



SURVEY OF PROFESSIONAL FORECASTERS

Release Date: February 9, 2018

FIRST QUARTER 2018

Stronger Output Growth and Brighter Labor Market

The U.S. economy looks stronger now than it did three months ago, according to 36 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The forecasters predict real GDP will grow at an annual rate of 3.0 percent this quarter and 2.9 percent next quarter. On an annual-average over annual-average basis, the forecasters predict real GDP growing 2.8 percent in 2018, 2.5 percent in 2019, and 2.0 percent in 2020. The forecasts for 2018, 2019, and 2020 are higher than the estimates of three months ago. For 2021, real GDP is estimated to grow 1.7 percent.

A brighter outlook for the labor market accompanies the outlook for stronger output growth. The forecasters predict the unemployment rate will average 4.0 percent in 2018, 3.8 percent in 2019, 3.9 percent in 2020, and 4.0 percent in 2021. The projections for 2018, 2019, and 2020 are below those of the last survey, indicating a brighter outlook for unemployment.

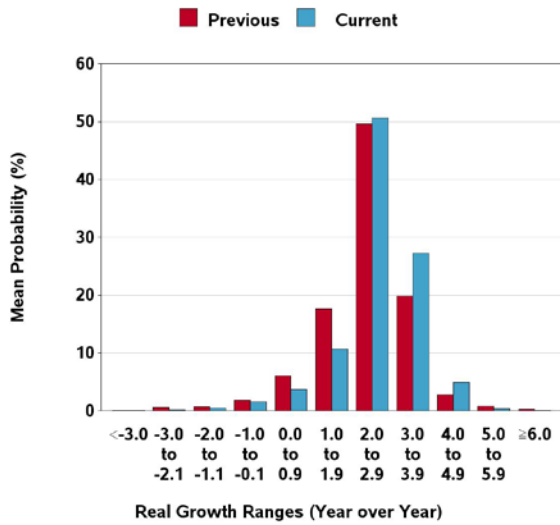
The panelists also predict an improvement in employment for 2018. The projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 175,100 in 2018, up from the previous estimate of 163,400. (These annual-average estimates are computed as the year-to-year 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

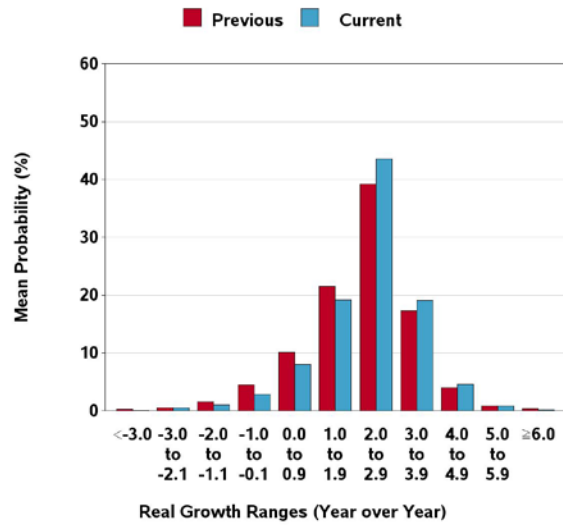
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2018:Q1	2.4	3.0	4.1	4.0	164.9	183.3
2018:Q2	2.4	2.9	4.1	4.0	167.0	171.1
2018:Q3	2.1	2.8	4.1	3.9	157.1	168.7
2018:Q4	2.3	2.5	4.0	3.8	155.6	151.8
2019:Q1	N.A.	2.4	N.A.	3.8	N.A.	172.9
Annual data (projections are based on annual-average levels):						
2018	2.5	2.8	4.1	4.0	163.4	175.1
2019	2.1	2.5	4.0	3.8	N.A.	150.3
2020	1.9	2.0	4.1	3.9	N.A.	N.A.
2021	N.A.	1.7	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 (except the one for 2021) 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 growth will be between 2.0 percent and 2.9 percent in 2018, 2019, and 2020.

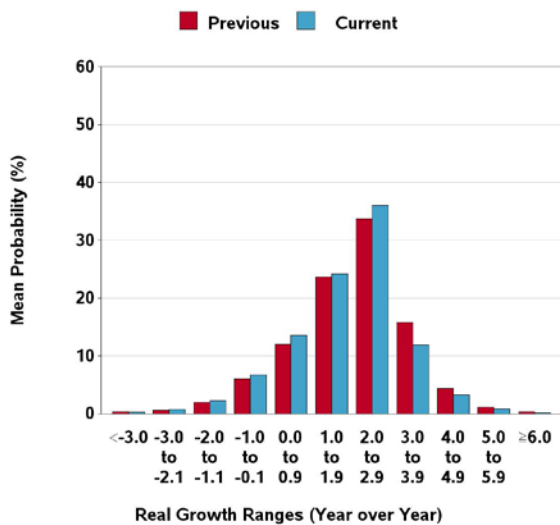
Mean Probabilities for Real GDP Growth in 2018



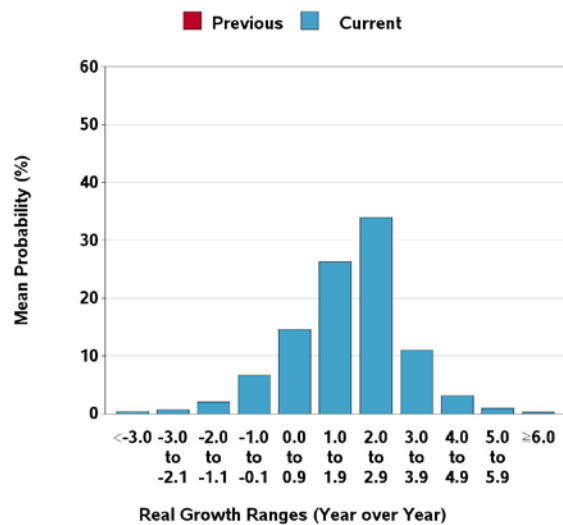
Mean Probabilities for Real GDP Growth in 2019



Mean Probabilities for Real GDP Growth in 2020

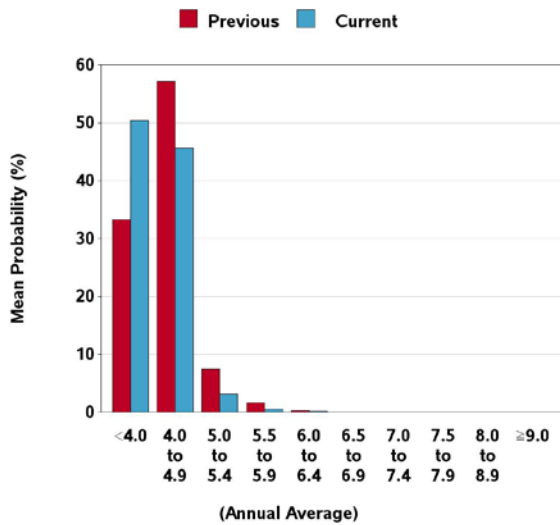


Mean Probabilities for Real GDP Growth in 2021

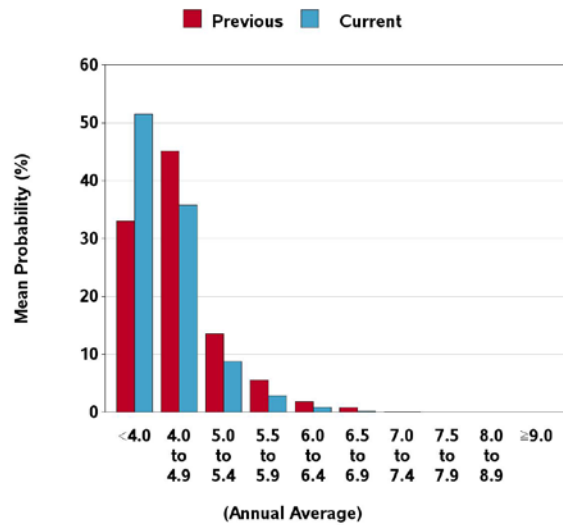


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The charts show the panelists are raising their density estimates substantially for an unemployment rate below 4.0 percent over the next three years.

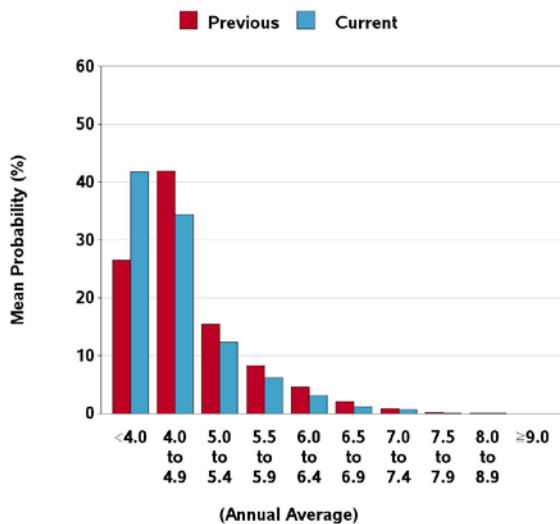
Mean Probabilities for Unemployment Rate in 2018



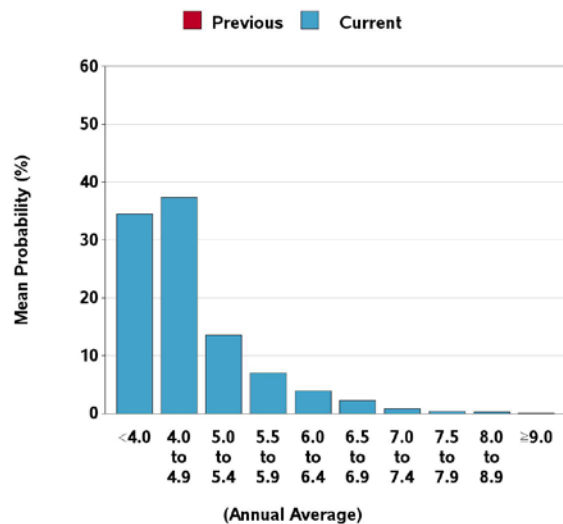
Mean Probabilities for Unemployment Rate in 2019



Mean Probabilities for Unemployment Rate in 2020



Mean Probabilities for Unemployment Rate in 2021



Higher Current Quarter Headline Inflation

The forecasters expect current-quarter headline CPI inflation to average 2.7 percent, up from 2.1 percent in the last survey. Headline PCE inflation for the current quarter will rise to 2.1 percent, up 0.4 percentage point from the previous estimate.

Notably, the forecasters see little reason to change their projections for inflation beyond the current quarter. Measured on a fourth-quarter over fourth-quarter basis, headline CPI inflation is expected to average 2.1 percent in 2018 and 2.2 percent in 2019, little changed from the last survey. The forecasters have revised slightly their projections for headline PCE inflation in 2018 to 1.9 percent, up from 1.8 percent in the survey of three months ago.

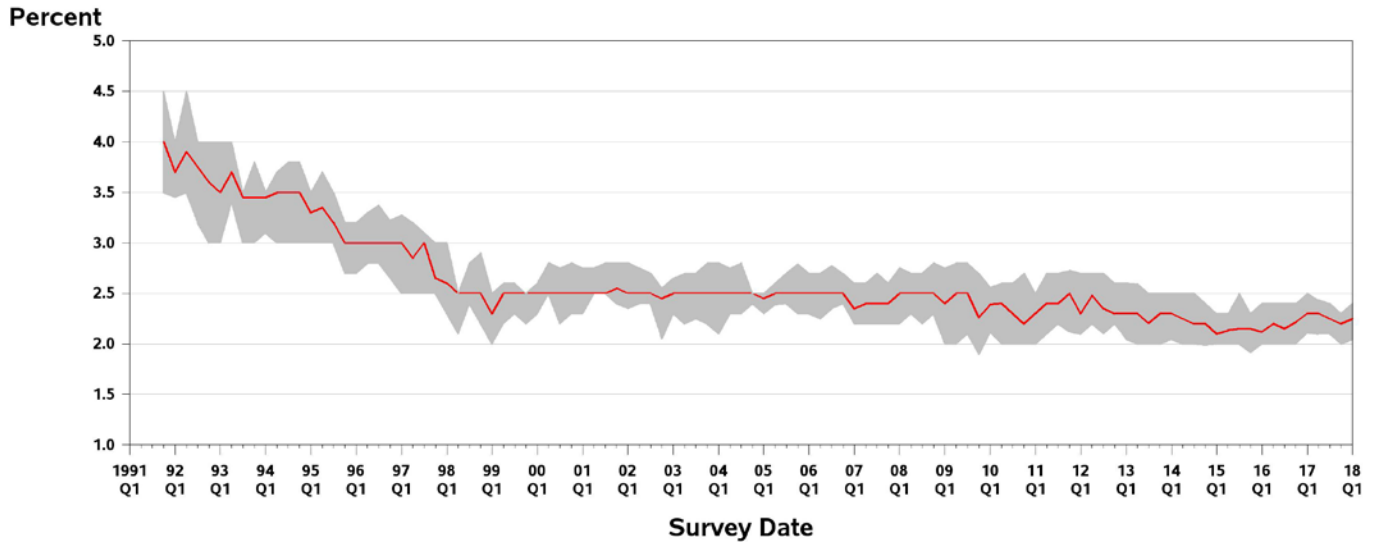
Over the next 10 years, 2018 to 2027, the forecasters expect headline CPI inflation to average 2.25 percent at an annual rate. The corresponding estimate for 10-year annual-average PCE inflation is 2.00 percent.

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

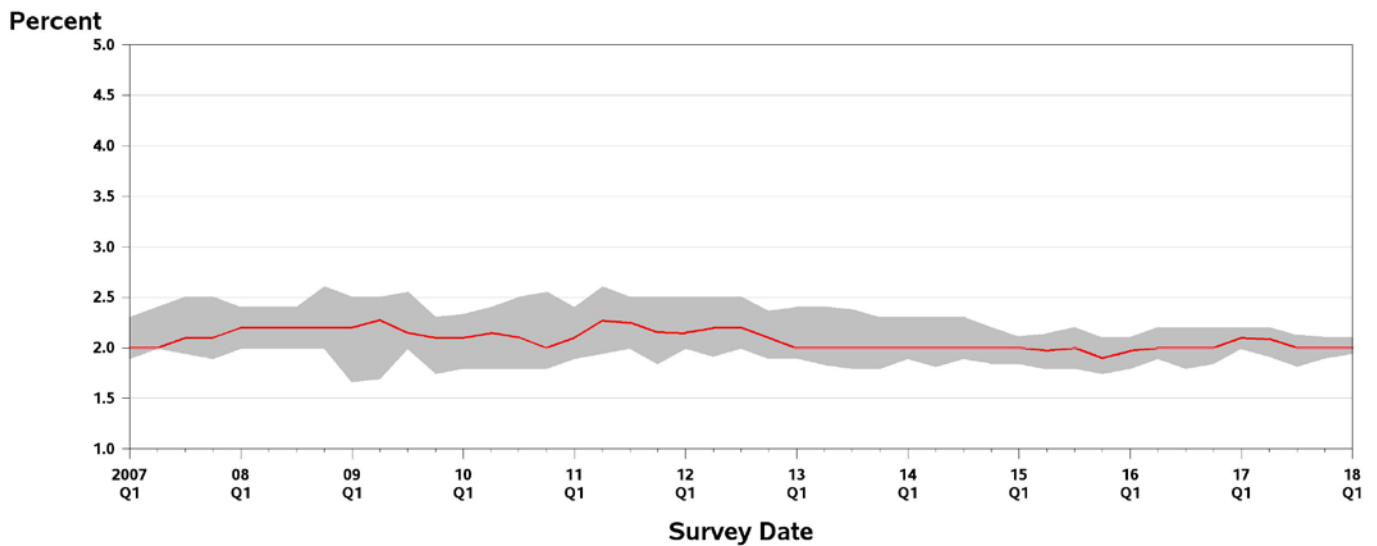
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2018:Q1	2.1	2.7	2.0	2.2	1.7	2.1	1.7	1.8
2018:Q2	2.0	2.0	2.1	2.1	1.8	1.9	1.8	1.9
2018:Q3	2.2	2.3	2.1	2.2	1.9	1.9	1.8	1.9
2018:Q4	2.1	2.2	2.2	2.2	1.9	1.9	1.9	1.9
2019:Q1	N.A.	2.3	N.A.	2.3	N.A.	2.0	N.A.	2.0
Q4/Q4 Annual Averages								
2018	2.1	2.1	2.1	2.2	1.8	1.9	1.8	1.9
2019	2.3	2.2	2.2	2.3	2.0	2.0	2.0	2.0
2020	N.A.	2.3	N.A.	2.4	N.A.	2.0	N.A.	2.0
Long-Term Annual Averages								
2017-2021	2.20	N.A.	N.A.	N.A.	1.90	N.A.	N.A.	N.A.
2018-2022	N.A.	2.20	N.A.	N.A.	N.A.	2.00	N.A.	N.A.
2017-2026	2.20	N.A.	N.A.	N.A.	2.00	N.A.	N.A.	N.A.
2018-2027	N.A.	2.25	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 a marginally higher level of the long-term projection for CPI inflation and an unchanged long-term projection for PCE inflation.

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

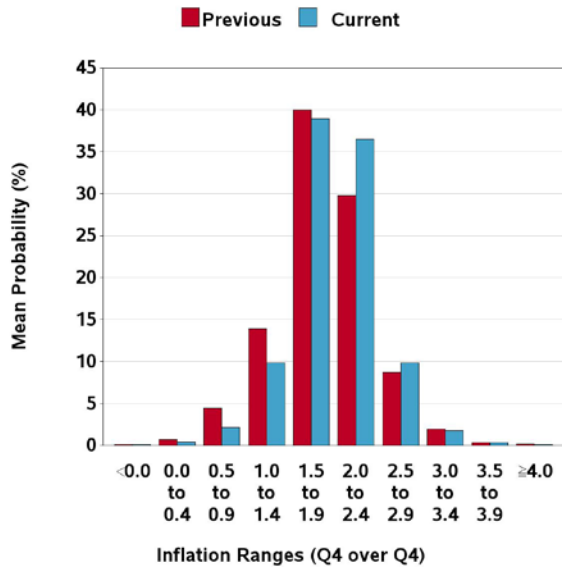


Projections for the 10-Year Annual-Average Rate of PCE Inflation (Median and Interquartile Range)

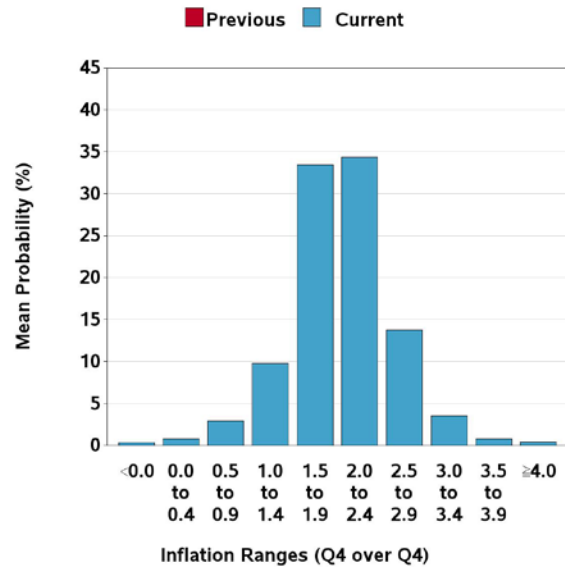


The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2018 and 2019 will fall into each of 10 ranges. For 2018, the forecasters have increased the probability that core PCE inflation will be above 2.0 percent, compared with their estimates in the survey of three months ago.

Mean Probabilities for Core PCE Inflation in 2018



Mean Probabilities for Core PCE Inflation in 2019



Lower Risk of a Negative Quarter in 2018

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 5.8 percent chance of negative growth, down from 10.4 percent in the survey of three months ago. The panelists have also made downward revisions to their probability estimates for the next three quarters in 2018.

Risk of a Negative Quarter (%)
Survey Means

Quarterly data:	Previous	New
2018:Q1	10.4	5.8
2018:Q2	12.6	9.1
2018:Q3	14.7	11.4
2018:Q4	17.0	13.6
2019:Q1	N.A.	16.8

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 2018 and 2019.

Sixteen 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 seven house-price indices listed in the table below range from 3.4 percent to 5.8 percent in 2018 and from 3.1 percent to 5.1 percent in 2019.

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

Index	2018 (Q4/Q4 Percent Change)			2019 (Q4/Q4 Percent Change)		
	N	Mean	Median	N	Mean	Median
S&P CoreLogic Case-Shiller: U.S. National	6	4.4	4.9	6	4.3	4.2
S&P CoreLogic Case-Shiller: Composite 10	1	5.2	5.2	1	5.1	5.1
S&P CoreLogic Case-Shiller: Composite 20	5	5.0	5.0	5	4.0	4.2
FHFA: U.S. Total	4	4.0	3.7	4	3.3	3.1
FHFA: Purchase Only	6	5.1	5.8	6	3.6	4.3
CoreLogic: National HPI, incl. Distressed Sales (Single Family Combined)	2	5.1	5.1	2	5.0	5.0
NAR Median: Total Existing	2	3.4	3.4	2	3.2	3.2

Forecasters See Lower Long-Run Growth in Output and Productivity

In our first-quarter surveys, the forecasters provide their long-run 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 2.15 percent over the next 10 years, down from their projection of 2.45 percent in the first-quarter survey of 2017. Ten-year annual-average productivity growth is now expected to be 1.50 percent, down from 1.60 percent.

The forecasters see the S&P 500 returning an annual-average 6.00 percent over the next 10 years, unchanged from last year's first-quarter survey. The forecasters expect the rate on 10-year Treasuries to average 3.70 percent over the next 10 years, down from 3.86 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, up from 2.50 percent.

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

	<i>First Quarter 2017</i>	<i>Current Survey</i>
<i>Real GDP Growth</i>	2.45	2.15
<i>Productivity Growth</i>	1.60	1.50
<i>Stock Returns (S&P 500)</i>	6.00	6.00
<i>Rate on 10-Year Treasury Bonds</i>	3.86	3.70
<i>Bill Returns (3-Month)</i>	2.50	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 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.; **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; **Gabriel Ehrlich**, **Daniil Manaenkov**, **Ben Meiselman**, **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.; **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**, Independent Economist; **L. Douglas Lee**, Economics from Washington; **John Lonski**, Moody's Capital Markets Group; **Macroeconomic Advisers**, **IHS Markit**; **R. Anthony Metz**, Pareto Optimal Economics; **Michael Moran**, Daiwa Capital Markets America; **Joel L. Naroff**, Naroff Economic Advisors; **Michael Neal**, National Association of Home Builders; **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; **John Silvia**, Wells Fargo; **Sean M. Snaith, Ph.D.**, University of Central Florida; **Constantine G. Soras, Ph.D.**, CGS Economic Consulting; **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; **Richard Yamarone**, Bloomberg, LP; **Mark Zandi**, Moody's Analytics.

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

	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2018	2019 (YEAR-OVER-YEAR)	2020	2021
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	3.0	2.9	2.8	2.5	2.4	2.8	2.5	2.0	1.7
2. GDP PRICE INDEX (PERCENT CHANGE)	2.0	2.0	2.0	2.0	2.1	2.0	2.1	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	4.9	4.8	4.8	4.6	4.6	4.9	4.7	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	1.5	1.4	1.4	1.2	1.4	1.4	1.2	N.A.	N.A.
(AVG MONTHLY CHANGE)	183.3	171.1	168.7	151.8	172.9	175.1	150.3	N.A.	N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	4.0	4.0	3.9	3.8	3.8	4.0	3.8	3.9	4.0
6. 3-MONTH TREASURY BILL (PERCENT)	1.5	1.7	1.9	2.0	2.2	1.8	2.4	2.7	2.9
7. 10-YEAR TREASURY BOND (PERCENT)	2.7	2.9	3.0	3.1	3.2	2.9	3.4	3.5	3.7
	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2018	2019 (Q4-OVER-Q4)	2020	
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	2.7	2.0	2.3	2.2	2.3	2.1	2.2	2.3	
9. CORE CPI (ANNUAL RATE)	2.2	2.1	2.2	2.2	2.3	2.2	2.3	2.4	
10. PCE (ANNUAL RATE)	2.1	1.9	1.9	1.9	2.0	1.9	2.0	2.0	
11. CORE PCE (ANNUAL RATE)	1.8	1.9	1.9	1.9	2.0	1.9	2.0	2.0	

Note: The figures on each line are medians of 36 forecasters.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2018.

SURVEY OF PROFESSIONAL FORECASTERS

First Quarter 2018

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 26, 2018; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before February 6, 2018.

TABLE ONE
MAJOR MACROECONOMIC INDICATORS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST					ACTUAL	FORECAST				
		2017 Q4	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2017 ANNUAL	2018 ANNUAL	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL	
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	34	19739	19975	20212	20453	20683	20918	19387	20339	21295	N.A.	N.A.	
2. GDP PRICE INDEX (2009=100)	34	114.29	114.86	115.44	116.01	116.59	117.20	113.43	115.73	118.16	N.A.	N.A.	
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	12	N.A.	1806.1	1880.8	1907.0	1934.5	1943.3	N.A.	1889.2	1951.7	N.A.	N.A.	
4. UNEMPLOYMENT RATE (PERCENT)	34	4.1	4.0	4.0	3.9	3.8	3.8	4.4	4.0	3.8	3.9	4.0	
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	29	147197	147747	148260	148767	149222	149740	146445	148546	150350	N.A.	N.A.	
6. INDUSTRIAL PRODUCTION (2012=100)	30	106.9	107.8	108.5	109.2	110.0	110.7	105.1	108.8	111.6	N.A.	N.A.	
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	31	1.25	1.27	1.28	1.28	1.29	1.29	1.21	1.28	1.32	N.A.	N.A.	
8. 3-MONTH TREASURY BILL RATE (PERCENT)	32	1.21	1.46	1.70	1.85	2.04	2.18	0.93	1.77	2.39	2.73	2.90	
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	22	N.A.	3.89	4.04	4.20	4.30	4.45	N.A.	4.11	4.56	N.A.	N.A.	
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	24	N.A.	4.50	4.70	4.93	5.00	5.15	N.A.	4.80	5.30	N.A.	N.A.	
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	33	2.37	2.73	2.90	3.00	3.05	3.19	2.33	2.92	3.38	3.52	3.71	
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	35	17273	17401	17525	17645	17755	17860	17093	17580	18016	18369	18688	
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	34	12028.1	12110.8	12189.4	12269.4	12341.0	12413.3	11888.9	12227.0	12522.4	N.A.	N.A.	
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	2365.7	2396.7	2427.7	2465.8	2495.3	2526.2	2314.2	2445.2	2565.2	N.A.	N.A.	
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	603.4	609.4	614.2	618.9	623.7	628.6	597.5	616.6	636.8	N.A.	N.A.	
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	1127.2	1129.3	1132.8	1135.7	1138.9	1141.3	1116.7	1134.4	1147.0	N.A.	N.A.	
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	1792.2	1794.7	1798.8	1803.3	1809.7	1814.6	1784.7	1800.8	1821.7	N.A.	N.A.	
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	32	9.2	26.1	35.0	35.0	35.0	39.9	13.6	32.5	40.8	N.A.	N.A.	
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	33	-652.6	-659.3	-670.5	-674.3	-688.0	-690.0	-621.5	-671.5	-709.2	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 2018.

TABLE TWO
MAJOR MACROECONOMIC INDICATORS
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q4 2017 TO Q1 2018	Q1 2018 TO Q2 2018	Q2 2018 TO Q3 2018	Q3 2018 TO Q4 2018	Q4 2018 TO Q1 2019	2017 TO 2018	2018 TO 2019	2019 TO 2020	2020 TO 2021
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	34	4.9	4.8	4.8	4.6	4.6	4.9	4.7	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	34	2.0	2.0	2.0	2.0	2.1	2.0	2.1	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	12	11.5	17.6	5.7	5.9	1.8	11.4	3.3	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	34	-0.1	-0.1	-0.1	-0.1	-0.0	-0.4	-0.2	0.1	0.1
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	29 29	1.5 183.3	1.4 171.1	1.4 168.7	1.2 151.8	1.4 172.9	1.4 175.1	1.2 150.3	N.A. N.A.	N.A. N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	30	3.2	2.8	2.7	2.9	2.6	3.5	2.5	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	31	5.9	1.9	0.9	3.8	1.2	6.4	2.7	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	32	0.25	0.23	0.16	0.19	0.14	0.84	0.63	0.34	0.17
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	22	N.A.	0.15	0.16	0.10	0.15	N.A.	0.46	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	24	N.A.	0.20	0.23	0.07	0.15	N.A.	0.50	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	33	0.36	0.17	0.10	0.05	0.14	0.59	0.46	0.14	0.19
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	35	3.0	2.9	2.8	2.5	2.4	2.8	2.5	2.0	1.7
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	34	2.8	2.6	2.7	2.4	2.4	2.8	2.4	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	5.3	5.3	6.4	4.9	5.0	5.7	4.9	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	4.0	3.2	3.1	3.1	3.2	3.2	3.3	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	0.7	1.3	1.0	1.2	0.9	1.6	1.1	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	0.6	0.9	1.0	1.4	1.1	0.9	1.2	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	32	16.9	8.9	0.0	0.0	4.9	18.9	8.3	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	33	-6.7	-11.2	-3.8	-13.7	-2.0	-50.0	-37.7	N.A.	N.A.

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

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 2018.

TABLE THREE
 MAJOR PRICE INDICATORS
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST(Q/Q)					ACTUAL	FORECAST(Q4/Q4)		
		2017 Q4	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2017 ANNUAL	2018 ANNUAL	2019 ANNUAL	2020 ANNUAL
1. CONSUMER PRICE INDEX (ANNUAL RATE)	35	3.7	2.7	2.0	2.3	2.2	2.3	2.1	2.1	2.2	2.3
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	34	2.3	2.2	2.1	2.2	2.2	2.3	1.7	2.2	2.3	2.4
3. PCE PRICE INDEX (ANNUAL RATE)	34	2.8	2.1	1.9	1.9	1.9	2.0	1.7	1.9	2.0	2.0
4. CORE PCE PRICE INDEX (ANNUAL RATE)	33	1.9	1.8	1.9	1.9	1.9	2.0	1.5	1.9	2.0	2.0

Source: Research Department, Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters, First Quarter 2018.

TABLE FOUR
YIELD SPREADS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST					ACTUAL	FORECAST				
		2017 Q4	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2017 ANNUAL	2018 ANNUAL	2019 ANNUAL	2020 ANNUAL	2021 ANNUAL	
1. TBOND MINUS TBILL (PERCENTAGE POINTS)	32	1.16	1.25	1.20	1.15	1.11	1.10	1.40	1.19	1.00	0.85	0.75	
2. AAA MINUS TBOND (PERCENTAGE POINTS)	22	N.A.	1.14	1.15	1.10	1.15	1.17	N.A.	1.14	1.19	N.A.	N.A.	
3. BAA MINUS TBOND (PERCENTAGE POINTS)	24	N.A.	1.80	1.78	1.84	1.84	1.87	N.A.	1.82	1.92	N.A.	N.A.	
4. BAA MINUS AAA (PERCENTAGE POINTS)	22	N.A.	0.70	0.72	0.73	0.72	0.73	N.A.	0.72	0.77	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 2018.

TABLE FIVE
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
	TO Q1 2018	TO Q2 2018	TO Q3 2018	TO Q4 2018	TO Q1 2019
NUMBER OF FORECASTERS					
10 OR LESS	27	19	16	12	6
11 TO 20	2	11	13	17	20
21 TO 30	1	0	1	2	5
31 TO 40	0	0	0	0	0
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	0	0	0	0
81 TO 90	0	0	0	0	0
91 AND OVER	0	0	0	0	0
NOT REPORTING	6	6	6	5	5
MEAN AND MEDIAN					
MEDIAN PROBABILITY	5.00	10.00	10.00	14.00	15.00
MEAN PROBABILITY	5.81	9.08	11.43	13.60	16.78

Note: Total number of forecasters reporting is 30.

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2018.

TABLE SIX
MEAN PROBABILITIES

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

	2018	2019	2020	2021
9.0 PERCENT OR MORE	0.03	0.03	0.02	0.08
8.0 TO 8.9 PERCENT	0.03	0.04	0.08	0.27
7.5 TO 7.9 PERCENT	0.03	0.04	0.10	0.36
7.0 TO 7.4 PERCENT	0.03	0.06	0.71	0.88
6.5 TO 6.9 PERCENT	0.03	0.14	1.17	2.21
6.0 TO 6.4 PERCENT	0.21	0.83	3.15	3.85
5.5 TO 5.9 PERCENT	0.52	2.81	6.23	6.97
5.0 TO 5.4 PERCENT	3.07	8.73	12.37	13.57
4.0 TO 4.9 PERCENT	45.64	35.79	34.38	37.34
LESS THAN 4.0 PERCENT	50.39	51.53	41.80	34.49

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

	2017-2018	2018-2019	2019-2020	2020-2021
6.0 PERCENT OR MORE	0.09	0.18	0.15	0.26
5.0 TO 5.9 PERCENT	0.38	0.87	0.84	0.97
4.0 TO 4.9 PERCENT	4.94	4.55	3.27	3.07
3.0 TO 3.9 PERCENT	27.27	19.08	11.90	10.97
2.0 TO 2.9 PERCENT	50.69	43.56	36.03	33.99
1.0 TO 1.9 PERCENT	10.71	19.22	24.23	26.29
0.0 TO 0.9 PERCENT	3.73	8.07	13.58	14.65
-1.0 TO -0.1 PERCENT	1.56	2.84	6.72	6.66
-2.0 TO -1.1 PERCENT	0.46	1.03	2.21	2.10
-3.0 TO -2.1 PERCENT	0.13	0.55	0.79	0.66
LESS THAN -3.0 PERCENT	0.05	0.06	0.29	0.38

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

	2017-2018	2018-2019
4.0 PERCENT OR MORE	0.21	0.68
3.5 TO 3.9 PERCENT	0.71	1.48
3.0 TO 3.4 PERCENT	2.84	5.15
2.5 TO 2.9 PERCENT	13.73	18.08
2.0 TO 2.4 PERCENT	36.03	36.58
1.5 TO 1.9 PERCENT	35.86	25.75
1.0 TO 1.4 PERCENT	8.37	8.41
0.5 TO 0.9 PERCENT	1.78	2.36
0.0 TO 0.4 PERCENT	0.33	0.80
LESS THAN 0.0 PERCENT	0.15	0.70

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2018.

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

MEAN PROBABILITY ATTACHED TO CORE CPI INFLATION:

	17Q4 TO 18Q4	18Q4 TO 19Q4
4.0 PERCENT OR MORE	0.17	0.87
3.5 TO 3.9 PERCENT	0.47	1.14
3.0 TO 3.4 PERCENT	3.92	7.55
2.5 TO 2.9 PERCENT	19.30	21.04
2.0 TO 2.4 PERCENT	42.14	39.29
1.5 TO 1.9 PERCENT	27.18	21.96
1.0 TO 1.4 PERCENT	5.36	5.91
0.5 TO 0.9 PERCENT	1.15	1.59
0.0 TO 0.4 PERCENT	0.24	0.43
LESS THAN 0.0 PERCENT	0.07	0.22

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	17Q4 TO 18Q4	18Q4 TO 19Q4
4.0 PERCENT OR MORE	0.10	0.41
3.5 TO 3.9 PERCENT	0.33	0.75
3.0 TO 3.4 PERCENT	1.78	3.51
2.5 TO 2.9 PERCENT	9.85	13.78
2.0 TO 2.4 PERCENT	36.49	34.38
1.5 TO 1.9 PERCENT	38.97	33.44
1.0 TO 1.4 PERCENT	9.83	9.75
0.5 TO 0.9 PERCENT	2.13	2.90
0.0 TO 0.4 PERCENT	0.43	0.75
LESS THAN 0.0 PERCENT	0.09	0.34

Source: Research Department, Federal Reserve Bank of Philadelphia.
Survey of Professional Forecasters, First Quarter 2018.

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

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2018-2022

CPI INFLATION RATE		PCE INFLATION RATE	
MINIMUM	1.90	MINIMUM	1.80
LOWER QUARTILE	2.00	LOWER QUARTILE	1.90
MEDIAN	2.20	MEDIAN	2.00
UPPER QUARTILE	2.40	UPPER QUARTILE	2.10
MAXIMUM	3.40	MAXIMUM	2.80
MEAN	2.28	MEAN	2.04
STD. DEVIATION	0.32	STD. DEVIATION	0.24
N	31	N	31
MISSING	5	MISSING	5

ANNUAL AVERAGE OVER THE FOLLOWING 5 YEARS: 2023-2027

CPI INFLATION RATE		PCE INFLATION RATE	
MINIMUM	1.90	MINIMUM	1.70
LOWER QUARTILE	2.10	LOWER QUARTILE	2.00
MEDIAN	2.26	MEDIAN	2.10
UPPER QUARTILE	2.40	UPPER QUARTILE	2.20
MAXIMUM	3.60	MAXIMUM	3.20
MEAN	2.30	MEAN	2.11
STD. DEVIATION	0.32	STD. DEVIATION	0.26
N	30	N	30
MISSING	6	MISSING	6

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2018-2027

CPI INFLATION RATE		PCE INFLATION RATE	
MINIMUM	2.00	MINIMUM	1.80
LOWER QUARTILE	2.05	LOWER QUARTILE	1.95
MEDIAN	2.25	MEDIAN	2.00
UPPER QUARTILE	2.40	UPPER QUARTILE	2.10
MAXIMUM	3.50	MAXIMUM	3.00
MEAN	2.29	MEAN	2.07
STD. DEVIATION	0.30	STD. DEVIATION	0.22
N	31	N	31
MISSING	5	MISSING	5

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 2018.

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

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2018-2027

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REAL GDP GROWTH RATE		PRODUCTIVITY GROWTH RATE			
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MINIMUM	1.50	MINIMUM	1.00		
LOWER QUARTILE	1.80	LOWER QUARTILE	1.20		
MEDIAN	2.15	MEDIAN	1.50		
UPPER QUARTILE	2.50	UPPER QUARTILE	1.65		
MAXIMUM	3.00	MAXIMUM	2.85		
MEAN	2.16	MEAN	1.55		
STD. DEVIATION	0.38	STD. DEVIATION	0.49		
N	27	N	21		
MISSING	9	MISSING	15		
STOCK RETURNS (S&P 500)		BOND RATE (10-YEAR)		BILL RETURNS (3-MONTH)	
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MINIMUM	2.00	MINIMUM	2.50	MINIMUM	1.75
LOWER QUARTILE	4.10	LOWER QUARTILE	3.32	LOWER QUARTILE	2.20
MEDIAN	6.00	MEDIAN	3.70	MEDIAN	2.75
UPPER QUARTILE	6.50	UPPER QUARTILE	4.00	UPPER QUARTILE	2.90
MAXIMUM	10.00	MAXIMUM	4.30	MAXIMUM	3.50
MEAN	5.48	MEAN	3.57	MEAN	2.63
STD. DEVIATION	1.97	STD. DEVIATION	0.53	STD. DEVIATION	0.49
N	16	N	21	N	21
MISSING	20	MISSING	15	MISSING	15

Source: Research Department, Federal Reserve Bank of Philadelphia.
 Survey of Professional Forecasters, First Quarter 2018.