



SURVEY OF PROFESSIONAL FORECASTERS

Release Date: March 22, 2019

FIRST QUARTER 2019

Lower Near-Term Output Growth

The U.S. economy looks weaker now in the next few quarters than it did four months ago, according to 38 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The forecasters predict real GDP will grow at an annual rate of 1.5 percent this quarter and 2.4 percent next quarter, down from the previous estimates of 2.4 percent and 2.7 percent, respectively. On an annual-average over annual-average basis, the forecasters predict real GDP to grow 2.4 percent in 2019, 2.0 percent in 2020, and 1.8 percent in 2021. The projection for 2019 is 0.3 percentage point lower than the estimate of four months ago, while the projections for 2020 and 2021 are roughly unchanged.

A slightly weaker outlook for the unemployment rate for the next few quarters accompanies the weaker outlook for near-term output growth. The forecasters predict the unemployment rate will average 3.7 percent in 2019 and 2020, 4.0 percent in 2021, and 4.2 percent in 2022.

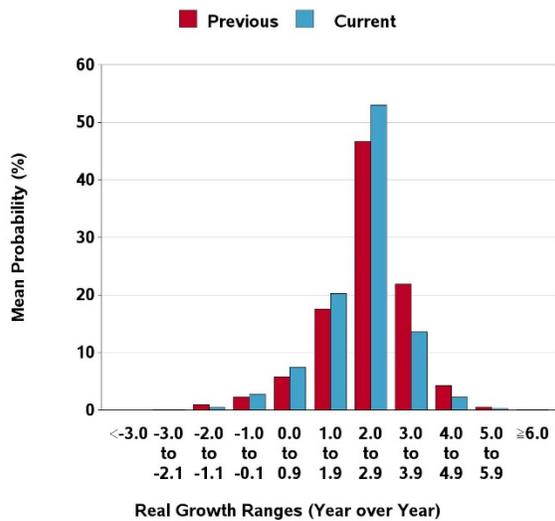
The panelists, however, see somewhat stronger growth in employment this year than they predicted previously. The projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 191,800 in 2019, up from the previous estimate of 181,900. (These annual-average 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

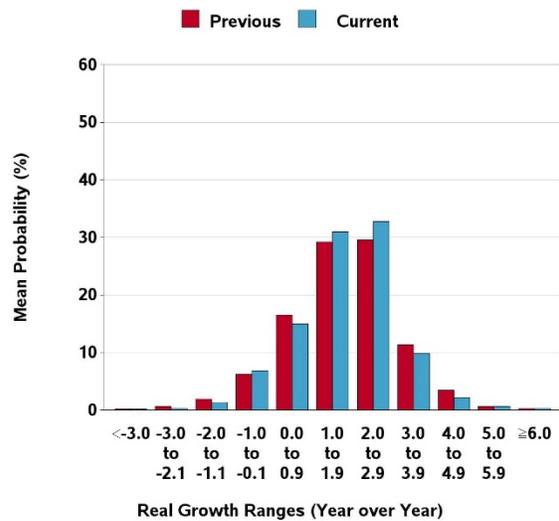
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2019:Q1	2.4	1.5	3.7	3.9	172.4	198.9
2019:Q2	2.7	2.4	3.6	3.7	168.1	156.8
2019:Q3	2.4	2.2	3.6	3.7	159.7	168.5
2019:Q4	2.2	2.2	3.6	3.7	142.9	142.1
2020:Q1	N.A.	2.1	N.A.	3.7	N.A.	143.6
Annual data (projections are based on annual-average levels):						
2019	2.7	2.4	3.7	3.7	181.9	191.8
2020	2.1	2.0	3.8	3.7	N.A.	123.2
2021	1.7	1.8	4.0	4.0	N.A.	N.A.
2022	N.A.	2.1	N.A.	4.2	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 (except the one for 2022) 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 downward their estimates of the probability that real GDP will grow above 3.0 percent in any of the next three years, especially in 2019.

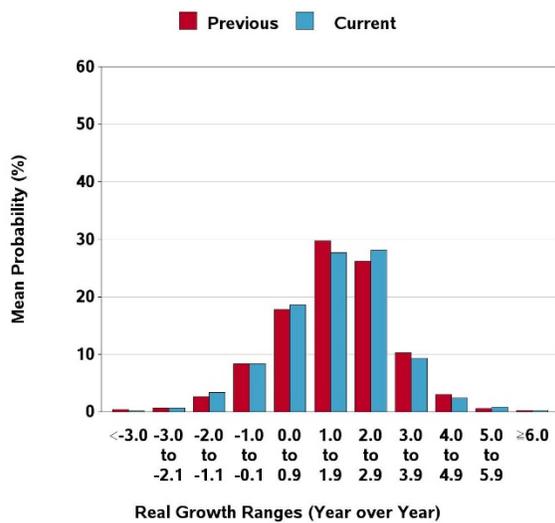
Mean Probabilities for Real GDP Growth in 2019



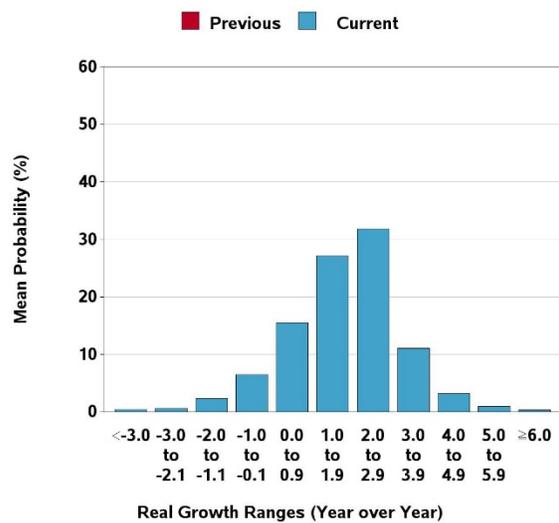
Mean Probabilities for Real GDP Growth in 2020



Mean Probabilities for Real GDP Growth in 2021

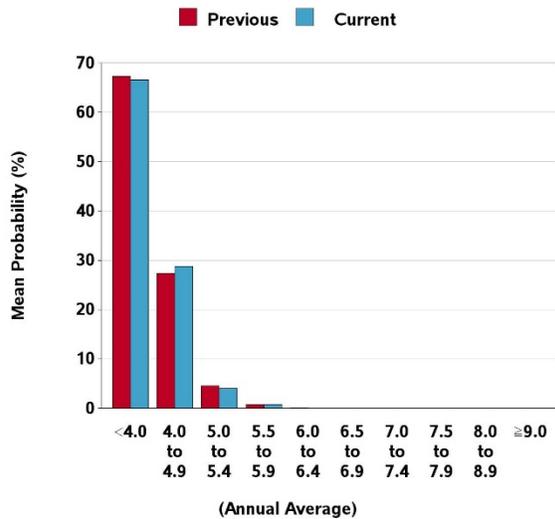


Mean Probabilities for Real GDP Growth in 2022

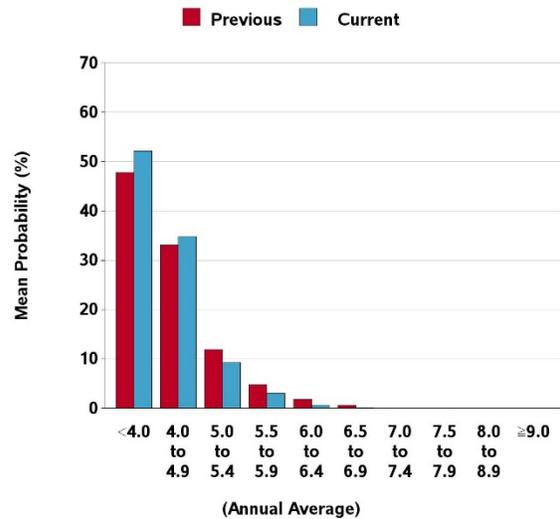


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' estimates of the probability that unemployment will fall into each of 10 ranges. The charts show that the estimates of uncertainty about the unemployment rate over the next three years have changed little from those in the previous survey.

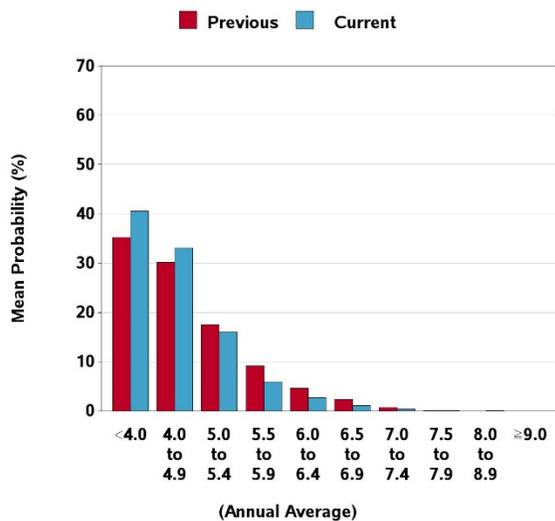
Mean Probabilities for Unemployment Rate in 2019



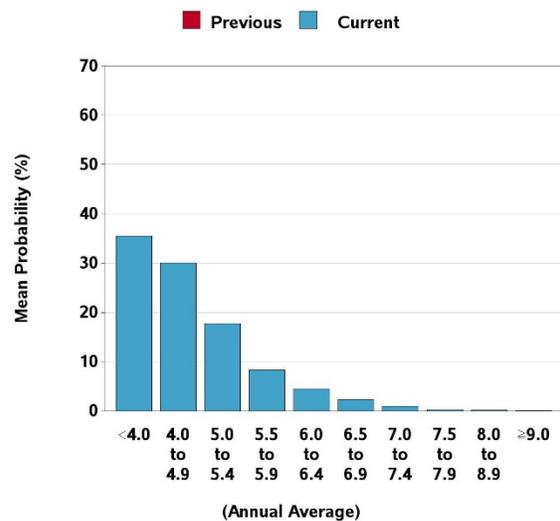
Mean Probabilities for Unemployment Rate in 2020



Mean Probabilities for Unemployment Rate in 2021



Mean Probabilities for Unemployment Rate in 2022



Downward Revisions to 2019 Headline Inflation

The forecasters expect current-quarter headline CPI inflation to average 1.1 percent, down from 2.4 percent in the last survey, and 2.0 percent in 2019, down from 2.3 percent previously. Headline PCE inflation for the current quarter will be 1.4 percent, down 0.8 percentage point from the previous estimate. For 2019, the panelists see headline PCE inflation at 1.9 percent, marking a downward revision from 2.1 percent.

The projections for core CPI and PCE inflation at all horizons are little changed from those of the previous survey. Measured on a fourth-quarter over fourth-quarter basis, core CPI inflation is expected to average 2.3 percent in each of the next three years. The projections for core PCE inflation are 2.0 percent for 2019, 2.1 percent for 2020, and 2.0 percent for 2021.

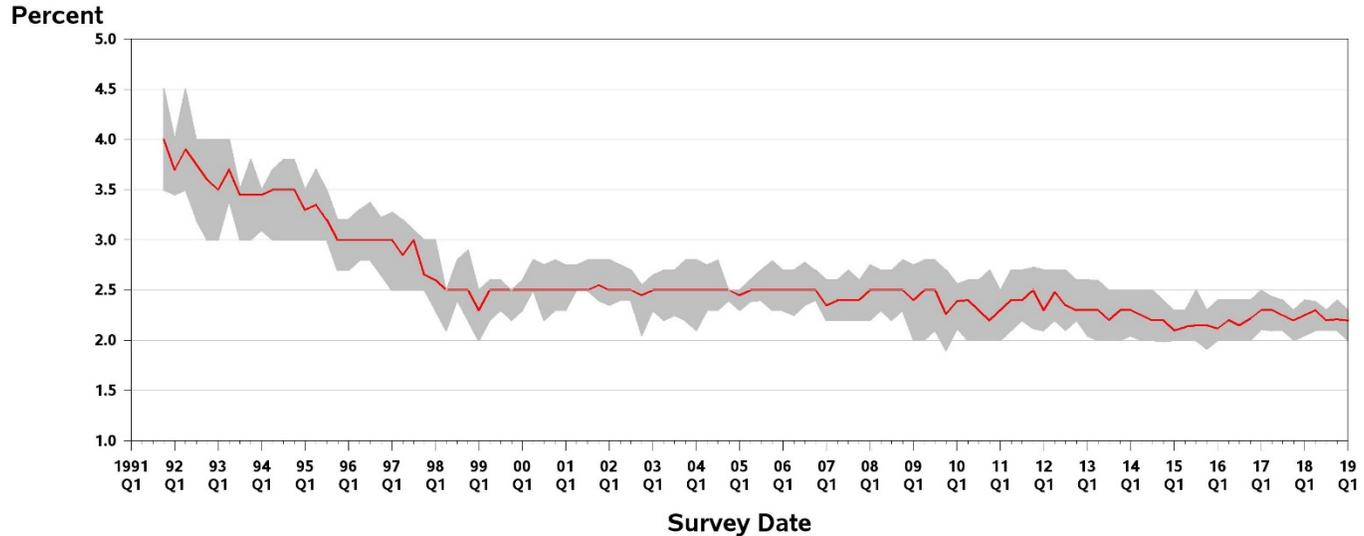
Over the next 10 years, 2019 to 2028, the forecasters expect headline CPI inflation to average 2.20 percent at an annual rate. The corresponding estimate for 10-year annual-average PCE inflation is 2.00 percent.

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

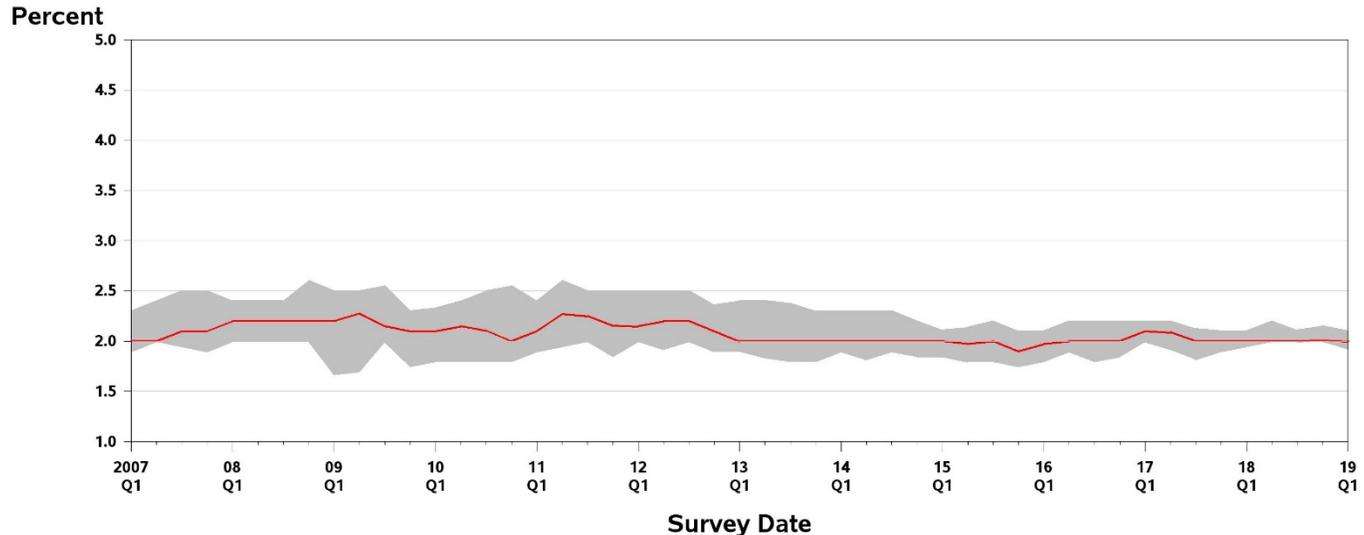
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2019:Q1	2.4	1.1	2.3	2.4	2.2	1.4	2.1	2.0
2019:Q2	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.0
2019:Q3	2.3	2.3	2.4	2.3	2.1	2.1	2.1	2.0
2019:Q4	2.4	2.2	2.4	2.3	2.1	2.1	2.1	2.0
2020:Q1	N.A.	2.3	N.A.	2.3	N.A.	2.2	N.A.	2.1
Q4/Q4 Annual Averages								
2019	2.3	2.0	2.4	2.3	2.1	1.9	2.1	2.0
2020	2.3	2.2	2.4	2.3	2.1	2.0	2.1	2.1
2021	N.A.	2.2	N.A.	2.3	N.A.	2.1	N.A.	2.0
Long-Term Annual Averages								
2018-2022	2.25	N.A.	N.A.	N.A.	2.10	N.A.	N.A.	N.A.
2019-2023	N.A.	2.13	N.A.	N.A.	N.A.	2.00	N.A.	N.A.
2018-2027	2.21	N.A.	N.A.	N.A.	2.01	N.A.	N.A.	N.A.
2019-2028	N.A.	2.20	N.A.	N.A.	N.A.	2.00	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 the nearly unchanged projections for the long-term CPI and PCE inflation, compared with those of the previous survey.

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

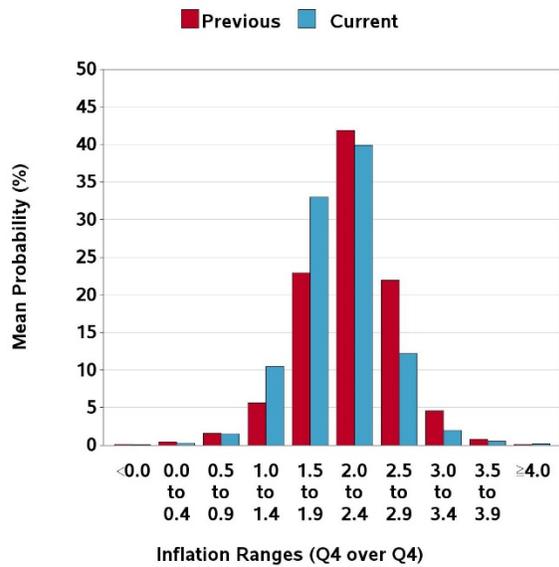


**Projections for the 10-Year Annual-Average Rate of PCE Inflation
(Median and Interquartile Range)**

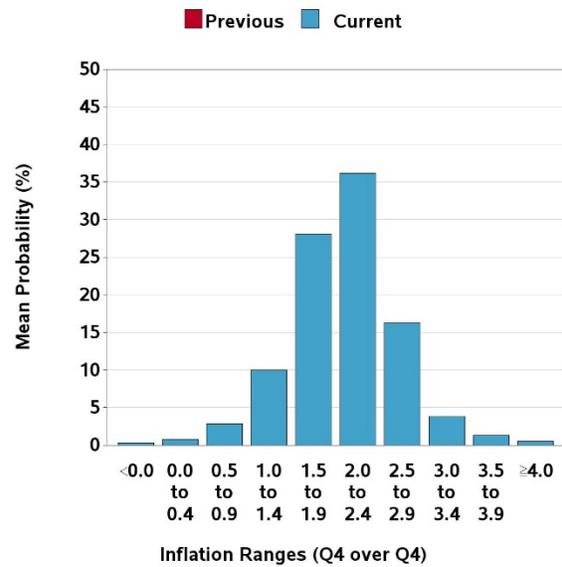


The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2019 and 2020 will fall into each of 10 ranges. For 2019, the forecasters have increased the probability that core PCE inflation will be below 2.0 percent, compared with their estimates in the survey of three months ago.

Mean Probabilities for Core PCE Inflation in 2019



Mean Probabilities for Core PCE Inflation in 2020



Lower Risk of a Negative Quarter Beyond the Current Quarter

The forecasters have revised downward the chance of a contraction in real GDP in any of the three quarters following the first quarter of 2019. For the current quarter, the forecasters predict a 16.7 percent chance of negative growth, up from 10.6 percent in the previous survey.

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

Quarterly data:	Previous	New
2019:Q1	10.6	16.7
2019:Q2	13.6	11.2
2019:Q3	19.1	14.5
2019:Q4	22.8	17.9
2020:Q1	N.A.	21.9

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 2019 and 2020.

Twenty 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 3.9 percent to 4.7 percent in 2019 and from 2.6 percent to 4.0 percent in 2020.

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

Index	2019 (Q4/Q4 Percent Change)			2020 (Q4/Q4 Percent Change)		
	N	Mean	Median	N	Mean	Median
S&P CoreLogic Case-Shiller: U.S. National	8	4.5	4.7	8	3.0	3.2
S&P CoreLogic Case-Shiller: Composite 10	5	3.8	3.9	5	3.9	4.0
S&P CoreLogic Case-Shiller: Composite 20	5	3.8	4.3	5	3.1	2.6
FHFA: Purchase Only (U.S. Total)	12	4.1	4.2	12	3.0	3.1
CoreLogic: National HPI, incl. Distressed Sales (Single Family Combined)	4	4.6	4.6	4	3.8	4.0
NAR Median: Total Existing	3	3.7	4.0	3	3.6	3.7

Forecasters See Lower 10-Year Growth in Output and Productivity and in Returns to Financial Assets

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 have cut their estimates for the annual-average rate of growth in real GDP over the next 10 years. Currently, the forecasters expect real GDP to grow at an annual-average rate of 1.99 percent over the next 10 years, down from their projection of 2.15 percent in the first-quarter survey of 2018. Ten-year annual-average productivity growth is now expected to be 1.35 percent, down from 1.50 percent previously.

Downward revisions to the return on the financial assets accompany the current outlook. The forecasters predict the S&P 500 returning an annual-average 5.35 percent over the next 10 years, down from 6.00 percent. The forecasters see the rate on 10-year Treasuries averaging 3.50 percent over the next 10 years, down from 3.70 percent in last year's first-quarter survey. Three-month Treasury bills will return an annual-average 2.75 percent over the next 10 years, unchanged from last year's first-quarter survey.

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

	<i>First Quarter 2018</i>	<i>Current Survey</i>
<i>Real GDP Growth</i>	2.15	1.99
<i>Productivity Growth</i>	1.50	1.35
<i>Stock Returns (S&P 500)</i>	6.00	5.35
<i>Rate on 10-Year Treasury Bonds</i>	3.70	3.50
<i>Bill Returns (3-Month)</i>	2.75	2.75

Technical Notes

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 release of the first quarter 2019 Survey of Professional Forecasters on March 22, 2019, is later than usual due to the partial federal government shutdown late last year through early this year.

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.; **Jay Bryson**, Wells Fargo; **Christine Chmura, Ph.D.**, and **Xiaobing Shuai, Ph.D.**, Chmura Economics & Analytics; **Gary Ciminero, CFA**, GLC Financial Economics; **Nathaniel Curtis**, Ankura Consulting Group, LLC; **Gregory Daco**, Oxford Economics USA, Inc.; **Rajeev Dhawan**, Georgia State University; **Bill Diviney**, ABN AMRO Bank NV; **Gabriel Ehrlich**, **Daniil Manaenkov**, **Owen Nie**, and **Aditi Thapar**, RSQE, University of Michigan; **Michael R. Englund**, Action Economics, LLC; **J.D. Foster**, U.S. Chamber of Commerce; **Michael Gapen**, Barclays Capital; **Sacha Gelfer**, Bentley University; **James Glassman**, JPMorgan Chase & Co.; **Jan Hatzius**, Goldman Sachs; **Keith Hembre**, Nuveen Asset Management; **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**, Jones Lang LaSalle; **Jack Kleinhenz**, Kleinhenz & Associates, Inc.; **Thomas Lam**, Sim Kee Boon Institute, Singapore Management University; **L. Douglas Lee**, Economics from Washington; **John Lonski**, Moody's Capital Markets Group; **Macroeconomic Advisers**, **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; **Mark Nielson, Ph.D.**, MacroEcon Global Advisors; **Luca Noto**, Anima Sgr; **Brendon Ogmundson**, BC Real Estate Association; **Arun Raha** and **Maira Trimble**, Eaton Corporation; **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; **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

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2019	2020 (YEAR-OVER-YEAR)	2021	2022
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	1.5	2.4	2.2	2.2	2.1	2.4	2.0	1.8	2.1
2. GDP PRICE INDEX (PERCENT CHANGE)	2.0	2.2	2.1	2.1	2.0	2.0	2.1	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	3.2	4.6	4.3	4.4	4.2	4.4	4.0	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	1.6 198.9	1.3 156.8	1.3 168.5	1.1 142.1	1.1 143.6	1.5 191.8	1.0 123.2	N.A. N.A.	N.A. N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	3.9	3.7	3.7	3.7	3.7	3.7	3.7	4.0	4.2
6. 3-MONTH TREASURY BILL (PERCENT)	2.4	2.5	2.6	2.6	2.7	2.5	2.7	2.7	2.7
7. 10-YEAR TREASURY BOND (PERCENT)	2.8	2.9	2.9	3.0	3.1	2.9	3.1	3.3	3.4
	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2019	2020 (Q4-OVER-Q4)	2021	
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	1.1	2.3	2.3	2.2	2.3	2.0	2.2	2.2	
9. CORE CPI (ANNUAL RATE)	2.4	2.2	2.3	2.3	2.3	2.3	2.3	2.3	
10. PCE (ANNUAL RATE)	1.4	2.1	2.1	2.1	2.2	1.9	2.0	2.1	
11. CORE PCE (ANNUAL RATE)	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.0	

Note: The figures on each line are medians of 38 forecasters.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2019.

SURVEY OF PROFESSIONAL FORECASTERS

First Quarter 2019

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 February 28, 2019; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before March 12, 2019.

TABLE ONE
MAJOR MACROECONOMIC INDICATORS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST				ACTUAL		FORECAST		
		2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2018 ANNUAL	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	36	20891	21055	21294	21520	21752	21976	20501	21405	22272	N.A.	N.A.
2. GDP PRICE INDEX (2012=100)	37	111.16	111.70	112.32	112.91	113.49	114.05	110.34	112.60	114.94	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	22	N.A.	2101.6	2128.6	2151.2	2154.2	2172.3	N.A.	2134.2	2195.6	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	36	3.8	3.9	3.7	3.7	3.7	3.7	3.9	3.7	3.7	4.0	4.2
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	33	150057	150654	151124	151630	152056	152487	149064	151366	152844	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	32	109.8	110.1	110.6	111.2	111.7	112.2	107.9	110.9	112.8	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	32	1.17	1.23	1.25	1.27	1.27	1.27	1.24	1.26	1.29	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	33	2.32	2.44	2.50	2.57	2.65	2.70	1.94	2.54	2.73	2.68	2.68
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	24	N.A.	3.90	4.02	4.13	4.20	4.30	N.A.	4.09	4.30	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	25	N.A.	5.04	5.17	5.30	5.35	5.49	N.A.	5.23	5.63	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	37	3.03	2.75	2.85	2.90	2.97	3.08	2.91	2.88	3.11	3.25	3.40
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	36	18785	18853	18963	19067	19173	19271	18571	19019	19394	19742	20162
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	34	13044.2	13104.5	13193.1	13273.4	13344.2	13424.6	12890.6	13229.5	13525.5	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	2768.0	2795.7	2825.0	2848.6	2875.8	2902.9	2714.8	2834.9	2919.4	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	602.3	601.5	602.0	603.6	605.3	607.7	609.6	602.5	609.5	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	1239.5	1247.0	1255.2	1262.0	1268.3	1273.6	1227.8	1258.5	1281.3	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	1955.0	1961.7	1969.3	1974.6	1979.3	1985.5	1948.9	1971.0	1992.9	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	31	97.1	75.0	62.7	66.7	65.4	59.1	45.1	66.2	57.6	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	33	-963.2	-966.7	-977.7	-989.9	-1003.1	-1014.0	-914.1	-983.3	-1020.5	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, First Quarter 2019.

TABLE TWO
MAJOR MACROECONOMIC INDICATORS
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q4 2018 TO Q1 2019	Q1 2019 TO Q2 2019	Q2 2019 TO Q3 2019	Q3 2019 TO Q4 2019	Q4 2019 TO Q1 2020	2018 TO 2019	2019 TO 2020	2020 TO 2021	2021 TO 2022
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	36	3.2	4.6	4.3	4.4	4.2	4.4	4.0	N.A.	N.A.
2. GDP PRICE INDEX (2012=100)	37	2.0	2.2	2.1	2.1	2.0	2.0	2.1	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	22	1.4	5.2	4.3	0.6	3.4	4.8	2.9	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	36	0.1	-0.2	-0.0	0.0	0.0	-0.2	0.0	0.3	0.2
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	33 33	1.6 198.9	1.3 156.8	1.3 168.5	1.1 142.1	1.1 143.6	1.5 191.8	1.0 123.2	N.A. N.A.	N.A. N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	32	1.0	2.1	2.0	2.1	1.5	2.8	1.7	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	32	25.2	4.4	6.0	1.1	0.0	1.0	2.5	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	33	0.12	0.06	0.07	0.08	0.05	0.60	0.19	-0.05	0.00
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	24	N.A.	0.12	0.11	0.07	0.11	N.A.	0.21	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	25	N.A.	0.13	0.13	0.05	0.14	N.A.	0.40	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	37	-0.28	0.10	0.05	0.07	0.11	-0.04	0.23	0.14	0.15
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	36	1.5	2.4	2.2	2.2	2.1	2.4	2.0	1.8	2.1
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	34	1.9	2.7	2.5	2.1	2.4	2.6	2.2	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	4.1	4.3	3.4	3.9	3.8	4.4	3.0	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	-0.5	0.3	1.1	1.1	1.6	-1.2	1.2	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	2.4	2.6	2.2	2.0	1.7	2.5	1.8	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	1.4	1.6	1.1	1.0	1.3	1.1	1.1	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	31	-22.1	-12.3	4.0	-1.3	-6.3	21.1	-8.7	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	33	-3.5	-10.9	-12.3	-13.2	-10.9	-69.1	-37.3	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 2019.

TABLE THREE
 MAJOR PRICE INDICATORS
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST(Q/Q)					ACTUAL	FORECAST(Q4/Q4)		
		2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2018 ANNUAL	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL
1. CONSUMER PRICE INDEX (ANNUAL RATE)	36	1.5	1.1	2.3	2.3	2.2	2.3	2.2	2.0	2.2	2.2
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	36	2.2	2.4	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.3
3. PCE PRICE INDEX (ANNUAL RATE)	35	1.5	1.4	2.1	2.1	2.1	2.2	1.9	1.9	2.0	2.1
4. CORE PCE PRICE INDEX (ANNUAL RATE)	34	1.7	2.0	2.0	2.0	2.0	2.1	1.9	2.0	2.1	2.0

Source: Research Department, Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters, First Quarter 2019.

TABLE FOUR
YIELD SPREADS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST					ACTUAL	FORECAST				
		2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2018 ANNUAL	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	
1. TBOND MINUS TBILL (PERCENTAGE POINTS)	33	0.72	0.31	0.31	0.38	0.35	0.42	0.97	0.37	0.41	0.45	0.52	
2. AAA MINUS TBOND (PERCENTAGE POINTS)	24	N.A.	1.14	1.14	1.13	1.14	1.14	N.A.	1.13	1.20	N.A.	N.A.	
3. BAA MINUS TBOND (PERCENTAGE POINTS)	25	N.A.	2.29	2.24	2.26	2.30	2.30	N.A.	2.30	2.31	N.A.	N.A.	
4. BAA MINUS AAA (PERCENTAGE POINTS)	24	N.A.	1.14	1.12	1.10	1.13	1.14	N.A.	1.11	1.13	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 2019.

TABLE FIVE
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019
	TO Q1 2019	TO Q2 2019	TO Q3 2019	TO Q4 2019	TO Q1 2020
NUMBER OF FORECASTERS					
10 OR LESS	14	20	11	7	3
11 TO 20	11	12	21	18	17
21 TO 30	5	2	2	8	11
31 TO 40	3	0	0	1	3
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	4	4	4	4	4
MEAN AND MEDIAN					
MEDIAN PROBABILITY	15.00	10.00	15.00	20.00	20.00
MEAN PROBABILITY	16.70	11.24	14.45	17.93	21.90

Note: Total number of forecasters reporting is 34.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2019.

TABLE SIX
MEAN PROBABILITIES

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

	2019	2020	2021	2022
9.0 PERCENT OR MORE	0.00	0.00	0.00	0.05
8.0 TO 8.9 PERCENT	0.00	0.00	0.06	0.20
7.5 TO 7.9 PERCENT	0.00	0.00	0.09	0.33
7.0 TO 7.4 PERCENT	0.00	0.02	0.42	0.99
6.5 TO 6.9 PERCENT	0.00	0.10	1.09	2.33
6.0 TO 6.4 PERCENT	0.04	0.57	2.68	4.49
5.5 TO 5.9 PERCENT	0.69	3.00	5.96	8.35
5.0 TO 5.4 PERCENT	3.99	9.32	16.07	17.75
4.0 TO 4.9 PERCENT	28.73	34.80	33.10	30.03
LESS THAN 4.0 PERCENT	66.56	52.18	40.55	35.48

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

	2018-2019	2019-2020	2020-2021	2021-2022
6.0 PERCENT OR MORE	0.04	0.22	0.30	0.38
5.0 TO 5.9 PERCENT	0.23	0.60	0.83	0.97
4.0 TO 4.9 PERCENT	2.25	2.17	2.45	3.16
3.0 TO 3.9 PERCENT	13.56	9.85	9.36	11.09
2.0 TO 2.9 PERCENT	53.01	32.75	28.11	31.81
1.0 TO 1.9 PERCENT	20.23	30.92	27.71	27.18
0.0 TO 0.9 PERCENT	7.40	15.00	18.59	15.51
-1.0 TO -0.1 PERCENT	2.77	6.79	8.42	6.52
-2.0 TO -1.1 PERCENT	0.40	1.27	3.34	2.33
-3.0 TO -2.1 PERCENT	0.06	0.28	0.71	0.60
LESS THAN -3.0 PERCENT	0.04	0.14	0.18	0.45

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

	2018-2019	2019-2020
4.0 PERCENT OR MORE	0.00	0.48
3.5 TO 3.9 PERCENT	0.33	0.95
3.0 TO 3.4 PERCENT	3.08	4.33
2.5 TO 2.9 PERCENT	15.48	17.52
2.0 TO 2.4 PERCENT	44.19	38.48
1.5 TO 1.9 PERCENT	27.44	25.78
1.0 TO 1.4 PERCENT	7.21	8.11
0.5 TO 0.9 PERCENT	1.80	2.93
0.0 TO 0.4 PERCENT	0.42	1.07
LESS THAN 0.0 PERCENT	0.05	0.35

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2019.

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

MEAN PROBABILITY ATTACHED TO CORE CPI INFLATION:

	18Q4 TO 19Q4	19Q4 TO 20Q4
4.0 PERCENT OR MORE	0.38	1.13
3.5 TO 3.9 PERCENT	0.93	2.09
3.0 TO 3.4 PERCENT	4.38	7.69
2.5 TO 2.9 PERCENT	19.57	21.78
2.0 TO 2.4 PERCENT	45.89	38.34
1.5 TO 1.9 PERCENT	22.77	19.98
1.0 TO 1.4 PERCENT	4.79	6.39
0.5 TO 0.9 PERCENT	0.87	1.77
0.0 TO 0.4 PERCENT	0.29	0.51
LESS THAN 0.0 PERCENT	0.14	0.33

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	18Q4 TO 19Q4	19Q4 TO 20Q4
4.0 PERCENT OR MORE	0.17	0.49
3.5 TO 3.9 PERCENT	0.53	1.30
3.0 TO 3.4 PERCENT	1.94	3.80
2.5 TO 2.9 PERCENT	12.19	16.27
2.0 TO 2.4 PERCENT	39.89	36.16
1.5 TO 1.9 PERCENT	33.03	28.09
1.0 TO 1.4 PERCENT	10.45	10.01
0.5 TO 0.9 PERCENT	1.50	2.82
0.0 TO 0.4 PERCENT	0.23	0.77
LESS THAN 0.0 PERCENT	0.07	0.29

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2019.

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

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2019-2023

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=====
CPI INFLATION RATE                PCE INFLATION RATE
-----
MINIMUM                1.83        MINIMUM                1.67
LOWER QUARTILE        2.00        LOWER QUARTILE        1.90
MEDIAN                2.13        MEDIAN                2.00
UPPER QUARTILE        2.25        UPPER QUARTILE        2.01
MAXIMUM              3.00        MAXIMUM              2.60
MEAN                 2.18        MEAN                 2.02
STD. DEVIATION        0.26        STD. DEVIATION        0.23
N                    32         N                    31
MISSING              6         MISSING              7
  
```

ANNUAL AVERAGE OVER THE FOLLOWING 5 YEARS: 2024-2028

```

=====
CPI INFLATION RATE                PCE INFLATION RATE
-----
MINIMUM                1.80        MINIMUM                1.60
LOWER QUARTILE        2.00        LOWER QUARTILE        2.00
MEDIAN                2.25        MEDIAN                2.00
UPPER QUARTILE        2.40        UPPER QUARTILE        2.20
MAXIMUM              3.40        MAXIMUM              2.90
MEAN                 2.26        MEAN                 2.09
STD. DEVIATION        0.30        STD. DEVIATION        0.23
N                    31         N                    30
MISSING              7         MISSING              8
  
```

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2019-2028

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=====
CPI INFLATION RATE                PCE INFLATION RATE
-----
MINIMUM                1.90        MINIMUM                1.80
LOWER QUARTILE        2.00        LOWER QUARTILE        1.93
MEDIAN                2.20        MEDIAN                2.00
UPPER QUARTILE        2.30        UPPER QUARTILE        2.10
MAXIMUM              3.20        MAXIMUM              2.70
MEAN                 2.22        MEAN                 2.06
STD. DEVIATION        0.27        STD. DEVIATION        0.20
N                    31         N                    30
MISSING              7         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, First Quarter 2019.

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

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2019-2028

=====

REAL GDP GROWTH RATE		PRODUCTIVITY GROWTH RATE			
-----		-----			
MINIMUM	1.50	MINIMUM	0.90		
LOWER QUARTILE	1.80	LOWER QUARTILE	1.20		
MEDIAN	1.99	MEDIAN	1.35		
UPPER QUARTILE	2.30	UPPER QUARTILE	1.60		
MAXIMUM	2.75	MAXIMUM	2.85		
MEAN	2.05	MEAN	1.49		
STD. DEVIATION	0.34	STD. DEVIATION	0.49		
N	28	N	22		
MISSING	10	MISSING	16		
STOCK RETURNS (S&P 500)		BOND RATE (10-YEAR)		BILL RETURNS (3-MONTH)	
-----		-----		-----	
MINIMUM	3.43	MINIMUM	2.50	MINIMUM	1.75
LOWER QUARTILE	4.32	LOWER QUARTILE	3.25	LOWER QUARTILE	2.40
MEDIAN	5.35	MEDIAN	3.50	MEDIAN	2.75
UPPER QUARTILE	6.00	UPPER QUARTILE	3.90	UPPER QUARTILE	3.00
MAXIMUM	10.00	MAXIMUM	4.80	MAXIMUM	3.60
MEAN	5.38	MEAN	3.57	MEAN	2.72
STD. DEVIATION	1.59	STD. DEVIATION	0.52	STD. DEVIATION	0.44
N	16	N	21	N	22
MISSING	22	MISSING	17	MISSING	16

Source: Research Department, Federal Reserve Bank of Philadelphia.
 Survey of Professional Forecasters, First Quarter 2019.