



COVID-19 BUSINESS IMPACT SURVEY WAVE 4

April 9, 2020

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EXECUTIVE SUMMARY

DEMOGRAPHICS

- The geographic location of Respondents' organizations are statistically similar in Waves 1, 2, 3 and 4.
- Throughout the four waves, roughly half of firms report fewer than 50 FTEs. The percentage of firms falling into higher FTE ranges has also remained constant.
 - The median number of FTEs in Wave 4 is 25 compared 26.5 in Wave 3 and 23 for the first two waves. The difference between the waves is not statistically significant, so comparisons between waves can be made accurately.
 - The largest organization in Wave 1 reported 11,000 FTEs compared to 10,000 in Waves 2 and 3, and 7,500 in Wave 4.

ECONOMIC SENTIMENT

- Although a majority of firms still feel conditions in all areas are worse compared to March 1, the negative sentiment regarding the U.S. economy is slightly less negative than in Wave 3 (85% down from 93%).
 - Firms with 25 or fewer FTEs are slightly *more* likely than other firms to say their finances (62%) and cash flow (63%) are worse today.
- Although a majority of firms still feel conditions in all areas will continue to worsen over the coming 30 days, the sentiment is less negative than in Wave 3. For instance, 65% feel the U.S. economy will be worse in 30 days compared to today, but this represents a decline from 81% in Wave 3.
- Sentiment looking out six months from now is only slightly improved compared to Wave 3 (55% say it will be better, up from 53%). Still, nearly half of firms feel the economy will improve while more than one-third think it will be worse. Sentiment about the firms' finances and cash flow follow the same trend.

WORKSTYLE IMPACTS

- More firms have changed their leave policy since Wave 3, likely due to the CARES Act passed by Congress. In particular, more firms are offering emergency paid sick leave (44% up from 34%) and allowing employees to borrow from future leave (29% up from 25%).
 - There is a small increase in the percentage of firms who have increased the number of paid leave hours for employees (13% up from 10%).
 - The larger the firm size, the more likely the firm has implemented emergency paid leave and/or is allowing employees to borrow future leave/go negative on their leave balance. Firms with at least 501 FTEs are also more likely to have changed all other leave policies.
- Compared to Wave 3, there is only one change in the percentage of firms using various methods to ensure work continuation. More firms report implementing site restrictions (57% up from 51%).
 - Generally speaking, the larger the firm size, the more likely the firm has implemented all methods.

BUSINESS IMPACTS

- More firms report they have taken various actions since March 1 to shore up their finances (68% up from 58%). Principal among these are freezing non-essential purchases (48% up from 29%) and implementing hiring freezes (31% up from 29%).
 - Generally speaking, firms with 201+ FTEs are more likely to have taken various actions compared to smaller firms.
- Likely due to more firms having implemented actions already, roughly the same percentage of firms anticipate taking various actions in the coming 30 days, with a few exceptions.
 - Slightly more firms anticipate freezing non-essential purchases in the coming 30 days compared to Wave 3 (45% vs 43%).
 - Likely due to the Payroll Protection Plan loans through the SBA, fewer firms anticipate eliminating staff positions (18% vs. 27%) or contractor/temporary positions (12% vs 19%) and reducing staff salaries/pay (15% vs. 23%).
 - Generally speaking, larger firms are more likely to take various actions in the coming 30 days compared to smaller firms. This is especially true of firms with 201 to 500 FTEs.

BUSINESS IMPACTS (CONT'D)

- Similar to previous waves, very few organizations (7%) report problems with public clients due to protective measures conflicting with contract terms. However, the trend now shows problems are increasing (up from 4% in Wave 1), albeit slowly.
- Similar to previous waves, there continues to be an increase in the percentage of firms (63% up from 45% in Wave 3) reporting delays in RFPs/RFQs or Awards due to COVID-19.
 - As firm size increases, so too does the percentage of firms reporting delays.
- Similar to previous waves, there continues to be an increase in the percentage of firms (76% up from 70% in Wave 2) reporting project delays or cancellations due to COVID-19.
 - As firm size increases, so too does the percentage of firms reporting delays/cancellations, up to 201+ FTEs where it levels off.

BANK/CREDITOR ASSISTANCE

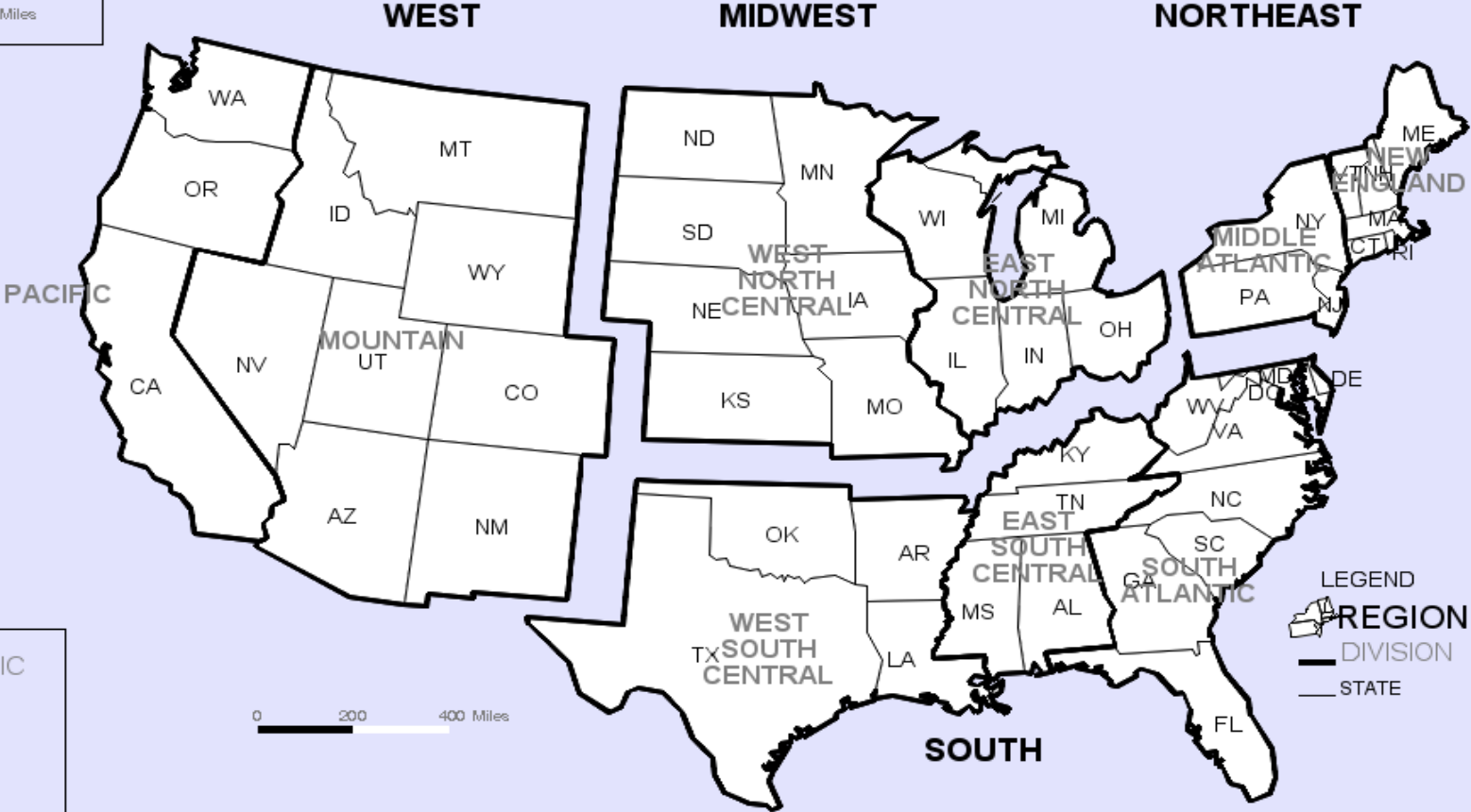
- Compared to previous waves, firms are reporting more types of assistance from their banks/creditors in all areas. Nonetheless, a majority of firms still report they have not received assistance or don't know what assistance is being offered (holding steady at 72%).
 - Firms with 201+ FTEs are more likely to report increasing amounts of credit lines. Firms with 26 to 50 FTEs are more likely to mention interest only payments and/or deferring payments. Firms with 25 or fewer FTEs are more likely to be unaware of assistance efforts.

IMPACT OF FEDERAL STIMULUS PROGRAM

- Compared to Wave 3, many more firms feel the federal stimulus package will have a positive impact (74% up from 51%) and fewer are not sure (14% down from 32%).
 - As firm size increases, so too does the percentage feeling the stimulus package will have a positive impact, with the exception of firms with 501+ FTEs, many of whom feel no impact.
 - Firms with more than 500 FTEs are *less likely* to say the stimulus package will have a positive impact (58%) and *more likely* to say it will have no impact (26%), probably due to the focus of the package being on small businesses.
 - Firms with 25 or fewer FTEs are *more likely* to say they are “not sure” of the impact, likely due to their needing assistance understanding the details of the package.
- Only days after the program opened, 72% of firms have already applied for the Small Business Administration (SBA) Payroll Protection Program (PPP). In addition, another 14% plan to apply.
 - Firms with 25 or fewer FTEs are the least likely to have already applied (67%). However 17% of them plan to apply.

DEMOGRAPHICS

Census Regions and Divisions of the United States

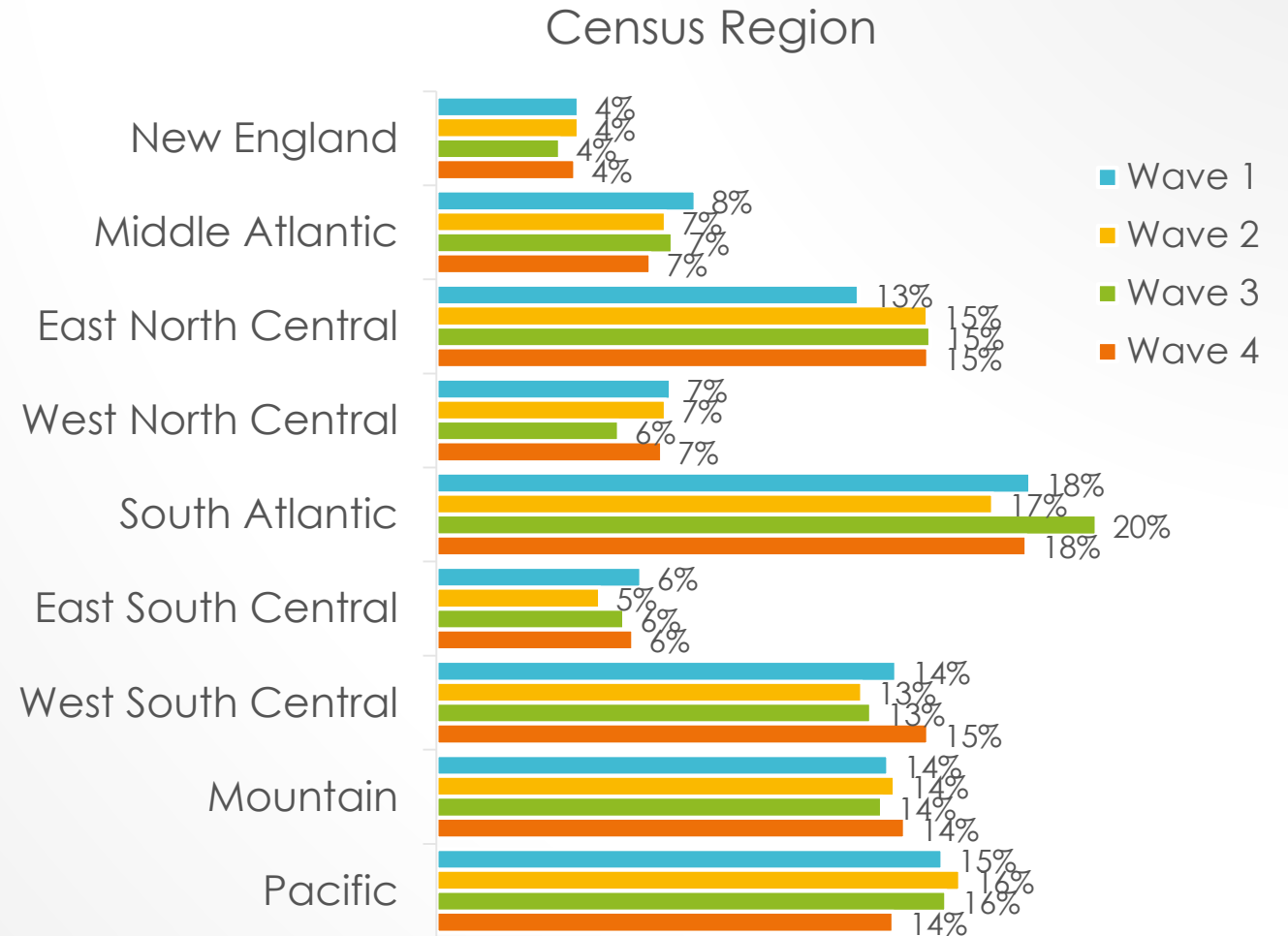


U.S. Department of Commerce Economics and Statistics Administration U.S. Census Bureau (Not) Prepared by the Geography Division

Imitation of http://www.census.gov/geo/www/us_regdiv.pdf

THE GEOGRAPHIC LOCATION OF RESPONDENTS' ORGANIZATIONS ARE STATISTICALLY SIMILAR IN WAVES 1, 2, 3 AND 4.

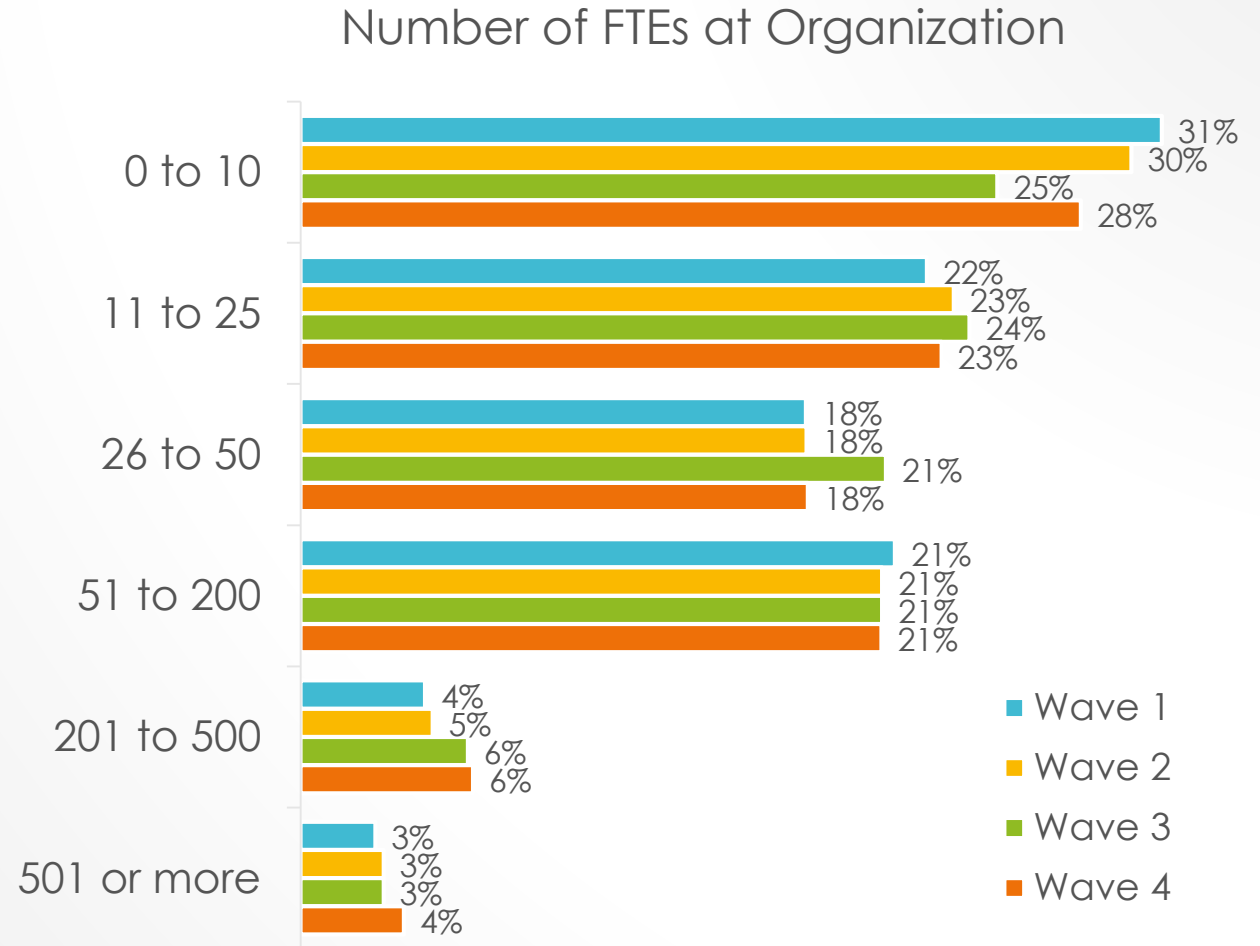
- For an analysis of trends by region, please refer to the report for Wave 1.



Q2. In which state is your organization headquartered?
 Wave 1 - n = 783, Wave 2 - n = 738, Wave 3 - n = 610, Wave 4 - n = 566

THROUGHOUT THE FOUR WAVES, ROUGHLY HALF OF FIRMS REPORT FEWER THAN 50 FTEs. THE PERCENTAGE OF FIRMS FALLING INTO HIGHER FTE RANGES HAS ALSO REMAINED CONSTANT.

- The median number of FTEs in Wave 4 is 25 compared 26.5 in Wave 3 and 23 for the first two waves. The difference between the waves is not statistically significant, so comparison between waves can be made accurately.
- The largest organization in Wave 1 reported 11,000 FTEs compared to 10,000 in Waves 2 and 3, and 7,500 in Wave 4.
- Throughout this report all questions are reported by firm size and statistically significant differences are noted.

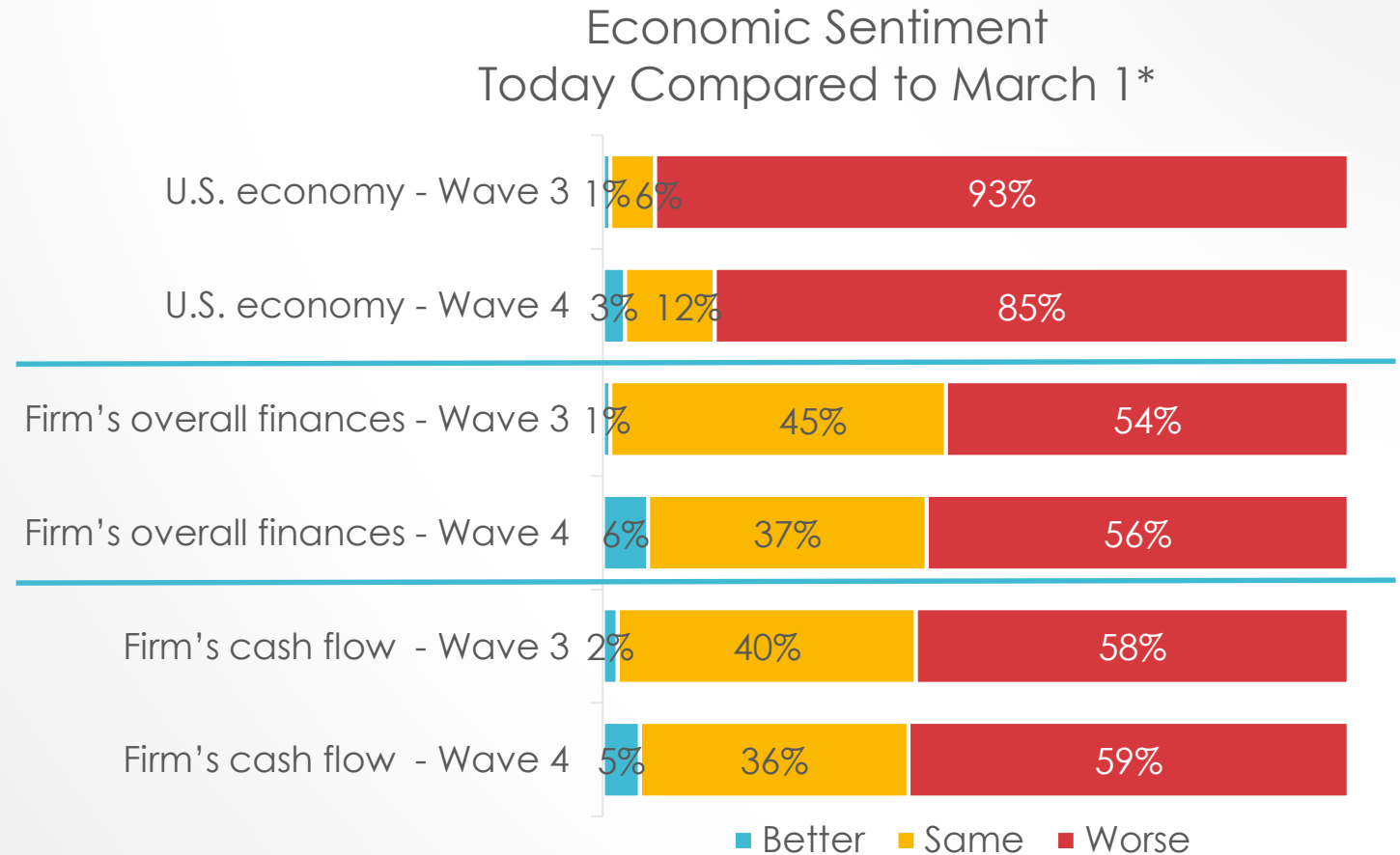


Q3. Including yourself, how many full-time equivalent employees (FTEs) do you have? If you are not sure, please provide your best estimate.
Wave 1 - n = 783, Wave 2 - n = 738, Wave 3 - n = 610, Wave 4 - n = 566

ECONOMIC SENTIMENT

ALTHOUGH A MAJORITY OF FIRMS STILL FEEL CONDITIONS IN ALL AREAS ARE WORSE COMPARED TO MARCH 1, THE NEGATIVE SENTIMENT REGARDING THE U.S. ECONOMY IS SLIGHTLY LESS NEGATIVE THAN IN WAVE 3.

- There is only one statistically significant difference by firm size:
 - Firms with 25 or fewer FTEs are slightly more likely than other firms to say their finances (62%) and cash flow (63%) are worse today.

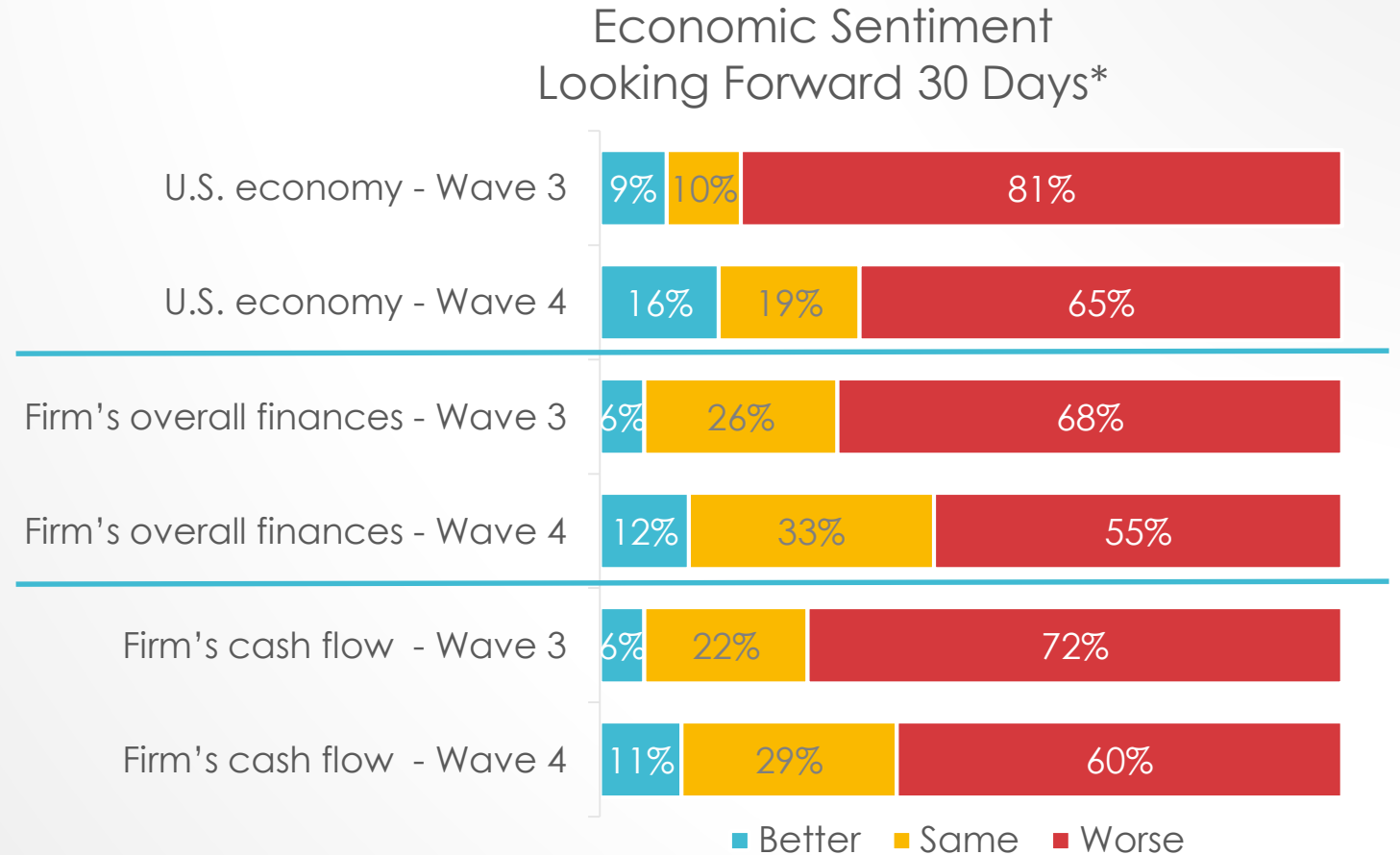


* Not asked in Waves 1 and 2

Q12. Compared to March 1, how do you feel about each of the following today?
 "Not sure" responses omitted from calculations
 Wave 3 - n = 592 - 585, Wave 4 - n = 557 - 555

ALTHOUGH A MAJORITY OF FIRMS STILL FEEL CONDITIONS IN ALL AREAS WILL CONTINUE TO WORSEN OVER THE COMING 30 DAYS, THE SENTIMENT IS LESS NEGATIVE THAN IN WAVE 3.

- There are no meaningful, statistically significant differences by firm size.

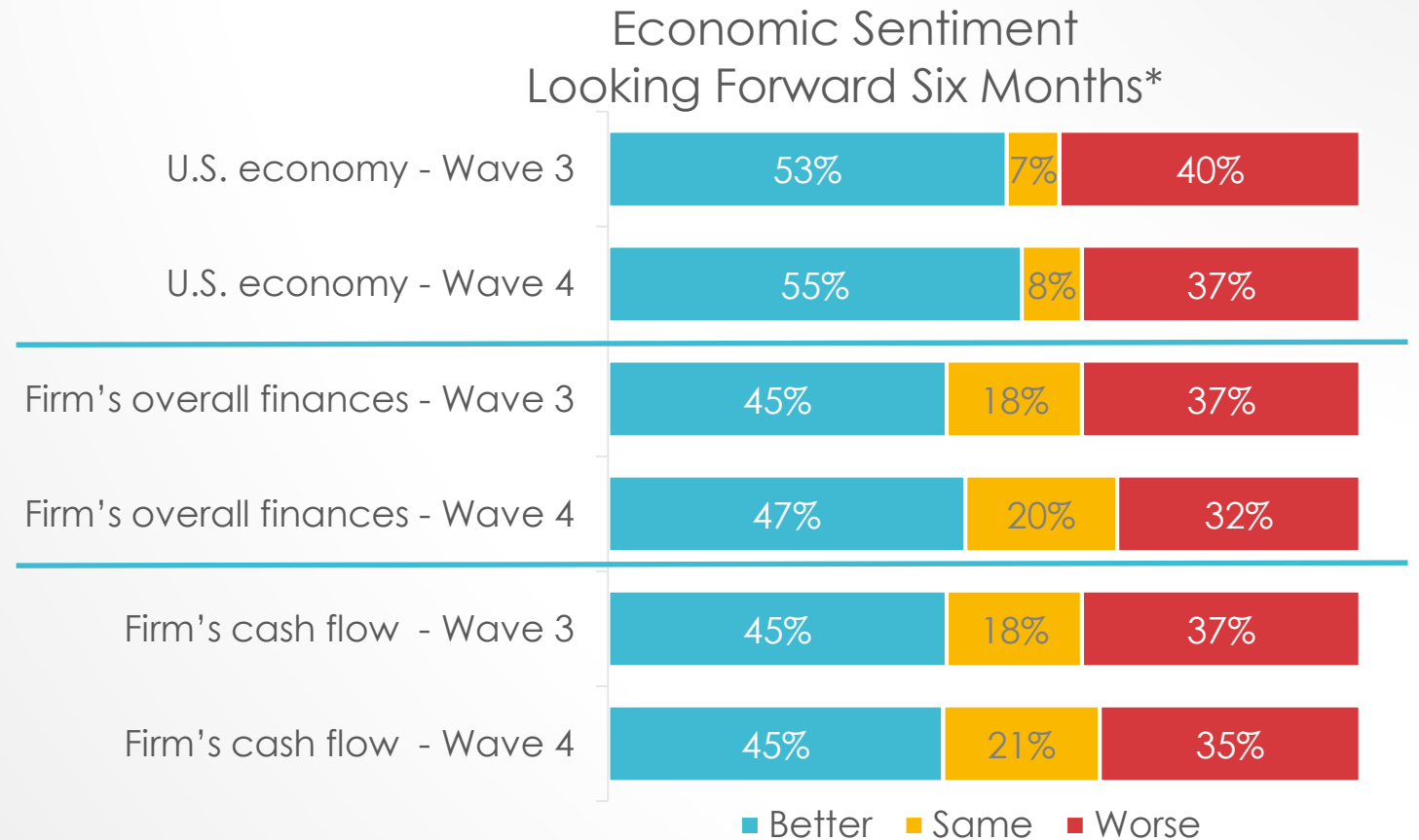


Q14. Looking ahead 30 days, how do you think each of the following will be 30 days from now?
 "Not sure" responses omitted from calculations
 Wave 3 - n = 582 - 572, Wave 4 - n = 550

* Not asked in Waves 1 and 2

SENTIMENT LOOKING OUT SIX MONTHS FROM NOW IS ONLY SLIGHTLY IMPROVED COMPARED TO WAVE 3. STILL, NEARLY HALF OF FIRMS FEEL THE ECONOMY WILL IMPROVE WHILE MORE THAN ONE-THIRD THINK IT WILL BE WORSE. SENTIMENT ABOUT THE FIRMS' FINANCES AND CASH FLOW FOLLOW THE SAME TREND.

- There are no meaningful, statistically significant differences by firm size.



Q16. Looking ahead six months, how do you think each of the following will be six months from now?
 "Not sure" responses omitted from calculations
 Wave 3 - n = 570 - 558, Wave 4 - n = 546 - 539

* Not asked in Waves 1 and 2

WORKSTYLE IMPACTS

MORE FIRMS HAVE CHANGED THEIR LEAVE POLICY SINCE WAVE 3 LIKELY DUE TO THE CARES ACT PASSED BY CONGRESS. MORE FIRMS ARE OFFERING EMERGENCY PAID SICK LEAVE (44% UP FROM 34%) AND ALLOWING EMPLOYEES TO BORROW FROM FUTURE LEAVE (29% UP FROM 25%).

- There is a small increase in the percentage of firms who have increased the number of paid leave hours for employees (13% up from 10%).

Leave Policy Changes



Q4. Since March 1, which of the following, if any, has your company implemented regarding its leave policy? Select All That Apply
 Wave 1 - n = 789, Wave 2 - n = 730, Wave 3 - n = 608, Wave 4 - n = 562

THE LARGER THE FIRM SIZE, THE MORE LIKELY THE FIRM HAS IMPLEMENTED EMERGENCY PAID LEAVE AND/OR IS ALLOWING EMPLOYEES TO BORROW FUTURE LEAVE / GO NEGATIVE ON THEIR LEAVE BALANCE. FIRMS WITH AT LEAST 501 FTES ARE ALSO MORE LIKELY TO HAVE CHANGED ALL OTHER LEAVE POLICIES.

Leave Policy Changes by Firm Size (FTE)

	Total	0 to 25	26 to 50	51 to 200	201 to 500	501 or more
Emergency paid leave for those who become sick, must self-quarantine, or care for others	44%	31%	51%	62%	74%	55%
Emergency unpaid leave for those who become sick, must self-quarantine, or care for others	9%	7%	10%	15%	9%	15%
Encouraging employees to donate their paid leave to others who need it	6%	2%	6%	7%	23%	20%
Increased the number of paid leave hours to each employee	13%	12%	8%	16%	17%	30%
Increased the number of unpaid leave hours to each employee	4%	2%	1%	9%	6%	25%
Allow employees to borrow from future leave / go negative on their leave balance	29%	20%	31%	36%	51%	65%
We already have an unrestricted leave policy	11%	15%	8%	5%	3%	15%
None of the above	31%	42%	25%	22%	11%	0%

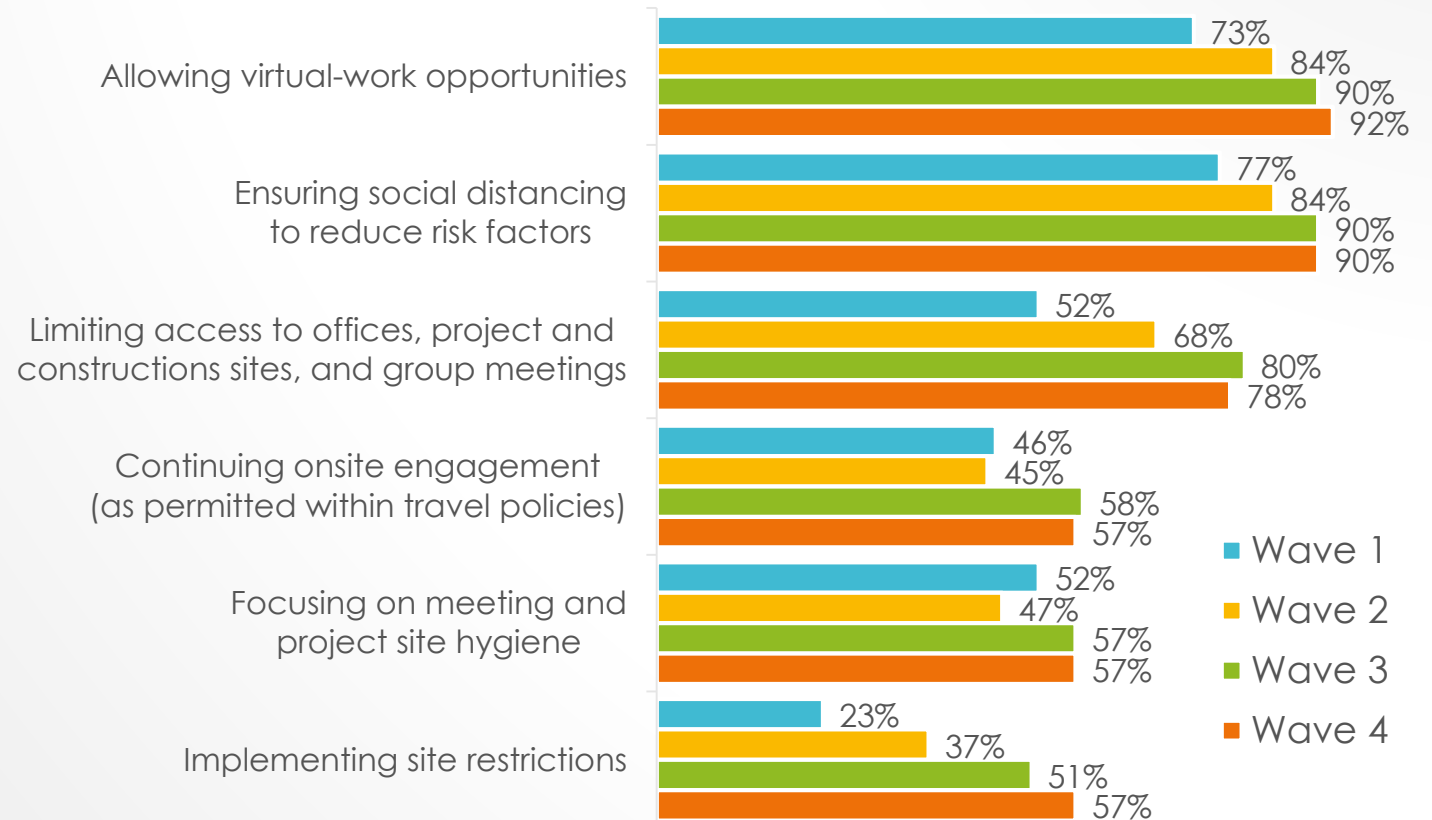
Q4. Which of the following, if any, has your company implemented regarding its leave policy? Select All That Apply
 Wave 1 - n = 789, Wave 2 - n = 730, Wave 3 - n = 608, Wave 4 - n = 562

Indicates significantly <u>higher</u> percentage
Indicates significantly <u>lower</u> percentage

COMPARED TO WAVE 3, THERE IS ONLY ONE CHANGE IN THE PERCENTAGE OF FIRMS USING VARIOUS METHODS TO ENSURE WORK CONTINUATION. MORE FIRMS REPORT IMPLEMENTING SITE RESTRICTIONS (57% UP FROM 51%).

- Differences by firm size are detailed on the following slide.

Methods of Working With Clients to Ensure Work Continuation



Q5. In which of the following ways, if any, are you working with your client counterparts to ensure projects can be executed and work can continue?
Select All That Apply

Wave 1 - n = 791, Wave 2 - n = 727, Wave 3 - n = 605, Wave 4 - n = 561

GENERALLY SPEAKING, THE LARGER THE FIRM SIZE, THE MORE LIKELY THE FIRM HAS IMPLEMENTED ALL METHODS.

Methods of Working With Clients to Ensure Work Continuation by Firm Size (FTE)

	Total	0 to 25	26 to 50	51 to 200	201 to 500	501 or more
Allowing virtual-work opportunities	92%	87%	93%	98%	100%	100%
Ensuring social distancing to reduce risk factors	90%	87%	93%	91%	97%	100%
Limiting access to offices, project and construction sites, and group meetings	78%	69%	83%	89%	89%	95%
Implementing site restrictions	57%	49%	59%	67%	74%	85%
Focusing on meeting and project site hygiene	57%	47%	61%	66%	83%	85%
Continuing onsite engagement	57%	52%	51%	64%	69%	90%

Indicates significantly higher percentage

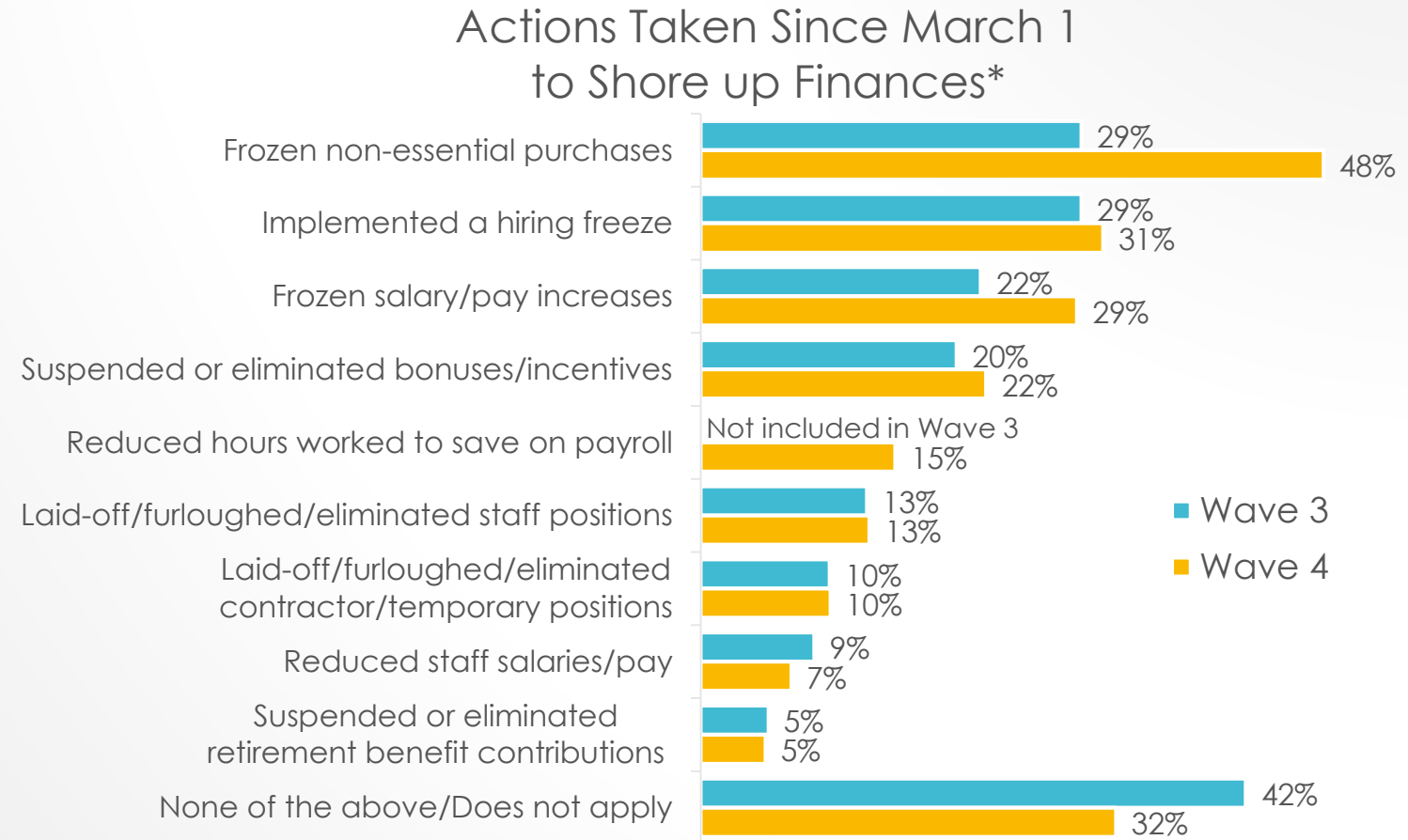
Indicates significantly lower percentage

Q5. In which of the following ways, if any, are you working with your client counterparts to ensure projects can be executed and work can continue? Select All That Apply

BUSINESS IMPACTS

MORE FIRMS REPORT THEY HAVE TAKEN VARIOUS ACTIONS SINCE MARCH 1 TO SHORE UP THEIR FINANCES (68% UP FROM 58%). PRINCIPAL AMONG THESE ARE FREEZING NON-ESSENTIAL PURCHASES (48% UP FROM 29%) AND IMPLEMENTING HIRING FREEZES (31% UP FROM 29%).

- Differences by firm size are detailed on the following slide.



* Not asked in Waves 1 and 2

Q13. Which of the following actions, if any, has your firm taken since March 1, 2020? Select All That Apply
Wave 3 - n = 593, Wave 4 - n = 559

GENERALLY SPEAKING, FIRMS WITH 201+ FTES ARE MORE LIKELY TO HAVE TAKEN VARIOUS ACTIONS COMPARED TO SMALLER FIRMS.

Actions Taken in Past 30 Days to Shore up Finances by Firm Size

	Total	0 to 10	26 to 50	51 to 200	201 to 500	501 or more
Frozen non-essential purchases	48%	46%	41%	50%	71%	63%
Implemented a hiring freeze	31%	29%	32%	29%	51%	37%
Frozen salary/pay increases	29%	28%	25%	29%	43%	37%
Suspended or eliminated bonuses/incentives	22%	21%	19%	21%	37%	21%
Reduced hours worked to save on payroll	15%	14%	12%	15%	20%	37%
Laid-off/furloughed/eliminated staff positions	13%	8%	15%	17%	34%	26%
Laid-off/furloughed/eliminated contractor/temporary positions	10%	7%	10%	11%	17%	37%
Reduced staff salaries/pay	7%	6%	7%	9%	17%	5%
Suspended or eliminated retirement benefit contributions	5%	3%	4%	7%	20%	5%
None of the above/Does not apply	32%	37%	28%	28%	14%	16%

Indicates significantly higher percentage

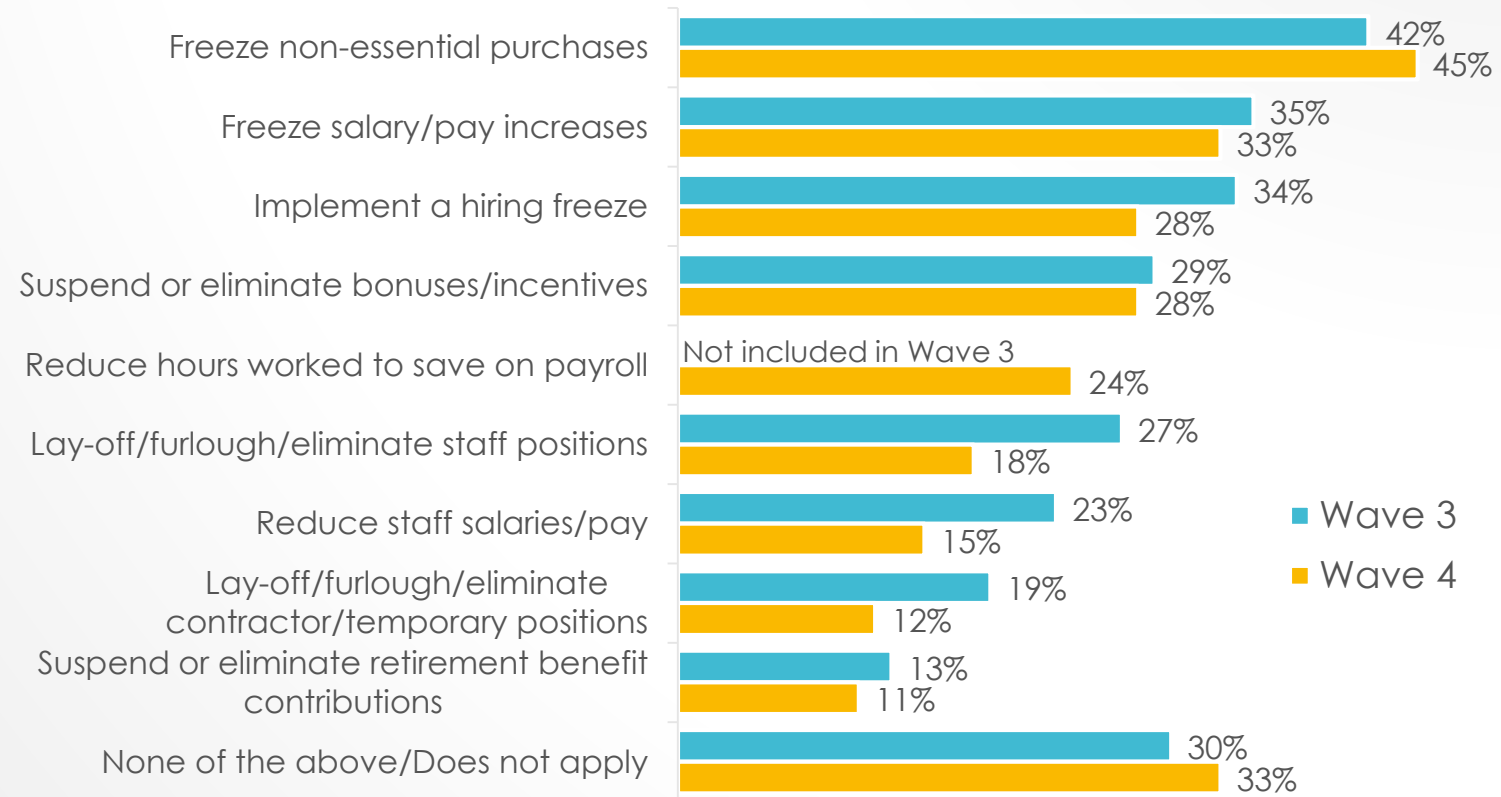
Indicates significantly lower percentage

Q13. Which of the following actions, if any, has your firm taken in the past 30 days? Select All That Apply
Wave 4 - n = 559

LIKELY DUE TO MORE FIRMS HAVING IMPLEMENTED ACTIONS ALREADY, ROUGHLY THE SAME PERCENTAGE OF FIRMS ANTICIPATE TAKING VARIOUS ACTIONS IN THE COMING 30 DAYS AS DID SO IN WAVE 3, WITH A FEW EXCEPTIONS.

- Slightly more firms anticipate freezing non-essential purchases in the coming 30 days compared to Wave 3 (45% vs 42%).
- Likely due to the Payroll Protection Plan loans through the SBA, fewer firms anticipate eliminating staff positions (18% vs. 27%) or contractor/temporary positions (12% vs 19%) and reducing staff salaries/pay (15% vs. 23%).

Actions Planned in Next 30 Days to Shore up Finances*



* Not asked in Waves 1 and 2

Q15. Which of the following actions, if any, is it likely your firm will take in the next 30 days? Select All That Apply
Wave 3 - n = 592, Wave 4 - n = 555

GENERALLY SPEAKING, LARGER FIRMS ARE MORE LIKELY TO TAKE VARIOUS ACTIONS IN THE COMING 30 DAYS COMPARED TO SMALLER FIRMS. THIS IS ESPECIALLY TRUE OF FIRMS WITH 201 TO 500 FTES.

Actions Planned in Next 30 Days to Shore up Finances by Firm Size

	Total	0 to 10	26 to 50	51 to 200	201 to 500	501 or more
Freeze non-essential purchases	45%	44%	41%	50%	49%	53%
Freeze salary/pay increases	33%	33%	21%	38%	51%	32%
Implement a hiring freeze	28%	27%	23%	34%	40%	21%
Suspend or eliminate bonuses/incentives	28%	28%	22%	30%	40%	21%
Reduce hours worked to save on payroll	24%	26%	17%	26%	23%	32%
Lay-off/furlough/eliminate staff positions	18%	13%	14%	23%	37%	53%
Reduce staff salaries/pay	15%	16%	10%	15%	26%	11%
Laid-off/furlough/eliminate contractor/temporary positions	12%	8%	8%	17%	26%	42%
Suspend or eliminate retirement benefit contributions	11%	11%	7%	11%	9%	26%
None of the above/Does not apply	33%	36%	37%	30%	17%	11%

Indicates significantly higher percentage

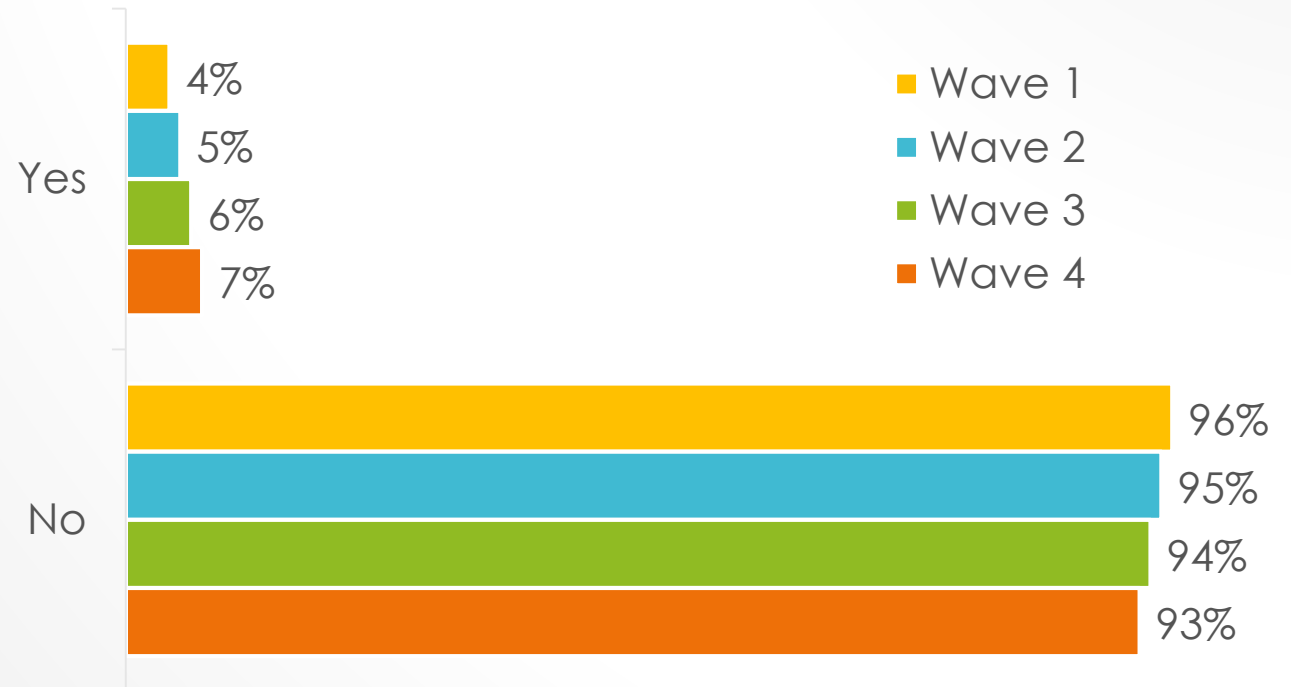
Indicates significantly lower percentage

Q15. Which of the following actions, if any, is it likely your firm will take in the next 30 days? Select All That Apply
Wave 4 - n = 555

SIMILAR TO PREVIOUS WAVES, VERY FEW ORGANIZATIONS (7%) REPORT PROBLEMS WITH PUBLIC CLIENTS DUE TO PROTECTIVE MEASURES CONFLICTING WITH CONTRACT TERMS. HOWEVER, THE TREND NOW SHOWS PROBLEMS ARE INCREASING, ALBEIT SLOWLY.

- Although percentages vary by firm size, the differences are not statistically significant:
 - 0 to 25 FTEs = 8% "Yes"
 - 26 to 50 FTEs = 3%
 - 51 to 200 FTEs = 6%
 - 201 to 500 FTEs = 6%
 - 501 or more FTEs = 5%

Problems With Public Clients Due to Protective Measures Conflicting with Contract Terms

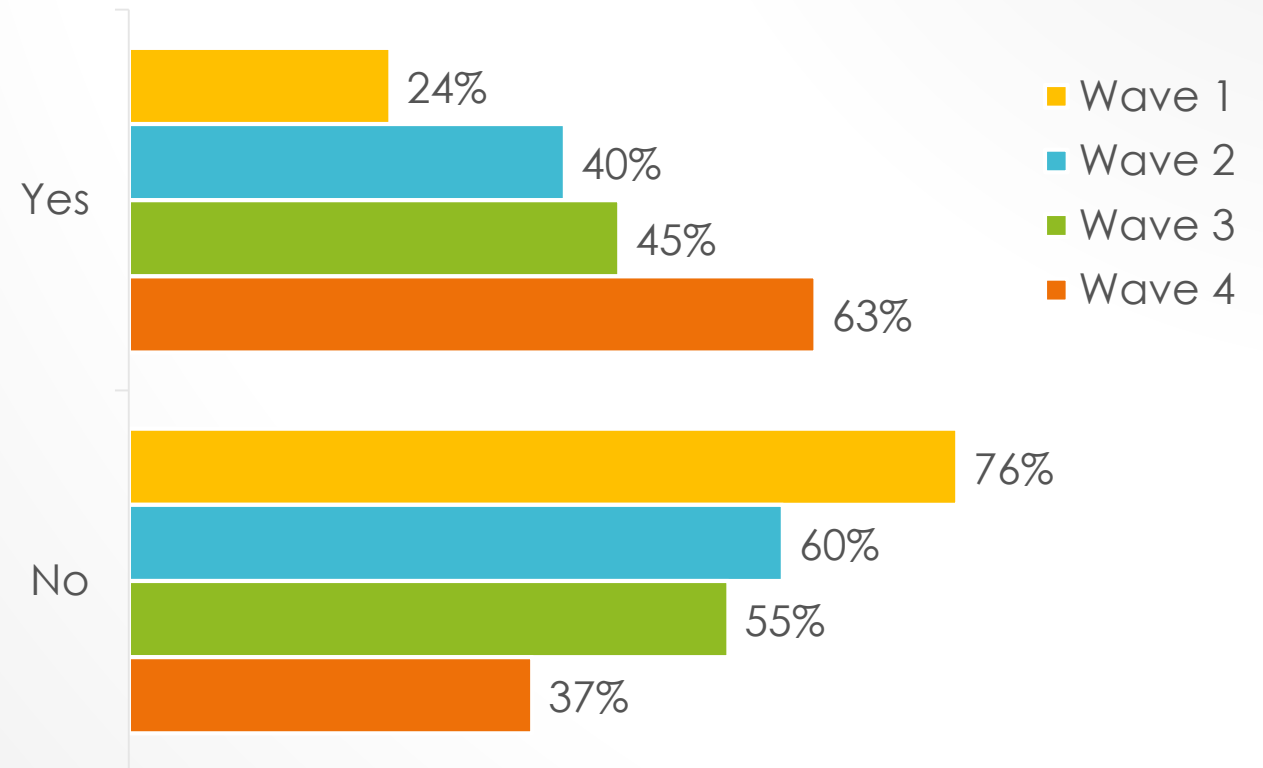


Q6. Has your company experienced problems with public clients when protective measures may conflict with contract terms?
Wave 1 - n = 791, Wave 2 - n = 726, Wave 3 - n = 602, Wave 4 - n = 560

SIMILAR TO PREVIOUS WAVES, THERE CONTINUES TO BE AN INCREASE IN THE PERCENTAGE OF FIRMS (63% UP FROM 45% IN WAVE 3) REPORTING DELAYS IN RFPS/RFQS OR AWARDS DUE TO COVID-19.

- As firm size increases, so too does the percentage reporting delays:
 - 0 to 25 FTEs = 58% “Yes”
 - 26 to 50 FTEs = 61%
 - 51 to 200 FTEs = 72%
 - 201 to 500 FTEs = 66%
 - 501 or more FTEs = 83%

Delays in RFPs/RFQs or Awards Due to COVID-19

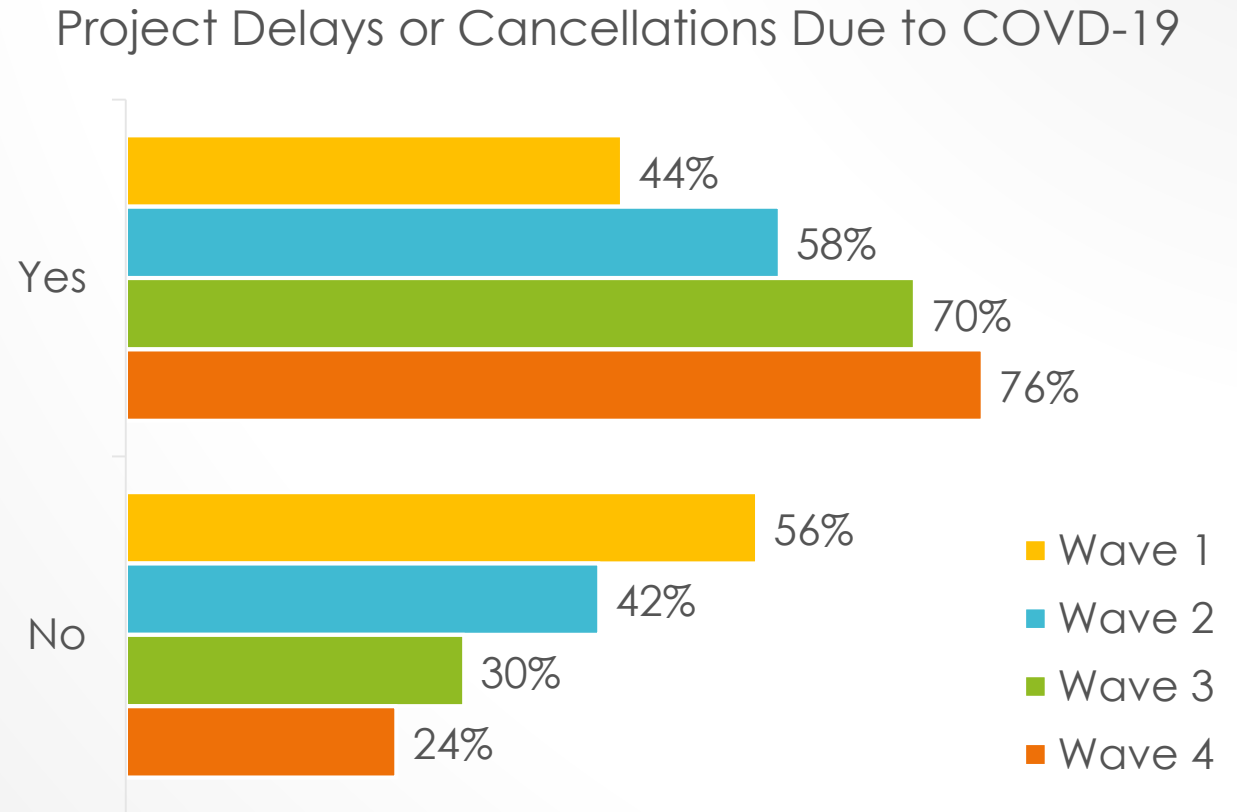


Q8. Is your firm experiencing delays in the issuance of RFPs/RFQs or awards as a result of COVID-19?

Wave 1 - n = 787, Wave 2 - n = 720, Wave 3 - n = 593, Wave 4 - n = 557

SIMILAR TO PREVIOUS WAVES, THERE CONTINUES TO BE AN INCREASE IN THE PERCENTAGE OF FIRMS (76% UP FROM 70% IN WAVE 2) REPORTING PROJECT DELAYS OR CANCELLATIONS DUE TO COVID-19.

- As firm size increases, so too does the percentage of firms reporting delays/cancellations, up to 201 FTEs where it levels off:
 - 0 to 25 FTEs = 74% "Yes"
 - 26 to 50 FTEs = 75%
 - 51 to 200 FTEs = 78%
 - 201 to 500 FTEs = 91%
 - 501 or more FTEs = 89%



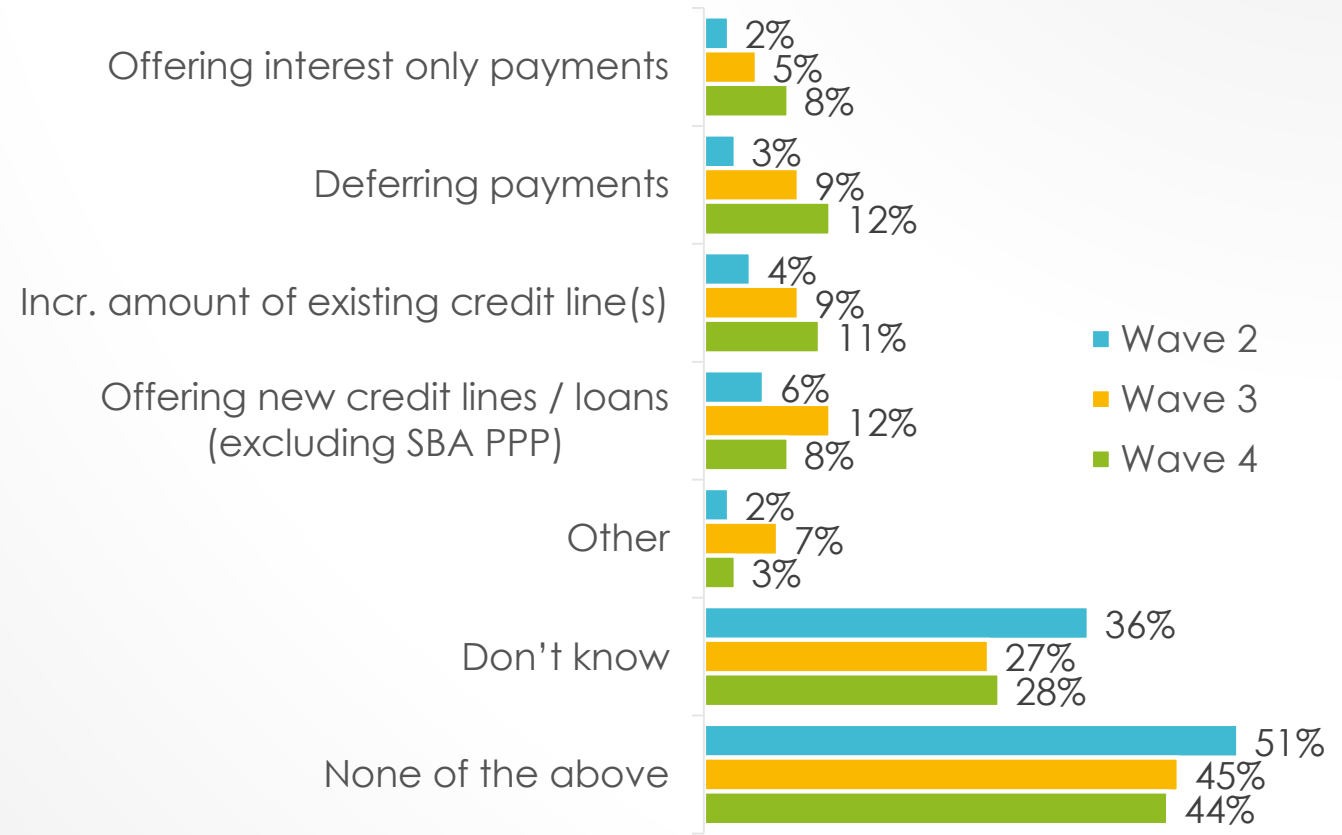
Q7. Is your firm experiencing project delays or cancellations as a result of COVID-19?
Wave 1 - n = 785, Wave 2 - n = 725, Wave 3 - n = 598, Wave 4 - n = 556

BANK/CREDITOR ASSISTANCE

COMPARED TO PREVIOUS WAVES, FIRMS ARE REPORTING MORE TYPES OF ASSISTANCE FROM THEIR BANKS/CREDITORS IN ALL AREAS. NONETHELESS, A MAJORITY OF FIRMS STILL REPORT THEY HAVE NOT RECEIVED ASSISTANCE OR DON'T KNOW (HOLDING STEADY AT 72%).

- Differences by firm size are shown on the following slide.

Creditor Assistance Managing Financial Challenges*



Q9. Which of the following, if any, are your creditors doing to assist your organization with managing the financial challenges related to COVID-19?

Select All That Apply

Wave 2 - n = 721, Wave 3 - n = 597, Wave 4 - n = 557

* Not asked in Wave 1

FIRMS WITH 201+ FTES ARE MORE LIKELY TO REPORT INCREASING AMOUNTS OF CREDIT LINES. FIRMS WITH 26 TO 50 FTES ARE MORE LIKELY TO MENTION INTEREST ONLY PAYMENTS AND/OR DEFERRING PAYMENTS. FIRMS WITH 25 OR FEWER FTES ARE MORE LIKELY TO BE UNAWARE OF ASSISTANCE EFFORTS.

Creditor Assistance Managing Financial Challenges by Firm Size (FTE)

	Total	0 to 25	26 to 50	51 to 200	201 to 500	501 or more
Offering interest only payments	8%	3%	21%	5%	9%	11%
Deferring payments	12%	11%	19%	9%	17%	0%
Increasing the amount of your existing credit line(s)	11%	5%	13%	14%	26%	44%
Offering new credit lines / loans	8%	9%	7%	5%	9%	11%
Other	3%	2%	2%	3%	3%	11%
None of the above	44%	43%	40%	50%	43%	33%
Don't know	28%	35%	23%	22%	20%	11%

Indicates significantly higher percentage

Indicates significantly lower percentage

Q9. Which of the following, if any, are your creditors doing to assist your organization with managing the financial challenges related to COVID-19?

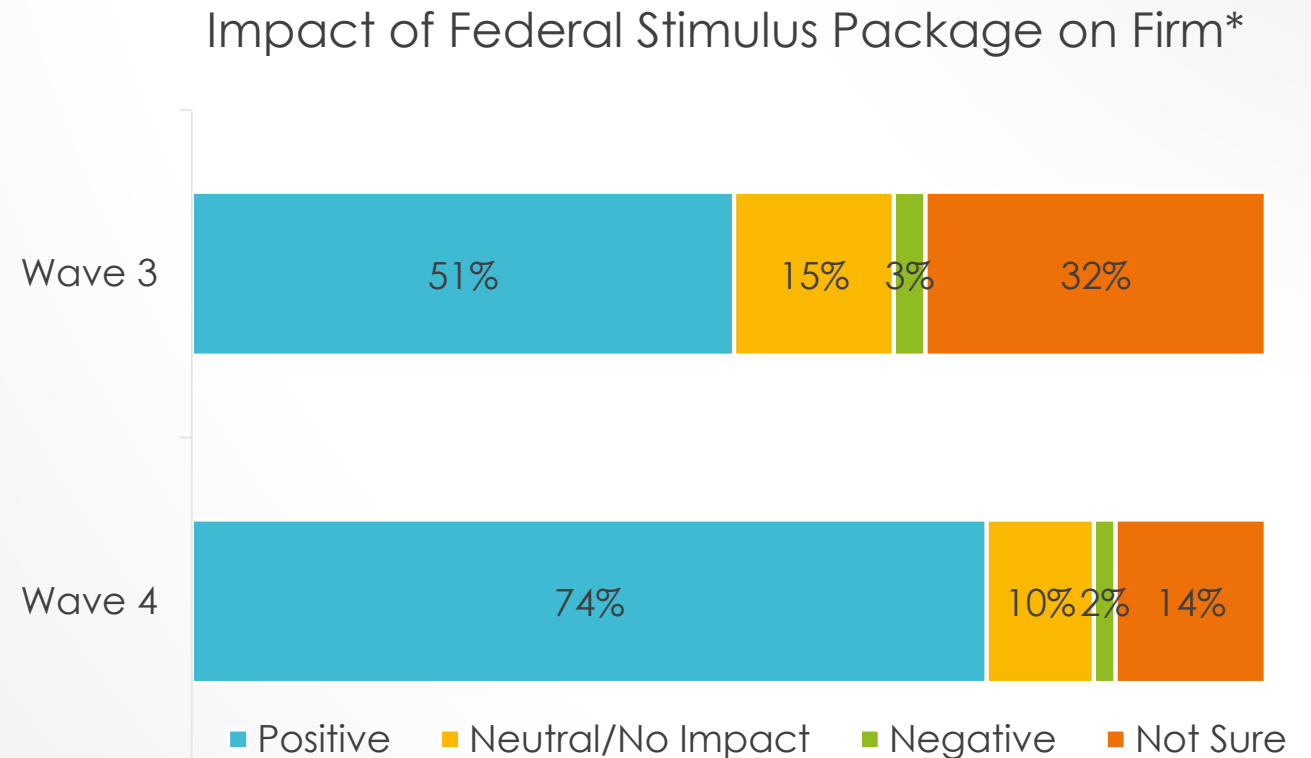
Select All That Apply

Wave 4 - n = 557

IMPACT OF FEDERAL STIMULUS PROGRAM

COMPARED TO WAVE 3, MANY MORE FIRMS FEEL THE FEDERAL STIMULUS PACKAGE WILL HAVE A POSITIVE IMPACT (74% UP FROM 51%) AND FEWER ARE NOT SURE (14% DOWN FROM 32%).

- Details of differences by firm size are found on the following slide.



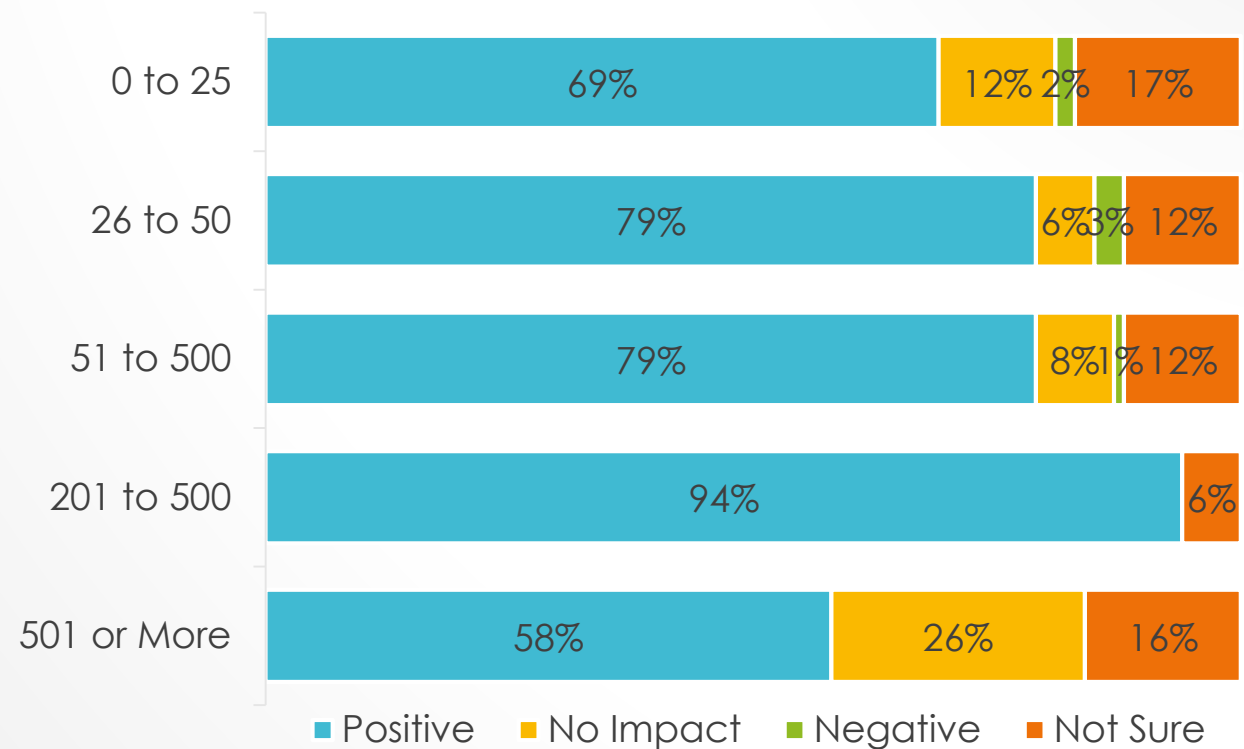
Q10.How will the U.S. Government's stimulus package passed two weeks ago affect your firm, if at all? Will the impact be...?
Wave 3 - n = 598, Wave 4 - n = 560

* Not asked in Waves 1 and 2

AS FIRM SIZE INCREASES, SO TOO DOES THE PERCENTAGE FEELING THE STIMULUS PACKAGE WILL HAVE A POSITIVE IMPACT, WITH THE EXCEPTION OF FIRMS WITH 501+ FTES, MANY OF WHOM FEEL NO IMPACT.

- Firms with more than 500 FTEs are *less likely* to say the stimulus package will have a positive impact (58%) and *more likely* to say it will have no impact (26%), probably due to the focus of the package being on small businesses.
- Firms with 25 or fewer FTEs are *more likely* to say they are “not sure” of the impact, likely due to their needing assistance understanding the details of the package.

Impact of Federal Stimulus Package on Firm*
By Firm Size



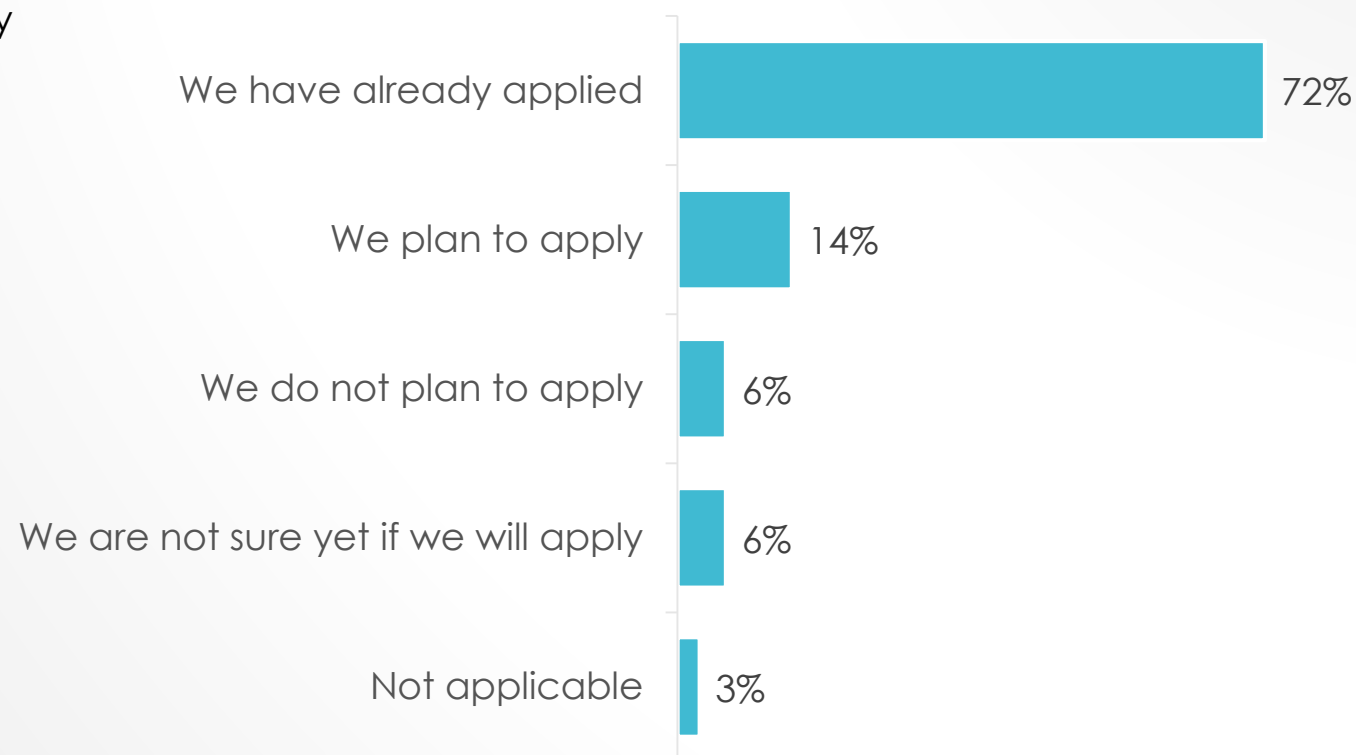
Q10. How will the U.S. Government's stimulus package passed last week affect your firm, if at all? Will the impact be...?
Wave 4 - n = 560

* Not asked in Waves 1 and 2

ONLY DAYS AFTER THE PROGRAM OPENED, 72% OF FIRMS HAVE ALREADY APPLIED FOR THE SMALL BUSINESS ADMINISTRATION (SBA) PAYROLL PROTECTION PROGRAM (PPP). IN ADDITION, ANOTHER 14% PLAN TO APPLY.

- Firms with 25 or fewer FTEs are the least likely to have already applied. However 17% of them plan to apply.
 - 0 to 25 FTEs = 67% “Already applied”
 - 26 to 50 FTEs = 81%
 - 51 to 200 FTEs = 82%
 - 201 to 500 FTEs = 86%
 - 501 or more FTEs = Not Applicable

Status of Applying for SBA PPP*



Q11. Have you already applied, or do you plan to apply, for the Small Business Administration (SBA) Payroll Protection Program (PPP) authorized by Congress as part of the COVID-19 stimulus plan?

Wave 4 - n = 560

* Not asked in Waves 1, 2 or 3

APPENDIX

RESEARCH CONDUCTED BY

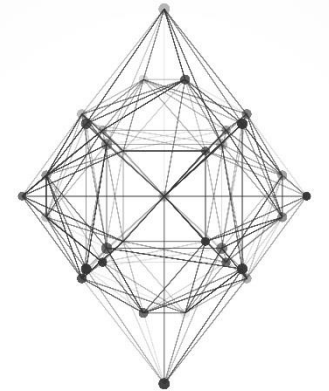


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METHODOLOGY – WAVE 1

- The Institute for Association and Nonprofit Research (IFANR) invited individuals from among the database list of member companies provided by the American Council of Engineering Companies (ACEC) to participate in this survey. One invitation was sent per member company.
 - Data collection occurred on March 17 and 18, 2020.
 - A total of 3,456 invitations were emailed, although 294 bounced and 17 opted-out, resulting in a total of 3,145 potential respondents.
 - Individuals who did not respond to the first email were sent one follow-up reminder.
 - In all, 794 individuals responded to the email invitations for an overall **response rate of 25%**.
- Individuals could respond using a laptop/desktop computer, tablet or smartphone; 12% of respondents completed the survey using a mobile device.
- Throughout the report for Wave 1 meaningful, statistically significant differences are noted by geographic region.

METHODOLOGY – WAVE 2

- The Institute for Association and Nonprofit Research (IFANR) invited individuals from among the database list of member companies provided by the American Council of Engineering Companies (ACEC) to participate in this survey. One invitation was sent per member company.
 - Data collection occurred on March 24 and 25, 2020.
 - A total of 3,438 invitations were emailed, although 298 bounced and 20 opted-out, resulting in a total of 3,120 potential respondents.
 - Individuals who did not respond to the first email were sent one follow-up reminder.
 - In all, 738 individuals responded to the email invitations for an overall **response rate of 24%**.
- Individuals could respond using a laptop/desktop computer, tablet or smartphone; 11% of respondents completed the survey using a mobile device.
- Throughout this report meaningful, statistically significant differences are noted by number of FTEs.

METHODOLOGY – WAVE 3

- The Institute for Association and Nonprofit Research (IFANR) invited individuals from among the database list of member companies provided by the American Council of Engineering Companies (ACEC) to participate in this survey. One invitation was sent per member company.
 - Data collection occurred on March 31 and April 1, 2020.
 - A total of 3,417 invitations were emailed, although 298 bounced and 9 opted-out, resulting in a total of 3,110 potential respondents.
 - Individuals who did not respond to the first email were sent one follow-up reminder.
 - In all, 610 individuals responded to the email invitations for an overall **response rate of 20%**.
- Individuals could respond using a laptop/desktop computer, tablet or smartphone; 10% of respondents completed the survey using a mobile device.
- Throughout this report meaningful, statistically significant differences are noted by number of FTEs.

METHODOLOGY – WAVE 4

- The Institute for Association and Nonprofit Research (IFANR) invited individuals from among the database list of member companies provided by the American Council of Engineering Companies (ACEC) to participate in this survey. One invitation was sent per member company.
 - Data collection occurred on April 7 and 8, 2020.
 - A total of 3,407 invitations were emailed, although 291 bounced and 9 opted-out, resulting in a total of 3,107 potential respondents.
 - Individuals who did not respond to the first email were sent one follow-up reminder.
 - In all, 566 individuals responded to the email invitations for an overall **response rate of 18%**.
- Individuals could respond using a laptop/desktop computer, tablet or smartphone; 10% of respondents completed the survey using a mobile device.
- Throughout this report meaningful, statistically significant differences are noted by number of FTEs.

STATISTICAL NOTES

- Statistically significant differences are evaluated at a 95% confidence interval (for a description of tests used, please see the Appendix).
- There is no margin of sampling error as this was a census of all individuals in the ACEC database.
- Although every effort was taken to minimize survey bias, there is no way to completely eliminate all sources of potential bias. Sources of potential bias include, but are not limited to, the following:
 - Non-response bias
 - Confounding bias
 - Question wording bias
 - Question order bias
 - Habituation
 - Sponsor bias
 - Confirmation bias

TESTS OF SIGNIFICANCE FOR MEANS

F-test

When the mean is displayed for a row variable, MarketSight first runs an Analysis of Variance (ANOVA) using an F-test. Doing so tests the hypothesis that the means of multiple normally distributed populations, all having the same variance, are equal.

MarketSight tests whether or not the row variable's means are equal to one another for all columns in the crosstab. Rejecting the test hypothesis implies that at least one of the column means is significantly different from the others.

Fisher's Least Significant Difference (LSD) test

If the statistics option to "Correct for Type I errors in all comparisons" is disabled, MarketSight will run Fisher's LSD test for both Pairwise tests and Contrast tests of means. MarketSight only runs Fisher's LSD test if the ANOVA F-test first rejects the null hypothesis that all column means are equal to one another.

Fisher's LSD test is a relatively powerful test because it uses the pooled variance estimate from the F-test, thus taking advantage of the increased sample size of all columns in the crosstab. Pooling the variance is valid because MarketSight explicitly tests for equality of variance among all columns prior to running the associated F-test.

Although the test is more powerful than either the Tukey HSD or Scheffé tests, it is more susceptible to Type I error when running multiple simultaneous tests.

TESTS OF SIGNIFICANCE FOR MEANS (CONT'D)

Scheffé test

If the statistics option to "Correct for Type I errors in all comparisons" is enabled, MarketSight will run the Scheffé test for Contrast tests of means. MarketSight only runs the Scheffé test if the ANOVA F-test first rejects the null hypothesis that all column means are equal to one another.

The Scheffé test is a conservative test for running multiple Contrast tests of Means which controls the overall Type I error rate for all possible contrasts based on the selected Confidence Level.

Tukey-Kramer tests

MarketSight will run Tukey-Kramer test for Pairwise tests of means. MarketSight only runs Tukey-Kramer test if the ANOVA F-test first rejects the null hypothesis that all column means are equal to one another.

Tukey-Kramer test is a conservative test for running multiple Pairwise comparisons of Means. It controls the overall Type I error rate across a number of related Pairwise tests based on the selected Confidence Level.

TESTS OF SIGNIFICANCE FOR PROPORTIONS

Chi-squared

When a Row Variable displays the Column % or Count option for individual Values, MarketSight runs a Chi-squared test. This test examines whether there is a relationship between the Column Variable(s) and the Row Variable.

Chi-squared tests involve a comparison of "actual" cell counts to "expected" cell counts in a crosstab.

The expected count for each cell is derived from a Row Variable's actual counts as follows: multiply the cell's row total by its column total, then divide by the sum total of all observations.

If the actual cell counts for one or more cells differ materially from their expected counts, the Chi-squared test may produce a statistically significant result which implies there is a relationship between the Column Variable(s) and the Row Variable.

A modified version of a Chi-Squared test is run for Multiple Response Variables.

TESTS OF SIGNIFICANCE FOR PROPORTIONS (CONT'D)

Fisher's Exact

For 2x2 crosstabs with small sample sizes, the Chi-squared test may be unreliable. Therefore, MarketSight runs an alternate test, Fisher's Exact Test, if more than 20% of the cells in a 2x2 crosstab have an expected cell count less than 5, or if any cells in a 2x2 cross-tab have an expected cell count less than 1.

Fisher's Exact Test calculates the true probability of observing a particular set of actual cell counts in a 2 x 2 crosstab, assuming that row and column totals are held constant.

Fisher's Exact Test is not run for Multiple Response Variables.

z-test

MarketSight runs Z-tests for both Contrast and Pairwise tests of Column Proportions. A Z-test is used to test for a difference between two column proportions. The column proportions involved in the test are the cell counts divided by their respective column totals.

A Z-test is only run when the cells being compared have actual counts greater or equal to 5 and the column sample size minus the actual cell counts is greater than or equal to 5. If these data sufficiency conditions are not met, MarketSight runs Fisher's Exact Test instead.

A modified version of a Z-test is run for Multiple Response Variables.

THANK YOU!



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The Institute for Association and Nonprofit Research

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