terminals and other Transportation Buildings.



The Commercial Construction Index is 71 for the fourth quarter of 2019.

- Significant Slowdown
- Down Market
- Neutral Market
- Healthy Market
- Boom Market

USG Corporation is an industry-leading manufacturer of building products and innovative solutions. Headquartered in Chicago, USG serves construction markets around the world through its Gypsum, Performance Materials and Ceilings divisions. Its wall, ceiling, flooring, sheathing and roofing products provide the solutions that enable customers to build the outstanding spaces where people live, work and play. For additional information, visit www.usg.com.

The U.S. Chamber of Commerce is the world's largest business federation representing the interests of more than 3 million businesses of all sizes, sectors and regions, as well as state and local chambers and industry associations. Its International Affairs division includes more than 70 regional and policy experts and 25 country- and region-specific business councils and initiatives. The U.S. Chamber of Commerce also works closely with 117 American Chambers of Commerce abroad.

Dodge Data & Analytics is North America's leading provider of analytics and software-based workflow integration solutions for the construction industry. Building product manufacturers, architects, engineers, contractors and service providers leverage Dodge to identify and pursue unseen growth opportunities and execute on those opportunities for enhanced business performance. Whether it's on a local, regional or national level, Dodge makes the hidden obvious, empowering its clients to better understand their markets, uncover key relationships, size growth opportunities and pursue those opportunities with success. The company's construction project information is the most comprehensive and verified in the industry. Dodge is leveraging its 100-year-old legacy of continuous innovation to help the industry meet the building challenges of the future. To learn more, visit www.construction.com.

This report is intended for general informational purposes only. It is not intended to support an investment decision with respect to USG Corporation, nor is it intended to be used for marketing purposes to any existing or prospective investor of USG. This report is not a forecast of future results for USG and actual results of USG may differ materially from those of the commercial construction industry.



USG Corporation
550 W. Adams Street
Chicago, IL 60661
www.usg.com

U.S. Chamber of Commerce
1615 H Street NW
Washington, DC 20062
www.uschamber.com

For more information, please visit www.commercialconstructionindex.com.