



SURVEY OF PROFESSIONAL FORECASTERS

Release Date: February 12, 2021

FIRST QUARTER 2021

Stronger Economic Rebound with Lower Unemployment

The outlook for the U.S. economy over the next three years looks stronger now than it did three months ago, according to 39 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The panel predicts real GDP will grow at an annual rate of 3.2 percent this quarter, unchanged from the prediction in the last survey. However, over the remaining quarters in 2021 and the following two years, the panelists see a stronger rebound in output growth than they predicted previously. On an annual-average over annual-average basis, the forecasters expect real GDP to grow at an annual rate of 4.5 percent in 2021 and 3.7 percent in 2022. The projections for 2021 and 2022 are up from 4.0 percent and 3.0 percent, respectively, in the last survey.

A brighter outlook for the unemployment rate accompanies the outlook for growth. The forecasters predict unemployment will decrease from a projected 6.3 percent this quarter to 5.1 percent in the first quarter of 2022. On an annual-average basis, the panelists predict the unemployment rate will decline from a projected 5.9 percent in 2021 to 4.0 percent in 2024. The annual-average projections for 2021, 2022, and 2023 are 0.4 percentage point below those of the last survey.

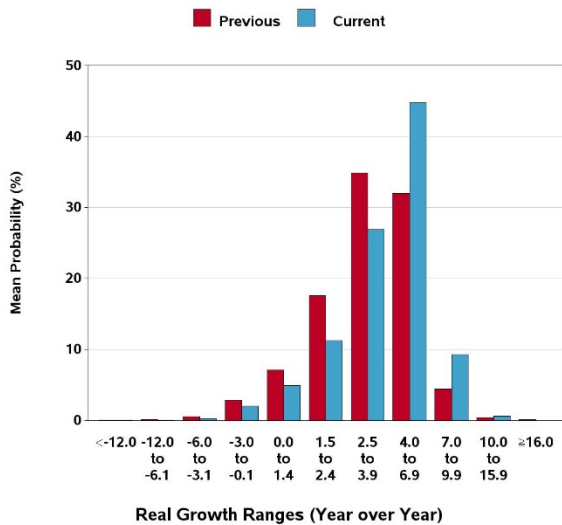
On the employment front, the forecasters have revised downward their estimates for job gains in 2021. The projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 223,400 in 2021, down from 321,600 projected three months ago. (These annual-average 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

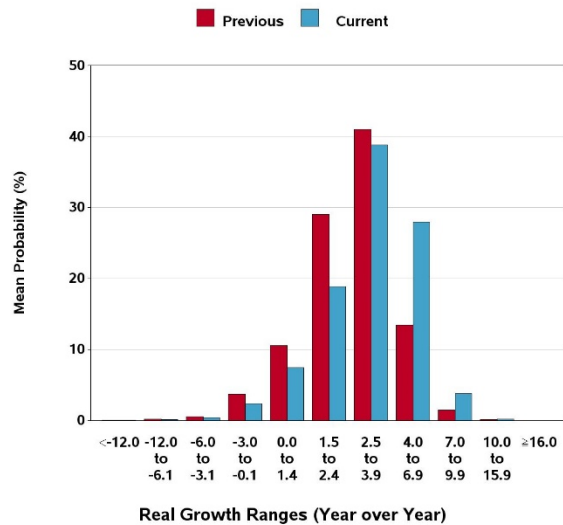
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2021:Q1	3.2	3.2	6.7	6.3	471.6	143.1
2021:Q2	3.5	5.0	6.5	6.1	423.8	396.1
2021:Q3	3.5	5.3	6.1	5.7	444.5	445.8
2021:Q4	3.3	4.0	5.8	5.4	399.5	565.8
2022:Q1	N.A.	3.7	N.A.	5.1	N.A.	441.4
Annual data (projections are based on annual-average levels):						
2021	4.0	4.5	6.3	5.9	321.6	223.4
2022	3.0	3.7	5.2	4.8	N.A.	329.8
2023	2.1	3.1	4.6	4.2	N.A.	N.A.
2024	N.A.	2.5	N.A.	4.0	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' previous and current estimates of the probability that growth will fall into each of 11 ranges. The charts show the forecasters have revised upward their estimates of the probability that real GDP will grow 4.0 percent or more in 2021 and 2022.

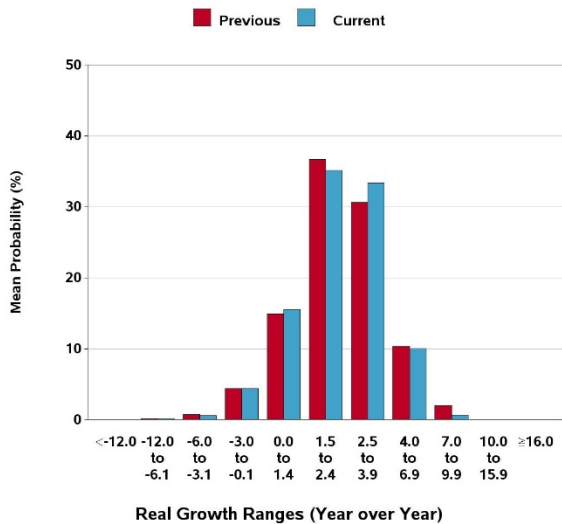
Mean Probabilities for Real GDP Growth in 2021



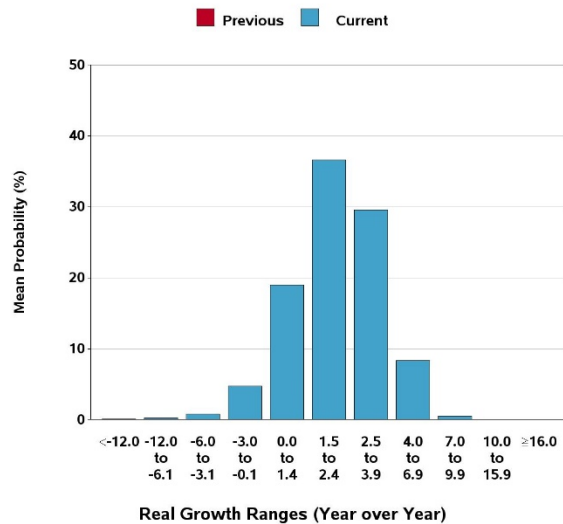
Mean Probabilities for Real GDP Growth in 2022



Mean Probabilities for Real GDP Growth in 2023

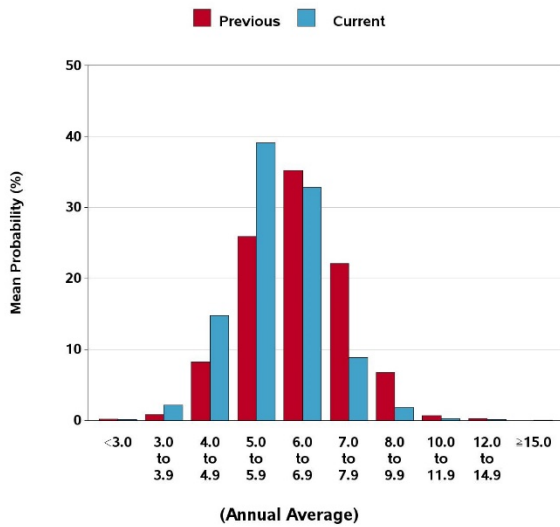


Mean Probabilities for Real GDP Growth in 2024

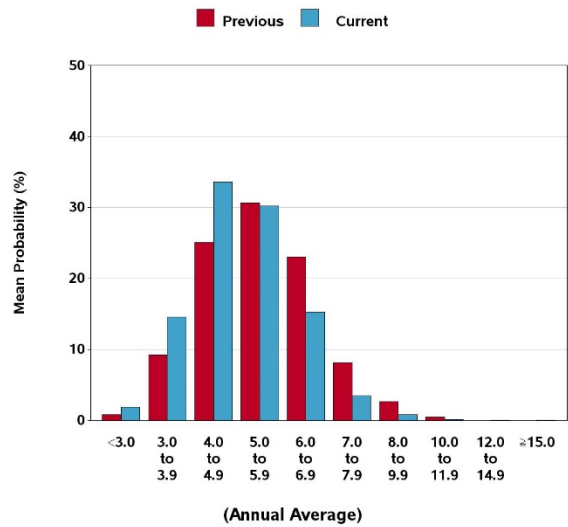


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The charts show the panelists are raising their probability estimates for an unemployment rate below 5.0 percent over each of the next three years, compared with their previous estimates.

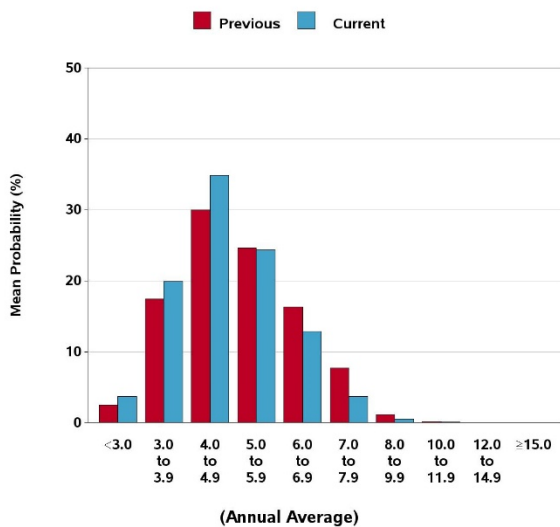
Mean Probabilities for Unemployment Rate in 2021



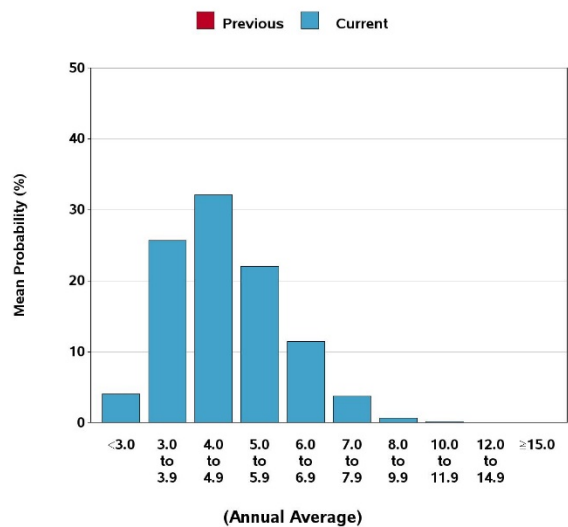
Mean Probabilities for Unemployment Rate in 2022



Mean Probabilities for Unemployment Rate in 2023



Mean Probabilities for Unemployment Rate in 2024



Forecasters Hike Their Estimates for Inflation

The forecasters expect current-quarter headline CPI inflation to average 2.5 percent, up from 2.0 percent in the last survey. Headline PCE inflation over the current quarter will be 2.4 percent, up 0.6 percentage point from the previous estimate.

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

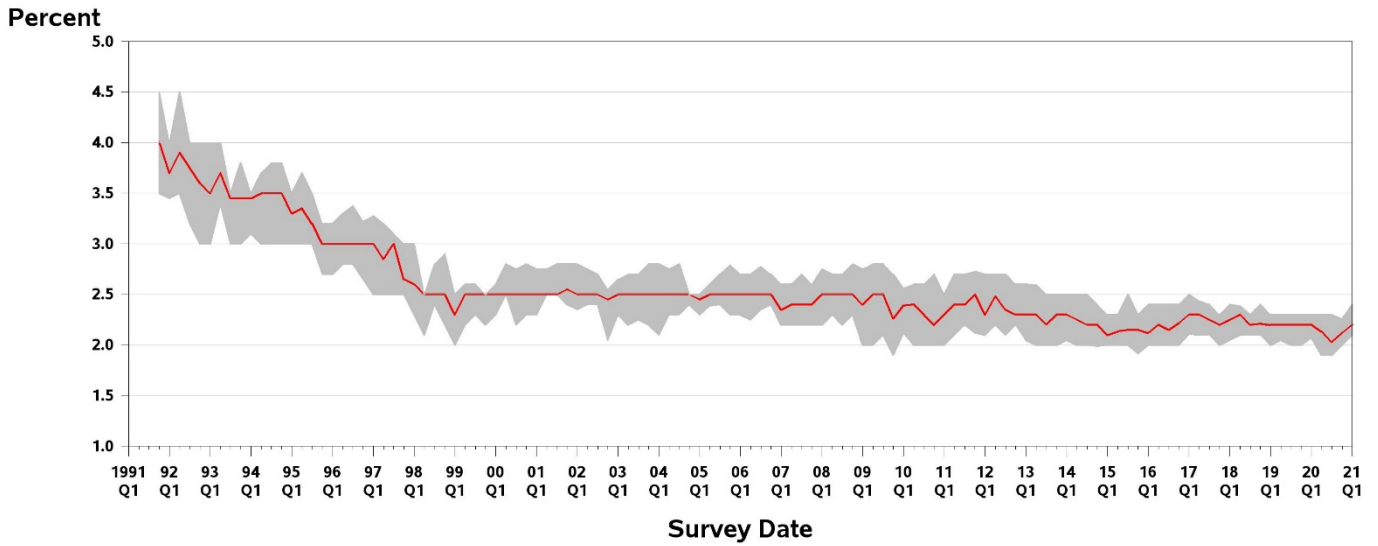
Over the next 10 years, 2021 to 2030, the forecasters expect headline CPI inflation to average 2.20 percent at an annual rate. The corresponding estimate for 10-year annual-average PCE inflation is 2.03 percent. These 10-year projections are higher than those of the previous survey.

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

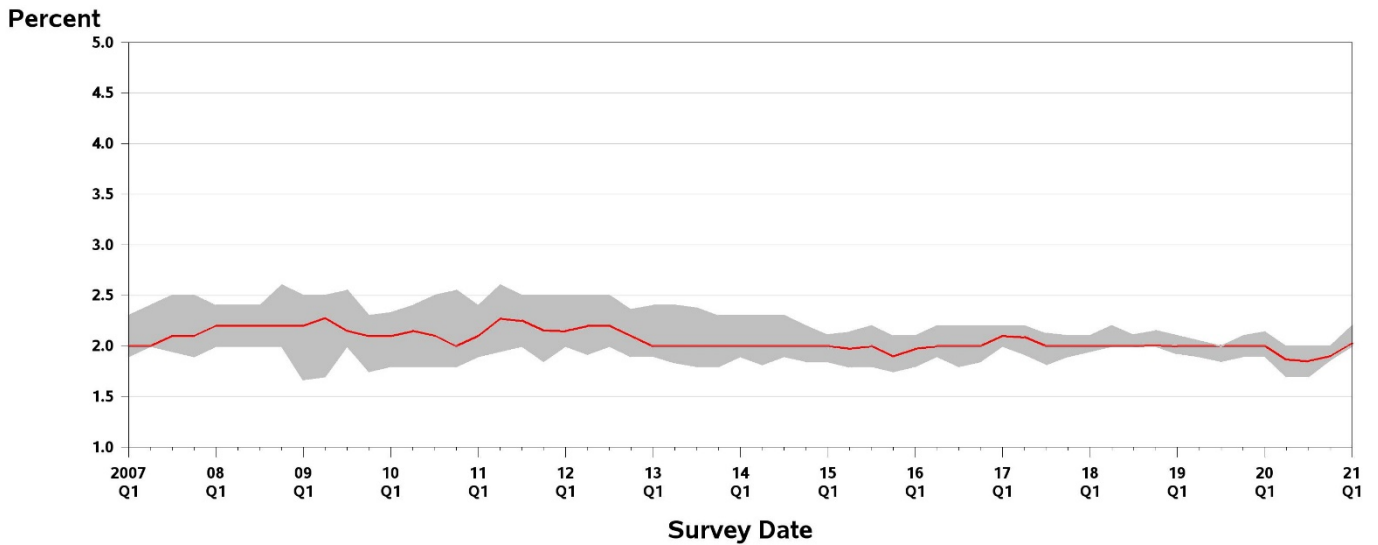
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2021:Q1	2.0	2.5	1.8	1.8	1.8	2.4	1.7	1.9
2021:Q2	2.0	2.1	2.0	2.1	1.8	1.8	1.7	1.8
2021:Q3	2.1	2.1	1.9	2.1	2.0	1.9	1.8	1.9
2021:Q4	2.2	2.2	1.9	2.1	1.9	2.0	1.7	1.9
2022:Q1	N.A.	2.2	N.A.	2.1	N.A.	2.0	N.A.	1.9
Q4/Q4 Annual Averages								
2021	2.0	2.2	1.9	2.0	1.9	2.0	1.8	1.8
2022	1.9	2.2	2.0	2.1	1.8	1.9	1.7	1.9
2023	N.A.	2.2	N.A.	2.2	N.A.	2.0	N.A.	2.0
Long-Term Annual Averages								
2020-2024	2.00	N.A.	N.A.	N.A.	1.79	N.A.	N.A.	N.A.
2021-2025	N.A.	2.20	N.A.	N.A.	N.A.	2.00	N.A.	N.A.
2020-2029	2.12	N.A.	N.A.	N.A.	1.90	N.A.	N.A.	N.A.
2021-2030	N.A.	2.20	N.A.	N.A.	N.A.	2.03	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 slightly higher 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)

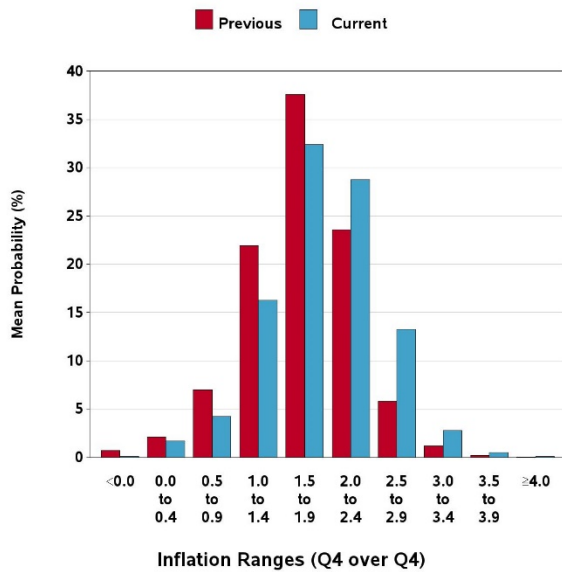


Projections for the 10-Year Annual-Average Rate of PCE Inflation (Median and Interquartile Range)

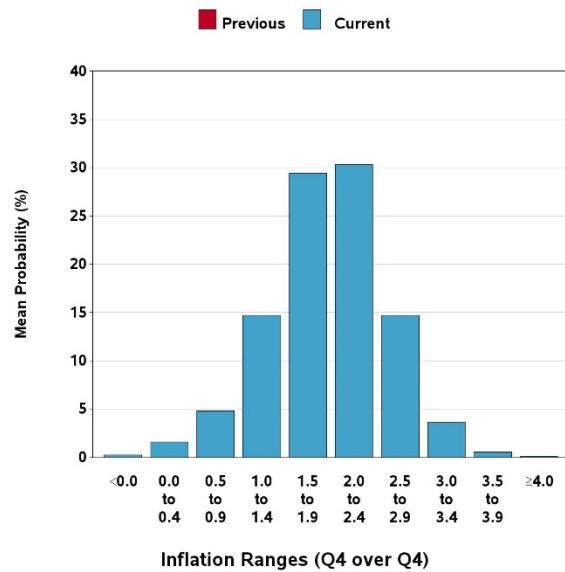


The figures below show the probabilities that the forecasters are assigning to each of 10 possible ranges for fourth-quarter over fourth-quarter core PCE inflation in 2021 and 2022. For 2021, the forecasters have increased the probability that core PCE inflation will be above 2.0 percent.

Mean Probabilities for Core PCE Inflation in 2021



Mean Probabilities for Core PCE Inflation in 2022



Lower Risk of a Negative Quarter in 2021

The forecasters have revised downward the chance of a contraction in real GDP in any of the next four quarters. For the current quarter, the forecasters predict a 19.1 percent chance of negative growth, down from 20.4 percent in the survey of three months ago. The panelists have also made downward revisions to their probability estimates for the following three quarters in 2021.

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

Quarterly data:	Previous	New
2021:Q1	20.4	19.1
2021:Q2	17.5	12.7
2021:Q3	14.4	12.3
2021:Q4	13.9	12.9
2022:Q1	N.A.	14.1

Forecasters State Their Views on House Price Growth over the Next Two Years

In a special question in this survey, panelists were asked to provide their forecasts for fourth-quarter over fourth-quarter growth in house prices, as measured by a number of alternative indices. The panelists were allowed to choose their measure from a list of indices or to write in their own index. For each index of their choosing, the panelists provided forecasts for growth in 2021 and 2022.

Fifteen panelists answered the special question. Some panelists provided projections for more than one index. The table below provides a summary of the forecasters' responses. The number of responses (N) is low for each index. The median estimates for the six house-price indices listed in the table below range from 4.7 percent to 7.9 percent in 2021 and from 3.5 percent to 5.3 percent in 2022.

*Projections for Growth in Various Indices of House Prices
Q4/Q4, Percentage Points*

Index	2021 (Q4/Q4 Percent Change)			2022 (Q4/Q4 Percent Change)		
	N	Mean	Median	N	Mean	Median
S&P CoreLogic Case-Shiller: U.S. National	9	6.6	6.8	8	4.5	4.5
S&P CoreLogic Case-Shiller: Composite 10	2	4.7	4.7	2	3.9	3.9
S&P CoreLogic Case-Shiller: Composite 20	4	7.0	7.5	4	4.9	5.0
FHFA: Purchase Only (U.S. Total)	9	5.4	5.6	8	3.8	3.5
CoreLogic: National HPI, incl. Distressed Sales (Single Family Combined)	1	5.6	5.6	1	5.3	5.3
NAR Median: Total Existing	2	7.9	7.9	2	5.1	5.1

Forecasters See Higher 10-Year Growth in Output and Productivity Than They Predicted One Year Ago

In our first-quarter surveys, the forecasters provide their 10-year annual-average projections for an expanded set of variables, including growth in output and productivity, as well as returns on financial assets.

As the table below shows, the forecasters expect real GDP to grow at an annual-average rate of 2.25 percent over the next 10 years, higher than their projection of 2.00 percent in the first-quarter survey of 2020. Ten-year annual-average productivity growth is now expected to be 1.75 percent, up from 1.40 percent previously.

Mixed revisions to the return on financial assets accompany the current outlook. The forecasters predict the S&P 500 returning an annual-average 5.00 percent over the next 10 years, unchanged from the first-quarter survey of 2020. The forecasters see the rate on 10-year Treasuries averaging 2.80 percent over the next 10 years, up slightly from 2.70 percent in last year's first-quarter survey. Three-month Treasury bills will return an annual-average 1.75 percent over the next 10 years, down from 2.02 percent previously.

Median Long-Term (10-Year) Forecasts (%)

	<i>First Quarter 2020</i>	<i>Current Survey</i>
<i>Real GDP Growth</i>	2.00	2.25
<i>Productivity Growth</i>	1.40	1.75
<i>Stock Returns (S&P 500)</i>	5.00	5.00
<i>Rate on 10-Year Treasury Bonds</i>	2.70	2.80
<i>Bill Returns (3-Month)</i>	2.02	1.75

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; **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; **G. Ehrlich**, **D. Manaenkov**, **T. Ranoso**, and **A. Thapar**, RSQE, University of Michigan; **Michael R. Englund**, Action Economics, LLC; **Sacha Gelfer**, Bentley University; **James Glassman**, JPMorgan Chase & Co.; **Jan Hatzius**, Goldman Sachs; **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.; **Rohan Kumar**, Decision Economics, Inc.; **Thomas Lam**, Sim Kee Boon Institute, Singapore Management University; **John Lonski**, Moody's Capital Markets Group; **Matthew Luzzetti**, Deutsche Bank Securities; **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, Inc.; **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

	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2021	2022 (YEAR-OVER-YEAR)	2023	2024
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	3.2	5.0	5.3	4.0	3.7	4.5	3.7	3.1	2.5
2. GDP PRICE INDEX (PERCENT CHANGE)	2.0	1.9	1.9	2.0	2.0	1.9	2.0	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	5.3	7.2	7.2	6.6	6.1	6.6	6.0	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	1.2	3.4	3.8	4.7	3.6	1.9	2.7	N.A.	N.A.
(AVG MONTHLY CHANGE)	143.1	396.1	445.8	565.8	441.4	223.4	329.8	N.A.	N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	6.3	6.1	5.7	5.4	5.1	5.9	4.8	4.2	4.0
6. 3-MONTH TREASURY BILL (PERCENT)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.5
7. 10-YEAR TREASURY BOND (PERCENT)	1.1	1.2	1.3	1.4	1.5	1.2	1.6	1.9	2.1
	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2021	2022 (Q4-OVER-Q4)	2023	
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	2.5	2.1	2.1	2.2	2.2	2.2	2.2	2.2	
9. CORE CPI (ANNUAL RATE)	1.8	2.1	2.1	2.1	2.1	2.0	2.1	2.2	
10. PCE (ANNUAL RATE)	2.4	1.8	1.9	2.0	2.0	2.0	1.9	2.0	
11. CORE PCE (ANNUAL RATE)	1.9	1.8	1.9	1.9	1.9	1.8	1.9	2.0	

Note: The figures on each line are medians of 39 forecasters.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2021.

SURVEY OF PROFESSIONAL FORECASTERS

First Quarter 2021

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 January 28, 2021; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before February 9, 2021.

TABLE ONE
MAJOR MACROECONOMIC INDICATORS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST				ACTUAL		FORECAST		
		2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL	2024 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	38	21480	21758	22142	22532	22893	23233	20933	22305	23651	N.A.	N.A.
2. GDP PRICE INDEX (2012=100)	38	114.42	114.98	115.53	116.07	116.66	117.23	113.62	115.78	118.12	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	15	N.A.	1988.6	2027.5	2087.0	2119.3	2151.1	N.A.	2055.9	2153.5	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	39	6.8	6.3	6.1	5.7	5.4	5.1	8.1	5.9	4.8	4.2	4.0
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	34	142605	143034	144223	145560	147257	148582	142261	144942	148900	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	30	104.5	106.0	107.2	108.5	109.5	110.8	102.1	107.8	111.4	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	33	1.59	1.55	1.51	1.52	1.51	1.53	1.40	1.51	1.56	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	36	0.09	0.09	0.10	0.10	0.10	0.11	0.37	0.10	0.15	0.32	0.51
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	22	N.A.	2.50	2.57	2.59	2.73	2.77	N.A.	2.57	2.82	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	21	N.A.	3.40	3.50	3.60	3.65	3.75	N.A.	3.55	3.81	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	37	0.86	1.13	1.20	1.29	1.40	1.50	0.89	1.24	1.64	1.90	2.05
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	39	18780	18929	19163	19411	19604	19783	18423	19261	19973	20592	21097
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	36	13004.7	13082.8	13266.4	13475.0	13626.7	13762.2	12727.0	13358.1	13891.6	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	35	2746.2	2791.6	2828.7	2880.3	2920.1	2958.5	2666.1	2857.4	3015.5	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	35	693.9	713.3	725.1	742.1	746.7	747.1	637.1	735.0	758.0	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	35	1333.3	1343.1	1353.6	1361.5	1367.5	1373.4	1332.8	1357.4	1386.0	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	1984.5	1988.5	1998.5	2005.5	2017.5	2023.1	2007.9	2000.2	2039.2	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	34	44.6	55.9	66.7	72.0	73.1	72.0	-81.7	67.9	74.3	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	35	-1121.1	-1135.7	-1152.0	-1156.5	-1169.3	-1172.9	-925.8	-1151.6	-1174.7	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, First Quarter 2021.

TABLE TWO
MAJOR MACROECONOMIC INDICATORS
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	2020	2021	2022	2023
		TO Q1 2021	TO Q2 2021	TO Q3 2021	TO Q4 2021	TO Q1 2022	TO 2021	TO 2022	TO 2023	TO 2024
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	38	5.3	7.2	7.2	6.6	6.1	6.6	6.0	N.A.	N.A.
2. GDP PRICE INDEX (2012=100)	38	2.0	1.9	1.9	2.0	2.0	1.9	2.0	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	15	2.3	8.1	12.3	6.3	6.1	11.7	4.7	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	39	-0.5	-0.2	-0.4	-0.3	-0.3	-2.2	-1.1	-0.5	-0.2
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	34	1.2	3.4	3.8	4.7	3.6	1.9	2.7	N.A.	N.A.
(AVG MONTHLY CHANGE)	34	143.1	396.1	445.8	565.8	441.4	223.4	329.8	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	30	5.9	4.5	5.1	3.6	4.8	5.5	3.4	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	33	-10.1	-9.0	1.1	-2.2	5.4	8.3	2.7	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	36	0.00	0.01	0.00	0.00	0.01	-0.27	0.05	0.17	0.19
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	22	N.A.	0.07	0.02	0.14	0.03	N.A.	0.25	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	21	N.A.	0.10	0.10	0.05	0.10	N.A.	0.26	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	37	0.27	0.07	0.09	0.11	0.10	0.35	0.40	0.26	0.15
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	39	3.2	5.0	5.3	4.0	3.7	4.5	3.7	3.1	2.5
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	36	2.4	5.7	6.4	4.6	4.0	5.0	4.0	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	35	6.8	5.4	7.5	5.6	5.4	7.2	5.5	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	35	11.6	6.8	9.7	2.5	0.2	15.4	3.1	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	35	3.0	3.1	2.4	1.8	1.7	1.8	2.1	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	0.8	2.0	1.4	2.4	1.1	-0.4	1.9	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	34	11.3	10.8	5.3	1.1	-1.1	149.7	6.3	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	35	-14.6	-16.2	-4.5	-12.8	-3.6	-225.8	-23.1	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, First Quarter 2021.

TABLE THREE
 MAJOR PRICE INDICATORS
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST (Q/Q)				ACTUAL				FORECAST (Q4/Q4)			
		2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL				
1. CONSUMER PRICE INDEX (ANNUAL RATE)	38	2.2	2.5	2.1	2.1	2.2	2.2	1.2	2.2	2.2	2.2				
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	37	1.8	1.8	2.1	2.1	2.1	2.1	1.6	2.0	2.1	2.2				
3. PCE PRICE INDEX (ANNUAL RATE)	37	1.5	2.4	1.8	1.9	2.0	2.0	1.2	2.0	1.9	2.0				
4. CORE PCE PRICE INDEX (ANNUAL RATE)	36	1.4	1.9	1.8	1.9	1.9	1.9	1.4	1.8	1.9	2.0				

Source: Research Department, Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters, First Quarter 2021.

TABLE FOUR
YIELD SPREADS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST				ACTUAL		FORECAST		
		2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL	2024 ANNUAL
1. TBOND MINUS TBILL (PERCENTAGE POINTS)	34	0.77	1.03	1.09	1.16	1.26	1.29	0.53	1.12	1.33	1.37	1.41
2. AAA MINUS TBOND (PERCENTAGE POINTS)	21	N.A.	1.42	1.40	1.38	1.37	1.36	N.A.	1.39	1.33	N.A.	N.A.
3. BAA MINUS TBOND (PERCENTAGE POINTS)	21	N.A.	2.30	2.30	2.30	2.30	2.35	N.A.	2.30	2.29	N.A.	N.A.
4. BAA MINUS AAA (PERCENTAGE POINTS)	21	N.A.	0.90	0.95	1.00	1.00	1.00	N.A.	0.95	1.00	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, First Quarter 2021.

TABLE FIVE
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021
	TO Q1 2021	TO Q2 2021	TO Q3 2021	TO Q4 2021	TO Q1 2022

NUMBER OF FORECASTERS

10 OR LESS	10	17	20	18	16
11 TO 20	10	11	8	10	11
21 TO 30	6	2	2	2	1
31 TO 40	4	1	1	1	2
41 TO 50	0	0	0	0	0
51 TO 60	1	0	0	0	0
61 TO 70	0	0	0	0	0
71 TO 80	0	0	0	0	0
81 TO 90	0	0	0	0	0
91 AND OVER	0	0	0	0	0
NOT REPORTING	8	8	8	8	9

MEAN AND MEDIAN

MEDIAN PROBABILITY	17.00	10.00	10.00	10.00	10.00
MEAN PROBABILITY	19.13	12.74	12.35	12.91	14.10

Note: Total number of forecasters reporting is 31.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2021.

TABLE SIX
MEAN PROBABILITIES

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

	2021	2022	2023	2024
15.0 PERCENT OR MORE	0.06	0.03	0.00	0.00
12.0 TO 14.9 PERCENT	0.13	0.06	0.04	0.05
10.0 TO 11.9 PERCENT	0.25	0.13	0.13	0.15
8.0 TO 9.9 PERCENT	1.78	0.82	0.51	0.67
7.0 TO 7.9 PERCENT	8.85	3.46	3.67	3.74
6.0 TO 6.9 PERCENT	32.80	15.24	12.87	11.49
5.0 TO 5.9 PERCENT	39.09	30.23	24.35	22.00
4.0 TO 4.9 PERCENT	14.76	33.58	34.83	32.11
3.0 TO 3.9 PERCENT	2.16	14.58	19.93	25.71
LESS THAN 3.0 PERCENT	0.13	1.88	3.67	4.08

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

	2020-2021	2021-2022	2022-2023	2023-2024
16.0 PERCENT OR MORE	0.00	0.00	0.00	0.00
10.0 TO 15.9 PERCENT	0.61	0.19	0.04	0.05
7.0 TO 9.9 PERCENT	9.26	3.81	0.66	0.55
4.0 TO 6.9 PERCENT	44.78	27.97	10.04	8.37
2.5 TO 3.9 PERCENT	26.90	38.84	33.38	29.60
1.5 TO 2.4 PERCENT	11.26	18.83	35.13	36.60
0.0 TO 1.4 PERCENT	4.88	7.46	15.52	18.96
-3.0 TO -0.1 PERCENT	1.99	2.35	4.43	4.74
-6.0 TO -3.1 PERCENT	0.23	0.41	0.60	0.82
-12.0 TO -6.1 PERCENT	0.06	0.13	0.16	0.23
LESS THAN -12.0 PERCENT	0.03	0.03	0.04	0.09

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

	2020-2021	2021-2022
4.0 PERCENT OR MORE	1.00	0.68
3.5 TO 3.9 PERCENT	1.33	1.12
3.0 TO 3.4 PERCENT	3.80	4.70
2.5 TO 2.9 PERCENT	13.50	17.91
2.0 TO 2.4 PERCENT	32.41	30.65
1.5 TO 1.9 PERCENT	29.91	27.13
1.0 TO 1.4 PERCENT	12.75	11.67
0.5 TO 0.9 PERCENT	4.02	4.46
0.0 TO 0.4 PERCENT	1.14	1.38
LESS THAN 0.0 PERCENT	0.13	0.31

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2021.

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

MEAN PROBABILITY ATTACHED TO CORE CPI INFLATION:

	20Q4 TO 21Q4	21Q4 TO 22Q4
4.0 PERCENT OR MORE	0.13	0.67
3.5 TO 3.9 PERCENT	0.66	1.16
3.0 TO 3.4 PERCENT	3.78	4.55
2.5 TO 2.9 PERCENT	16.58	17.50
2.0 TO 2.4 PERCENT	33.94	32.96
1.5 TO 1.9 PERCENT	27.65	27.18
1.0 TO 1.4 PERCENT	12.04	10.63
0.5 TO 0.9 PERCENT	3.98	3.82
0.0 TO 0.4 PERCENT	1.15	0.92
LESS THAN 0.0 PERCENT	0.08	0.60

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	20Q4 TO 21Q4	21Q4 TO 22Q4
4.0 PERCENT OR MORE	0.07	0.09
3.5 TO 3.9 PERCENT	0.50	0.54
3.0 TO 3.4 PERCENT	2.78	3.62
2.5 TO 2.9 PERCENT	13.27	14.69
2.0 TO 2.4 PERCENT	28.74	30.32
1.5 TO 1.9 PERCENT	32.40	29.42
1.0 TO 1.4 PERCENT	16.28	14.72
0.5 TO 0.9 PERCENT	4.23	4.81
0.0 TO 0.4 PERCENT	1.66	1.56
LESS THAN 0.0 PERCENT	0.07	0.22

Source: Research Department, Federal Reserve Bank of Philadelphia.
 Survey of Professional Forecasters, First Quarter 2021.

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

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2021-2025
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CPI INFLATION RATE		PCE INFLATION RATE	
MINIMUM	1.60	MINIMUM	1.50
LOWER QUARTILE	2.10	LOWER QUARTILE	1.90
MEDIAN	2.20	MEDIAN	2.00
UPPER QUARTILE	2.30	UPPER QUARTILE	2.10
MAXIMUM	2.80	MAXIMUM	2.60
MEAN	2.21	MEAN	1.99
STD. DEVIATION	0.23	STD. DEVIATION	0.21
N	29	N	29
MISSING	10	MISSING	10

ANNUAL AVERAGE OVER THE FOLLOWING 5 YEARS: 2026-2030
=====

CPI INFLATION RATE		PCE INFLATION RATE	
MINIMUM	1.92	MINIMUM	1.60
LOWER QUARTILE	2.00	LOWER QUARTILE	2.00
MEDIAN	2.23	MEDIAN	2.08
UPPER QUARTILE	2.50	UPPER QUARTILE	2.30
MAXIMUM	3.10	MAXIMUM	2.90
MEAN	2.28	MEAN	2.14
STD. DEVIATION	0.31	STD. DEVIATION	0.29
N	28	N	28
MISSING	11	MISSING	11

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2021-2030
=====

CPI INFLATION RATE		PCE INFLATION RATE	
MINIMUM	1.94	MINIMUM	1.60
LOWER QUARTILE	2.10	LOWER QUARTILE	2.00
MEDIAN	2.20	MEDIAN	2.03
UPPER QUARTILE	2.40	UPPER QUARTILE	2.20
MAXIMUM	2.70	MAXIMUM	2.51
MEAN	2.24	MEAN	2.07
STD. DEVIATION	0.21	STD. DEVIATION	0.21
N	29	N	29
MISSING	10	MISSING	10

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, First Quarter 2021.

TABLE NINE
ADDITIONAL LONG-TERM (10-YEAR) FORECASTS

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2021-2030
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REAL GDP GROWTH RATE		PRODUCTIVITY GROWTH RATE	
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MINIMUM	1.70	MINIMUM	1.00
LOWER QUARTILE	2.00	LOWER QUARTILE	1.40
MEDIAN	2.25	MEDIAN	1.75
UPPER QUARTILE	2.50	UPPER QUARTILE	1.95
MAXIMUM	2.93	MAXIMUM	3.50
MEAN	2.27	MEAN	1.73
STD. DEVIATION	0.33	STD. DEVIATION	0.54
N	29	N	20
MISSING	10	MISSING	19

STOCK RETURNS (S&P 500)		BOND RATE (10-YEAR)		BILL RETURNS (3-MONTH)	
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MINIMUM	1.76	MINIMUM	1.30	MINIMUM	0.25
LOWER QUARTILE	4.00	LOWER QUARTILE	2.18	LOWER QUARTILE	1.00
MEDIAN	5.00	MEDIAN	2.80	MEDIAN	1.75
UPPER QUARTILE	6.00	UPPER QUARTILE	3.20	UPPER QUARTILE	2.10
MAXIMUM	8.00	MAXIMUM	4.00	MAXIMUM	3.10
MEAN	5.09	MEAN	2.76	MEAN	1.64
STD. DEVIATION	1.73	STD. DEVIATION	0.72	STD. DEVIATION	0.76
N	14	N	21	N	21
MISSING	25	MISSING	18	MISSING	18

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2021.