



SURVEY OF PROFESSIONAL FORECASTERS

Release Date: August 14, 2020

THIRD QUARTER 2020

Higher Growth in the Current Quarter

The outlook for the U.S. economy in the current quarter looks brighter now than it did three months ago, according to 35 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The forecasters predict the economy will expand at an annual rate of 19.1 percent this quarter, much stronger than the prediction of 10.6 percent from the last survey. On an annual-average over annual-average basis, the forecasters expect real GDP to decrease 5.2 percent this year but to recover and grow at an annual rate of between 2.2 percent to 3.5 percent over each of the following three years.

A downward revision to the projection for the unemployment rate accompanies the outlook for growth. The forecasters predict unemployment will decrease from a projected 10.0 percent this quarter to 7.8 percent in the third quarter of 2021. On an annual-average basis, the panelists predict the unemployment rate will decline from a projected 9.0 percent in 2020 to 5.3 percent in 2023. The prediction for the annual-average unemployment rate in 2020 is 1.8 percentage points lower than that of the last survey.

On the employment front, the forecasters expect job gains in the current quarter at a rate of 2,068,600 per month. The employment projections for the current and the following three quarters mark downward revisions from those of the previous survey. The projections for the annual-average level of nonfarm payroll employment suggest job losses at a monthly rate of 770,000 in 2020 and job gains at a monthly rate of 269,800 in 2021. (These annual-average estimates are computed as the year-to-year change in the annual-average level of nonfarm payroll employment, converted to a monthly rate.)

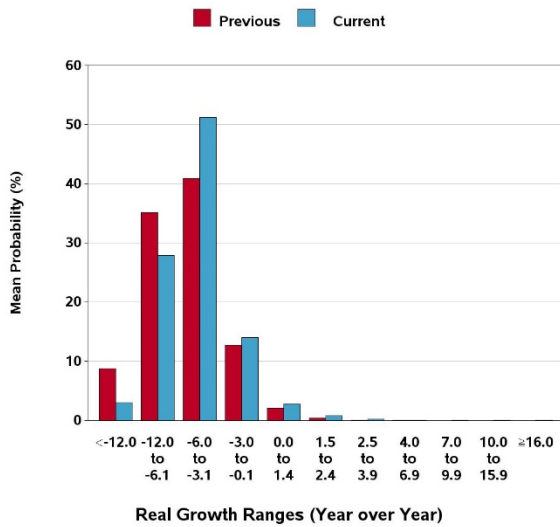
Median Forecasts for Selected Variables in the Current and Previous Surveys

	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2020:Q3	10.6	19.1	12.9	10.0	2,328.9	2,068.6
2020:Q4	6.5	5.8	11.0	9.5	900.9	398.5
2021:Q1	6.8	5.2	9.3	9.0	514.9	363.5
2021:Q2	4.1	3.8	8.8	8.4	739.1	200.5
2021:Q3	N.A.	3.6	N.A.	7.8	N.A.	286.0
Annual data (projections are based on annual-average levels):						
2020	-5.6	-5.2	10.8	9.0	-933.3	-770.0
2021	3.1	3.2	8.1	8.0	314.4	269.8
2022	4.1	3.5	6.2	6.0	N.A.	N.A.
2023	2.2	2.2	5.1	5.3	N.A.	N.A.

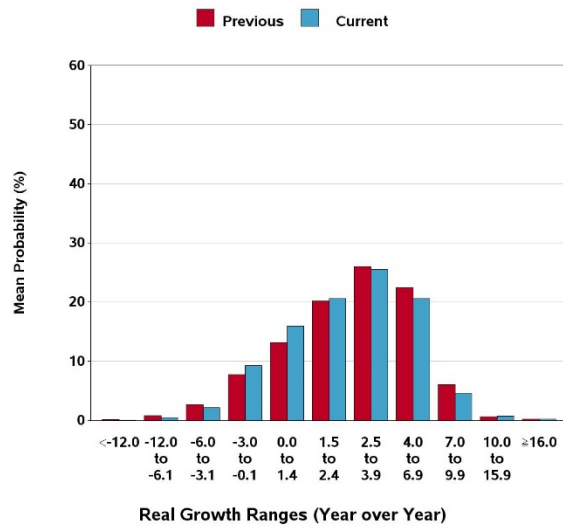
The charts below provide some insight into the degree of uncertainty the forecasters have about their projections for the rate of growth in the annual-average level of real GDP. Each chart presents the forecasters' current and previous estimates of the probability that growth will fall into each of 11 ranges.

The forecasters have revised downward their estimate of the probability that growth will fall below -6 percent in 2020. For the following three years, the charts show that the estimates of uncertainty have changed little from those of the previous survey.

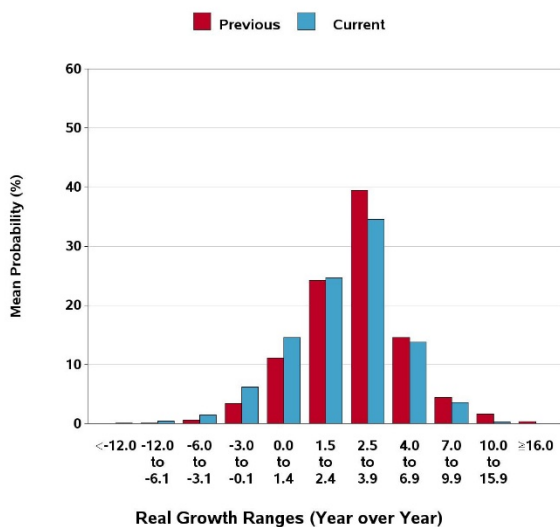
Mean Probabilities for Real GDP Growth in 2020



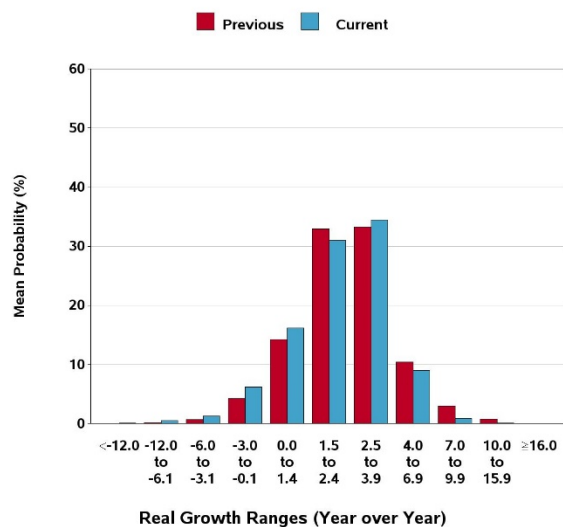
Mean Probabilities for Real GDP Growth in 2021



Mean Probabilities for Real GDP Growth in 2022



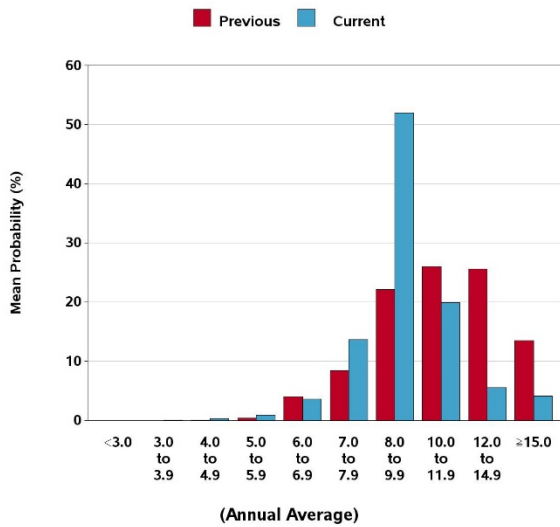
Mean Probabilities for Real GDP Growth in 2023



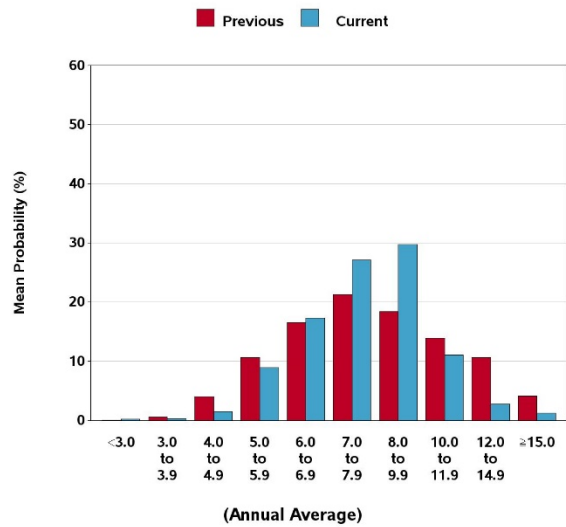
The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current and previous estimates of the probability that unemployment will fall into each of 10 ranges.

The panelists have revised upward their estimate of the probability that the unemployment rate will be in the range of 7.0 to 9.9 percent in 2020, 2021, and 2022.

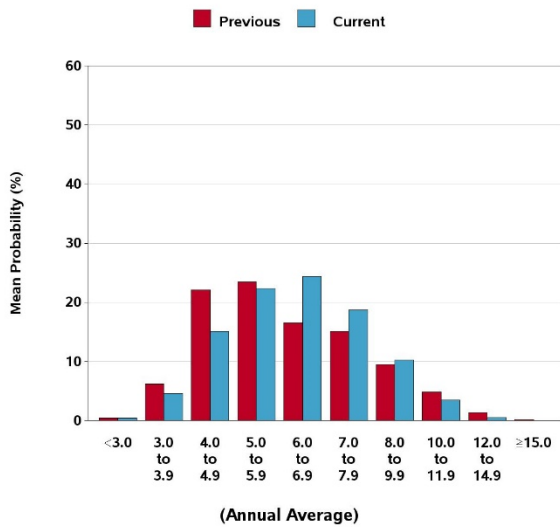
Mean Probabilities for Unemployment Rate in 2020



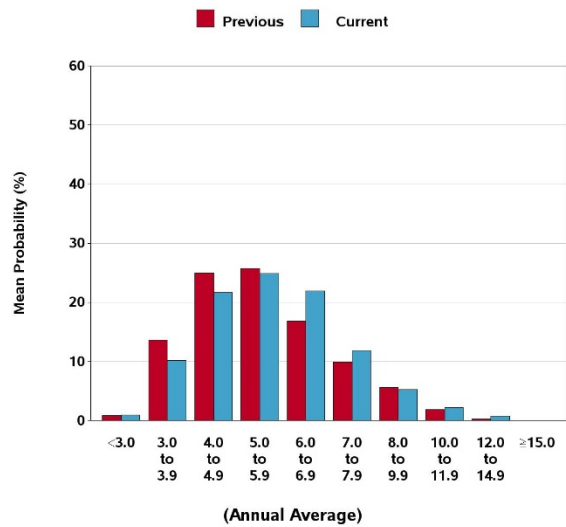
Mean Probabilities for Unemployment Rate in 2021



Mean Probabilities for Unemployment Rate in 2022



Mean Probabilities for Unemployment Rate in 2023



Higher Current-Quarter Inflation, but 10-Year Annual-Average Inflation at Historical Lows

The forecasters predict current-quarter headline CPI inflation to average 2.3 percent, up from 1.5 percent in the last survey. Headline PCE inflation for the current quarter will be 1.6 percent, up 0.3 percentage point from the previous estimate.

Projections for all CPI and PCE inflation measures at all other forecast horizons have either been revised downward or held steady, compared with those in the survey of three months ago.

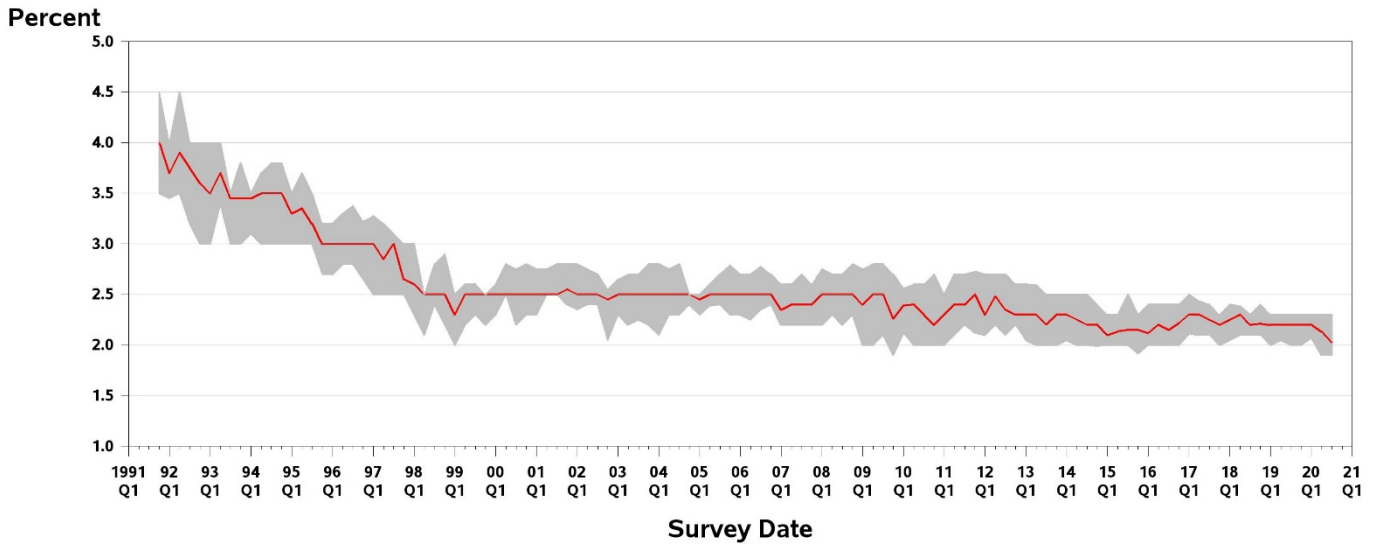
Over the next 10 years, 2020 to 2029, the forecasters expect headline CPI inflation to average 2.03 percent at an annual rate. The corresponding estimate for 10-year annual-average PCE inflation is 1.85 percent. Notably, both 10-year annual-average inflation measures stand at their historical lows for the survey.

Median Short-Run and Long-Run Projections for Inflation (Annualized Percentage Points)

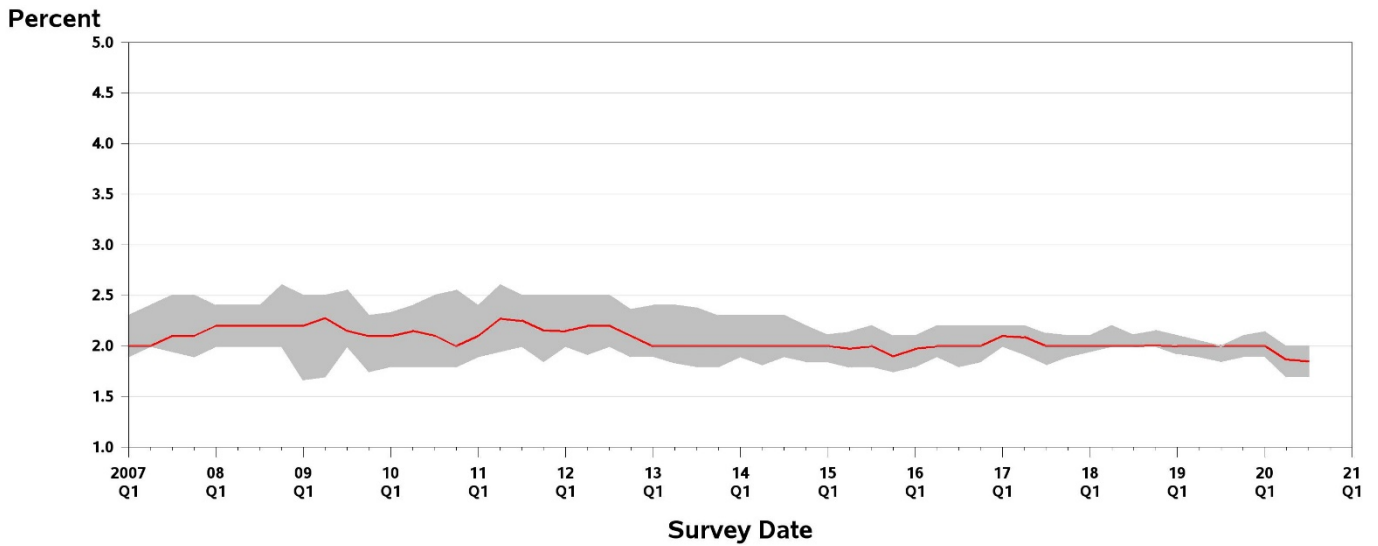
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2020:Q3	1.5	2.3	1.5	1.6	1.3	1.6	1.3	1.5
2020:Q4	1.9	1.6	1.6	1.5	1.6	1.2	1.4	1.3
2021:Q1	2.0	1.8	1.7	1.6	1.6	1.5	1.6	1.5
2021:Q2	2.0	1.6	1.8	1.8	1.6	1.5	1.7	1.5
2021:Q3	N.A.	2.1	N.A.	1.8	N.A.	1.8	N.A.	1.7
Q4/Q4 Annual Averages								
2020	0.5	0.4	1.5	0.9	0.8	0.6	1.3	0.8
2021	1.9	1.8	1.8	1.8	1.7	1.6	1.6	1.5
2022	2.2	2.0	2.0	1.9	1.8	1.7	1.8	1.7
Long-Term Annual Averages								
2020-2024	2.00	1.90	N.A.	N.A.	1.70	1.70	N.A.	N.A.
2020-2029	2.14	2.03	N.A.	N.A.	1.87	1.85	N.A.	N.A.

The charts below show the median projections (the red line) and the associated interquartile ranges (gray areas around the red line) for the projections for 10-year annual-average CPI and PCE inflation. The charts highlight lowered projections for the long-term inflation rate, compared with those of the last survey.

Projections for the 10-Year Annual-Average Rate of CPI Inflation (Median and Interquartile Range)

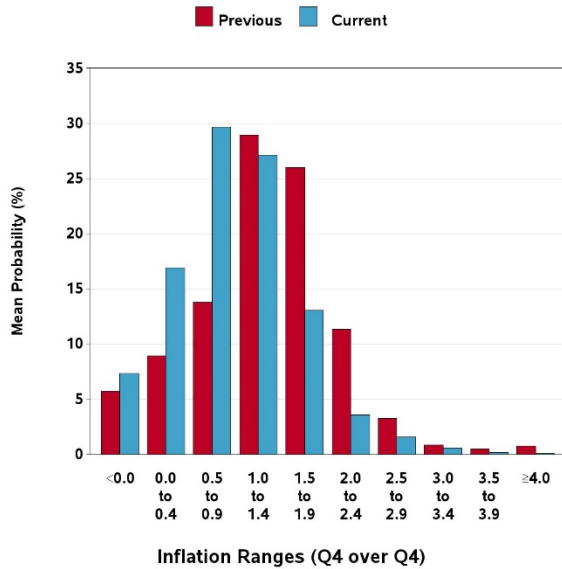


Projections for the 10-Year Annual-Average Rate of PCE Inflation (Median and Interquartile Range)

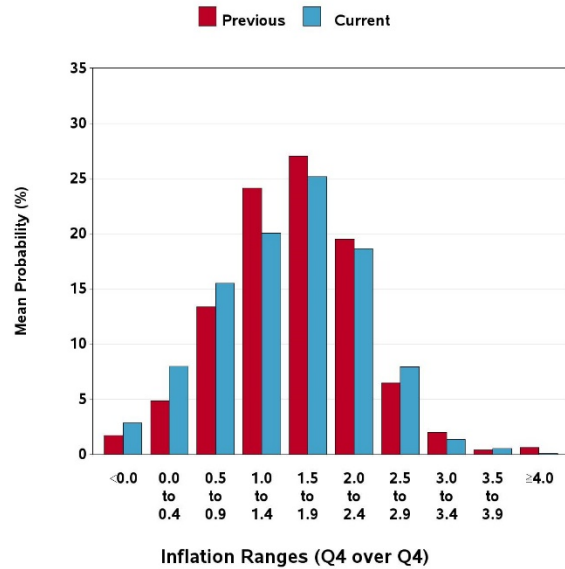


The figures below show the probabilities that the forecasters are assigning to each of 10 possible ranges for fourth-quarter over fourth-quarter core PCE inflation in 2020 and 2021. For both years, the forecasters have increased the probability that core PCE inflation will be below 1.0 percent.

Mean Probabilities for Core PCE Inflation in 2020



Mean Probabilities for Core PCE Inflation in 2021



Lower Risk of a Negative Quarter

The forecasters have revised downward the chance of a contraction in real GDP in any of the next three quarters. For the current quarter, the forecasters predict an 11.9 percent chance of negative growth, down from 43.8 percent in the survey of three months ago.

*Risk of a Negative Quarter (%)
Survey Means*

Quarterly data:	Previous	New
2020:Q3	43.8	11.9
2020:Q4	27.2	20.4
2021:Q1	22.3	19.2
2021:Q2	18.1	18.6
2021:Q3	N.A.	17.1

Natural Rate of Unemployment Estimated at 4.1 Percent

In third-quarter surveys, we ask the forecasters to provide their estimates of the natural rate of unemployment — the rate of unemployment that occurs when the economy reaches equilibrium. The forecasters peg this rate at 4.10 percent. The table below shows, for each third-quarter survey since 1996, the percentage of respondents who use the natural rate in their forecasts and, for those who use it, the median estimate and the lowest and highest estimates. Forty-eight percent of the 27 forecasters who answered the question report that they use the natural rate in their forecasts. The lowest estimate is 3.50 percent, and the highest estimate is 6.00 percent.

Median Estimates of the Natural Rate of Unemployment

Survey Date	Percentage Who Use the Natural Rate	Median Estimate (%)	Low (%)	High (%)
1996:Q3	62	5.65	5.00	6.00
1997:Q3	59	5.25	4.50	5.88
1998:Q3	45	5.30	4.50	5.80
1999:Q3	43	5.00	4.13	5.60
2000:Q3	48	4.50	4.00	5.00
2001:Q3	34	4.88	3.50	5.50
2002:Q3	50	5.10	3.80	5.50
2003:Q3	41	5.00	4.31	5.40
2004:Q3	46	5.00	4.00	5.50
2005:Q3	50	5.00	4.25	5.50
2006:Q3	53	4.95	4.00	5.50
2007:Q3	52	4.65	4.20	5.50
2008:Q3	48	5.00	4.00	5.50
2009:Q3	45	5.00	4.00	6.00
2010:Q3	50	5.78	4.50	6.80
2011:Q3	42	6.00	4.75	7.00
2012:Q3	49	6.00	4.75	7.00
2013:Q3	63	6.00	4.75	7.00
2014:Q3	65	5.50	4.50	6.70
2015:Q3	62	5.00	4.25	5.80
2016:Q3	56	4.80	4.50	5.50
2017:Q3	44	4.50	3.50	5.00
2018:Q3	34	4.30	3.80	4.60
2019:Q3	33	4.10	3.88	4.60
2020:Q3	48	4.10	3.50	6.00

Technical Notes

New Probability Ranges

Beginning with the 2020:Q2 survey, changes were made to the definition of the probability bins for real GDP growth and the unemployment rate over the next four years.

Moody's Aaa and Baa Historical Rates

The historical values of Moody's Aaa and Baa rates are proprietary and, therefore, not available in the data files on the Bank's website or on the tables that accompany the survey's complete write-up in the PDF.

The Federal Reserve Bank of Philadelphia thanks the following forecasters for their participation in recent surveys:

Lewis Alexander, Nomura Securities; **Scott Anderson**, Bank of the West (BNP Paribas Group); **Robert J. Barbera**, Johns Hopkins University Center for Financial Economics; **Peter Bernstein**, RCF Economic and Financial Consulting, Inc.; **Wayne Best** and **Michael Brown**, Visa, Inc.; **Jay Bryson**, Wells Fargo; **J. Burton**, **G. Ehrlich**, **D. Manaenkov**, **W. Song**, and **A. Thapar**, RSQE, University of Michigan; **Christine Chmura, Ph.D.**, and **Xiaobing Shuai, Ph.D.**, Chmura Economics & Analytics; **Gary Ciminero, CFA**, GLC Financial Economics; **Gregory Daco**, Oxford Economics USA, Inc.; **Rajeev Dhawan**, Georgia State University; **Bill Diviney**, ABN AMRO Bank NV; **Michael R. Englund**, Action Economics, LLC; **Michael Gapen**, Barclays Capital; **Sacha Gelfer**, Bentley University; **James Glassman**, JPMorgan Chase & Co.; **Jan Hatzius**, Goldman Sachs; **Brian Higginbotham**, U.S. Chamber of Commerce; **Peter Hooper**, Deutsche Bank Securities, Inc.; **Fred Joutz**, Benchmark Forecasts; **Sam Kahan**, Kahan Consulting Ltd. (ACT Research LLC); **N. Karp**, BBVA Research USA; **Walter Kemmsies** and **Ryan Severino**, Jones Lang LaSalle; **Jack Kleinhenz**, Kleinhenz & Associates, Inc.; **Thomas Lam**, Sim Kee Boon Institute, Singapore Management University; **John Lonski**, Moody's Capital Markets Group; **IHS Markit**; **Robert McNab**, Old Dominion University; **R. Anthony Metz**, Pareto Optimal Economics; **R. M. Monaco**, TitanRM; **Michael Moran**, Daiwa Capital Markets America; **Joel L. Naroff**, Naroff Economic Advisors; **Brendon Ogmundson**, BC Real Estate Association; **Perc Pineda, Ph.D.**, Plastics Industry Association; **Philip Rothman**, East Carolina University; **Chris Rupkey**, MUFG Union Bank; **Sean M. Snaith, Ph.D.**, University of Central Florida; **Constantine G. Soras, Ph.D.**, CGS Economic Consulting/Montclair State University; **Stephen Stanley**, Amherst Pierpont Securities; **Charles Steindel**, Ramapo College of New Jersey; **Susan M. Sterne**, Economic Analysis Associates, Inc.; **James Sweeney**, Credit Suisse; **Thomas Kevin Swift**, American Chemistry Council; **Maira Trimble**, Eaton Corporation; **Mark Zandi**, Moody's Analytics; **Ellen Zentner**, Morgan Stanley.

This is a partial list of participants. We also thank those who wish to remain anonymous.

SUMMARY TABLE
 SURVEY OF PROFESSIONAL FORECASTERS
 MAJOR MACROECONOMIC INDICATORS

	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2020	2021 (YEAR-OVER-YEAR)	2022	2023
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	19.1	5.8	5.2	3.8	3.6	-5.2	3.2	3.5	2.2
2. GDP PRICE INDEX (PERCENT CHANGE)	1.5	1.3	1.6	1.4	1.8	0.9	1.3	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	21.9	6.1	6.2	6.5	5.2	-4.3	4.7	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	19.9	3.5	3.1	1.7	2.4	-6.1	2.3	N.A.	N.A.
(AVG MONTHLY CHANGE)	2068.6	398.5	363.5	200.5	286.0	-770.0	269.8	N.A.	N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	10.0	9.5	9.0	8.4	7.8	9.0	8.0	6.0	5.3
6. 3-MONTH TREASURY BILL (PERCENT)	0.1	0.1	0.1	0.1	0.2	0.4	0.2	0.3	0.4
7. 10-YEAR TREASURY BOND (PERCENT)	0.6	0.7	0.8	0.9	0.9	0.9	0.9	1.5	1.8
	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2020	2021 (Q4-OVER-Q4)	2022	
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	2.3	1.6	1.8	1.6	2.1	0.4	1.8	2.0	
9. CORE CPI (ANNUAL RATE)	1.6	1.5	1.6	1.8	1.8	0.9	1.8	1.9	
10. PCE (ANNUAL RATE)	1.6	1.2	1.5	1.5	1.8	0.6	1.6	1.7	
11. CORE PCE (ANNUAL RATE)	1.5	1.3	1.5	1.5	1.7	0.8	1.5	1.7	

Note: The figures on each line are medians of 35 forecasters.

Source: Research Department, Federal Reserve Bank of Philadelphia.
 Survey of Professional Forecasters, Third Quarter 2020.

SURVEY OF PROFESSIONAL FORECASTERS

Third Quarter 2020

Tables

Note: Data in these tables listed as "actual" are the data that were available to the forecasters when they were sent the survey questionnaire on July 30, 2020; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before August 12, 2020.

TABLE ONE
MAJOR MACROECONOMIC INDICATORS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL			FORECAST			ACTUAL		FORECAST		
		2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	35	19409	20394	20700	21014	21347	21620	21433	20509	21473	N.A.	N.A.
2. GDP PRICE INDEX (2012=100)	33	112.86	113.28	113.65	114.10	114.50	115.00	112.32	113.30	114.79	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	19	N.A.	1739.6	1757.2	1809.6	1829.9	1837.7	1951.8	1724.7	1849.1	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	35	13.0	10.0	9.5	9.0	8.4	7.8	3.7	9.0	8.0	6.0	5.3
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	31	133702	139908	141103	142194	142795	143653	150935	141695	144933	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	26	93.7	98.6	101.0	102.3	103.9	105.3	109.5	100.3	104.5	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	30	1.04	1.20	1.22	1.26	1.29	1.30	1.30	1.23	1.29	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	34	0.14	0.13	0.13	0.15	0.15	0.15	2.06	0.38	0.15	0.26	0.44
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	21	N.A.	2.26	2.42	2.50	2.52	2.60	N.A.	2.44	2.60	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	22	N.A.	3.47	3.55	3.63	3.64	3.69	N.A.	3.69	3.66	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	34	0.69	0.62	0.72	0.78	0.88	0.93	2.14	0.86	0.94	1.50	1.79
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	33	17206	17974	18230	18464	18638	18802	19092	18107	18693	19343	19762
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	30	11796.6	12469.0	12727.2	12794.0	12873.0	12968.9	13240.3	12526.3	12934.9	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	29	2526.7	2522.9	2574.0	2624.4	2614.2	2632.5	2776.8	2587.0	2636.0	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	29	564.1	583.4	594.1	601.5	605.1	611.6	601.5	594.8	607.0	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	30	1359.5	1368.8	1374.8	1386.2	1389.9	1395.2	1277.3	1351.6	1384.8	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	30	2011.7	2007.1	2009.6	2009.9	2016.4	2023.2	2025.5	2015.8	2017.9	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	29	-315.5	-130.0	-17.8	14.3	38.4	48.6	48.5	-137.2	29.3	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	30	-780.7	-816.6	-842.2	-844.7	-841.0	-857.1	-917.6	-809.0	-851.5	N.A.	N.A.

* The historical values of Moody's Aaa and Baa rates are proprietary and therefore not available to the general public.

Source: Research Department, Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters, Third Quarter 2020.

TABLE TWO
MAJOR MACROECONOMIC INDICATORS
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	2019	2020	2021	2022
		TO Q3 2020	TO Q4 2020	TO Q1 2021	TO Q2 2021	TO Q3 2021	TO 2020	TO 2021	TO 2022	TO 2023
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	35	21.9	6.1	6.2	6.5	5.2	-4.3	4.7	N.A.	N.A.
2. GDP PRICE INDEX (2012=100)	33	1.5	1.3	1.6	1.4	1.8	0.9	1.3	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	19	34.5	4.1	12.5	4.6	1.7	-11.6	7.2	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	35	-3.0	-0.5	-0.5	-0.6	-0.6	5.3	-1.0	-2.0	-0.7
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	31 31	19.9 2068.6	3.5 398.5	3.1 363.5	1.7 200.5	2.4 286.0	-6.1 -770.0	2.3 269.8	N.A. N.A.	N.A. N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	26	22.5	10.0	5.3	6.3	5.6	-8.4	4.2	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	30	72.3	6.8	15.2	9.3	5.1	-5.1	5.0	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	34	-0.01	0.00	0.02	0.00	0.00	-1.68	-0.23	0.11	0.18
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	21	N.A.	0.17	0.08	0.02	0.08	N.A.	0.16	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	22	N.A.	0.08	0.08	0.01	0.05	N.A.	-0.03	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	34	-0.07	0.10	0.06	0.10	0.05	-1.28	0.08	0.56	0.29
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	33	19.1	5.8	5.2	3.8	3.6	-5.2	3.2	3.5	2.2
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	30	24.8	8.5	2.1	2.5	3.0	-5.4	3.3	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	29	-0.6	8.3	8.1	-1.6	2.8	-6.8	1.9	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	29	14.4	7.5	5.1	2.4	4.4	-1.1	2.0	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	30	2.8	1.8	3.3	1.1	1.5	5.8	2.5	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	30	-0.9	0.5	0.0	1.3	1.4	-0.5	0.1	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	29	185.5	112.3	32.0	24.1	10.2	-185.7	166.5	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	30	-35.9	-25.7	-2.5	3.7	-16.0	108.6	-42.5	N.A.	N.A.

* The historical values of Moody's Aaa and Baa rates are proprietary and therefore not available to the general public.

Note: Figures for unemployment rate, 3-month Treasury bill rate, Moody's Aaa corporate bond yield, Moody's Baa corporate bond yield, and 10-year Treasury bond yield are changes in these rates, in percentage points. Figures for change in private inventories and net exports are changes in billions of chain-weighted dollars. All others are percentage changes at annual rates.

Source: Research Department, Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters, Third Quarter 2020.

TABLE THREE
 MAJOR PRICE INDICATORS
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST (Q/Q)				ACTUAL	FORECAST (Q4/Q4)		
		2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL
1. CONSUMER PRICE INDEX (ANNUAL RATE)	32	-3.5	2.3	1.6	1.8	1.6	2.1	2.0	0.4	1.8	2.0
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	32	-1.6	1.6	1.5	1.6	1.8	1.8	2.3	0.9	1.8	1.9
3. PCE PRICE INDEX (ANNUAL RATE)	32	-1.9	1.6	1.2	1.5	1.5	1.8	1.5	0.6	1.6	1.7
4. CORE PCE PRICE INDEX (ANNUAL RATE)	32	-1.1	1.5	1.3	1.5	1.5	1.7	1.6	0.8	1.5	1.7

Source: Research Department, Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters, Third Quarter 2020.

TABLE FOUR
YIELD SPREADS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL			FORECAST			ACTUAL		FORECAST		
		2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL
1. TBOND MINUS TBILL (PERCENTAGE POINTS)	33	0.54	0.51	0.60	0.66	0.70	0.80	0.08	0.48	0.77	1.00	0.99
2. AAA MINUS TBOND (PERCENTAGE POINTS)	21	N.A.	1.65	1.69	1.69	1.66	1.60	N.A.	1.56	1.65	N.A.	N.A.
3. BAA MINUS TBOND (PERCENTAGE POINTS)	22	N.A.	2.78	2.71	2.76	2.74	2.68	N.A.	2.79	2.75	N.A.	N.A.
4. BAA MINUS AAA (PERCENTAGE POINTS)	21	N.A.	1.13	1.15	1.15	1.13	1.10	N.A.	1.30	1.15	N.A.	N.A.

Notes:

TBOND is the rate on 10-year Treasury bonds.
TBILL is the rate on 3-month Treasury bills.
AAA is the rate on Moody's Aaa corporate bonds.
BAA is the rate on Moody's Baa corporate bonds.

The historical values for interest rate spreads for Moody's Aaa and Baa rates are proprietary and therefore not available to the general public.

Each interest rate spread is computed as the median value of the forecasters' spreads. These median values may differ from those computed as the difference between the median values of each interest rate in the spread.

Source: Research Department, Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters, Third Quarter 2020.

TABLE FIVE
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021
	TO Q3 2020	TO Q4 2020	TO Q1 2021	TO Q2 2021	TO Q3 2021

NUMBER OF FORECASTERS

10 OR LESS	18	7	6	8	10
11 TO 20	6	11	11	9	9
21 TO 30	1	9	10	10	8
31 TO 40	3	0	1	1	1
41 TO 50	0	0	0	0	0
51 TO 60	0	0	0	0	0
61 TO 70	0	0	0	0	0
71 TO 80	0	1	0	0	0
81 TO 90	0	0	0	0	0
91 AND OVER	0	0	0	0	0
NOT REPORTING	7	7	7	7	7

MEAN AND MEDIAN

MEDIAN PROBABILITY	10.00	20.00	20.00	20.00	20.00
MEAN PROBABILITY	11.92	20.36	19.18	18.56	17.06

Note: Total number of forecasters reporting is 28.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, Third Quarter 2020.

TABLE SIX
MEAN PROBABILITIES

MEAN PROBABILITY ATTACHED TO POSSIBLE
CIVILIAN UNEMPLOYMENT RATES:
(ANNUAL AVERAGE)

	2020	2021	2022	2023
15.0 PERCENT OR MORE	4.09	1.21	0.01	0.06
12.0 TO 14.9 PERCENT	5.54	2.78	0.54	0.77
10.0 TO 11.9 PERCENT	19.90	11.05	3.53	2.23
8.0 TO 9.9 PERCENT	52.02	29.71	10.27	5.32
7.0 TO 7.9 PERCENT	13.67	27.16	18.70	11.92
6.0 TO 6.9 PERCENT	3.63	17.27	24.40	21.95
5.0 TO 5.9 PERCENT	0.85	8.89	22.39	24.88
4.0 TO 4.9 PERCENT	0.26	1.46	15.06	21.70
3.0 TO 3.9 PERCENT	0.04	0.29	4.62	10.23
LESS THAN 3.0 PERCENT	0.00	0.19	0.48	0.94

MEAN PROBABILITY ATTACHED TO POSSIBLE
PERCENT CHANGES IN REAL GDP:
(ANNUAL-AVERAGE OVER ANNUAL-AVERAGE)

	2019-2020	2020-2021	2021-2022	2022-2023
16.0 PERCENT OR MORE	0.03	0.21	0.05	0.06
10.0 TO 15.9 PERCENT	0.03	0.71	0.32	0.11
7.0 TO 9.9 PERCENT	0.03	4.57	3.61	0.90
4.0 TO 6.9 PERCENT	0.03	20.57	13.82	8.99
2.5 TO 3.9 PERCENT	0.21	25.48	34.60	34.51
1.5 TO 2.4 PERCENT	0.77	20.56	24.70	31.03
0.0 TO 1.4 PERCENT	2.72	15.94	14.63	16.17
-3.0 TO -0.1 PERCENT	13.98	9.26	6.18	6.24
-6.0 TO -3.1 PERCENT	51.26	2.15	1.51	1.32
-12.0 TO -6.1 PERCENT	27.92	0.48	0.50	0.56
LESS THAN -12.0 PERCENT	3.01	0.07	0.09	0.11

MEAN PROBABILITY ATTACHED TO POSSIBLE
PERCENT CHANGES IN GDP PRICE INDEX:
(ANNUAL-AVERAGE OVER ANNUAL-AVERAGE)

	2019-2020	2020-2021
4.0 PERCENT OR MORE	0.00	0.25
3.5 TO 3.9 PERCENT	0.04	0.18
3.0 TO 3.4 PERCENT	0.04	1.59
2.5 TO 2.9 PERCENT	0.15	6.38
2.0 TO 2.4 PERCENT	2.32	16.55
1.5 TO 1.9 PERCENT	10.68	25.69
1.0 TO 1.4 PERCENT	31.47	24.27
0.5 TO 0.9 PERCENT	34.94	15.98
0.0 TO 0.4 PERCENT	16.08	6.90
LESS THAN 0.0 PERCENT	4.28	2.20

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, Third Quarter 2020.

TABLE SEVEN
 MEAN PROBABILITY OF CORE CPI AND CORE PCE INFLATION (Q4/Q4)

MEAN PROBABILITY ATTACHED TO CORE CPI INFLATION:

	19Q4 TO 20Q4	20Q4 TO 21Q4
4.0 PERCENT OR MORE	0.07	0.13
3.5 TO 3.9 PERCENT	0.13	0.68
3.0 TO 3.4 PERCENT	0.65	2.17
2.5 TO 2.9 PERCENT	2.67	8.98
2.0 TO 2.4 PERCENT	6.56	19.23
1.5 TO 1.9 PERCENT	13.81	26.88
1.0 TO 1.4 PERCENT	21.82	21.15
0.5 TO 0.9 PERCENT	30.22	11.37
0.0 TO 0.4 PERCENT	17.31	7.60
LESS THAN 0.0 PERCENT	6.76	1.80

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	19Q4 TO 20Q4	20Q4 TO 21Q4
4.0 PERCENT OR MORE	0.07	0.05
3.5 TO 3.9 PERCENT	0.14	0.50
3.0 TO 3.4 PERCENT	0.55	1.35
2.5 TO 2.9 PERCENT	1.57	7.93
2.0 TO 2.4 PERCENT	3.58	18.63
1.5 TO 1.9 PERCENT	13.07	25.17
1.0 TO 1.4 PERCENT	27.12	20.04
0.5 TO 0.9 PERCENT	29.65	15.52
0.0 TO 0.4 PERCENT	16.92	7.98
LESS THAN 0.0 PERCENT	7.33	2.83

Source: Research Department, Federal Reserve Bank of Philadelphia.
 Survey of Professional Forecasters, Third Quarter 2020.

TABLE EIGHT
LONG-TERM (5-YEAR AND 10-YEAR) INFLATION FORECASTS

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2020-2024
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CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.37	MINIMUM	1.20
LOWER QUARTILE	1.68	LOWER QUARTILE	1.50
MEDIAN	1.90	MEDIAN	1.70
UPPER QUARTILE	2.10	UPPER QUARTILE	2.00
MAXIMUM	2.50	MAXIMUM	2.20
MEAN	1.88	MEAN	1.72
STD. DEVIATION	0.31	STD. DEVIATION	0.29
N	27	N	27
MISSING	8	MISSING	8

ANNUAL AVERAGE OVER THE FOLLOWING 5 YEARS: 2025-2029
=====

CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.50	MINIMUM	1.36
LOWER QUARTILE	2.00	LOWER QUARTILE	1.90
MEDIAN	2.20	MEDIAN	2.00
UPPER QUARTILE	2.50	UPPER QUARTILE	2.20
MAXIMUM	3.00	MAXIMUM	2.80
MEAN	2.26	MEAN	2.05
STD. DEVIATION	0.38	STD. DEVIATION	0.33
N	27	N	27
MISSING	8	MISSING	8

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2020-2029
=====

CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.46	MINIMUM	1.34
LOWER QUARTILE	1.90	LOWER QUARTILE	1.70
MEDIAN	2.03	MEDIAN	1.85
UPPER QUARTILE	2.30	UPPER QUARTILE	2.00
MAXIMUM	2.60	MAXIMUM	2.30
MEAN	2.07	MEAN	1.89
STD. DEVIATION	0.27	STD. DEVIATION	0.23
N	27	N	27
MISSING	8	MISSING	8

Note: The summary statistics for each forecast horizon are computed on a sample of panelists that may differ from one horizon to the next. The usual identity linking the 10-year horizon to the two underlying five-year horizons may not hold in the results.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, Third Quarter 2020.