



# SURVEY OF PROFESSIONAL FORECASTERS

Release Date: May 12, 2017

## SECOND QUARTER 2017

### *Forecasters Predict Slightly Brighter Outlook for Growth and Labor Markets over the Next Four Quarters*

The U.S. economy over the next four quarters looks slightly stronger now than it did three months ago, according to 37 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The forecasters predict real GDP will grow at an annual rate of 3.1 percent this quarter, up from the previous estimate of 2.3 percent. Quarterly growth over the following three quarters also looks improved. On an annual-average over annual-average basis, the forecasters predict real GDP will grow 2.1 percent in 2017, 2.5 percent in 2018, 2.1 percent in 2019, and 2.3 percent in 2020.

An improved outlook for the unemployment rate accompanies the outlook for growth. The forecasters predict that the unemployment rate will average 4.5 percent in the current quarter, before falling to 4.4 percent in the next two quarters, and 4.3 percent in the first two quarters of 2018. The projections for the next four quarters (and the next four years) are below those of the last survey, indicating a brighter outlook for unemployment.

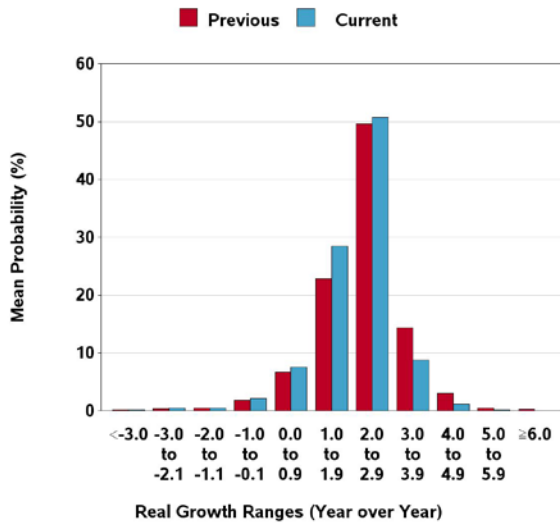
The panelists also predict an improvement in near-term employment. The forecasters see nonfarm payroll employment growing at a rate of 177,300 jobs per month this quarter, up from the previous estimate of 167,000. The projections for the following three quarters are also higher than those of the last survey. The forecasters' projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 182,600 in 2017 and 162,800 in 2018. (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*

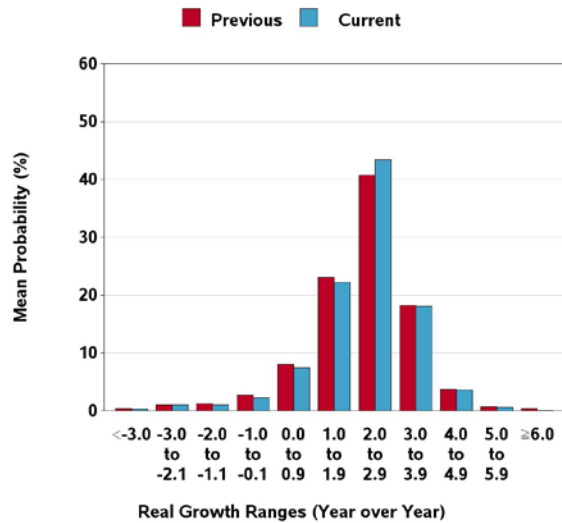
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2017:Q2	2.3	3.1	4.6	4.5	167.0	177.3
2017:Q3	2.4	2.5	4.6	4.4	168.9	170.7
2017:Q4	2.4	2.4	4.5	4.4	160.3	165.2
2018:Q1	2.2	2.4	4.5	4.3	157.6	166.7
2018:Q2	N.A.	2.7	N.A.	4.3	N.A.	159.3
Annual data (projections are based on annual-average levels):						
2017	2.3	2.1	4.6	4.5	180.3	182.6
2018	2.4	2.5	4.5	4.3	164.5	162.8
2019	2.6	2.1	4.5	4.4	N.A.	N.A.
2020	2.1	2.3	4.6	4.5	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 are holding steady their estimates of uncertainty about growth in the next four years.

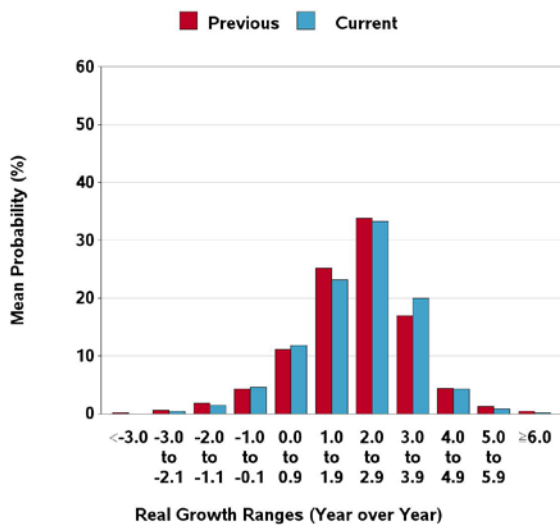
Mean Probabilities for Real GDP Growth in 2017



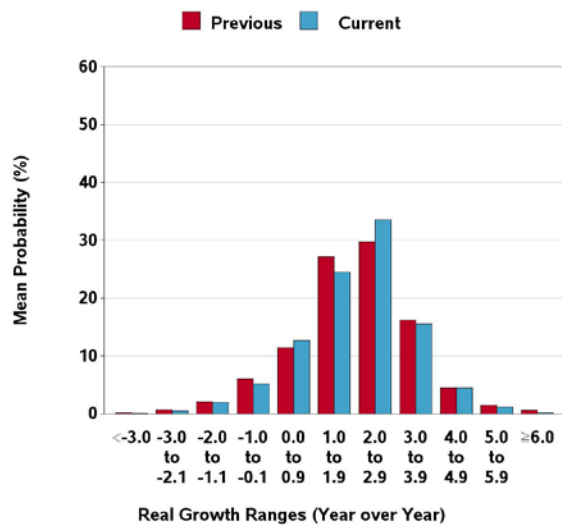
Mean Probabilities for Real GDP Growth in 2018



Mean Probabilities for Real GDP Growth in 2019

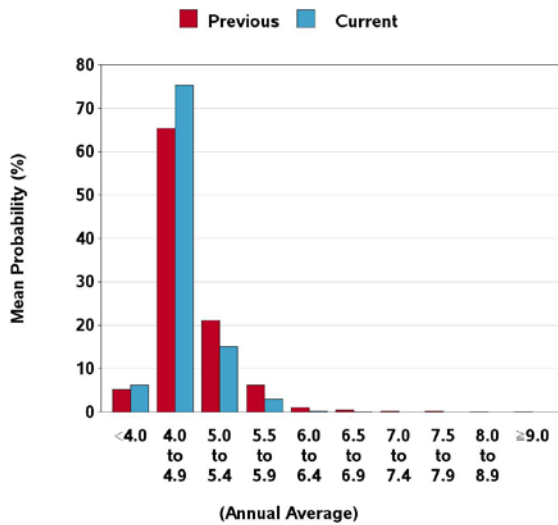


Mean Probabilities for Real GDP Growth in 2020

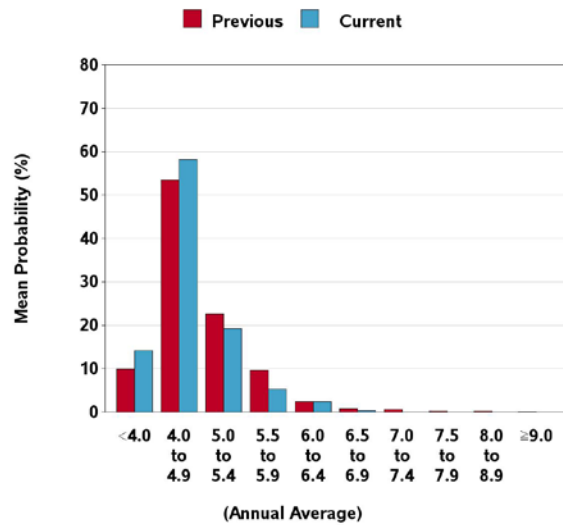


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The charts show the panelists are raising their density estimates for unemployment less than 4.9 percent over the next four years.

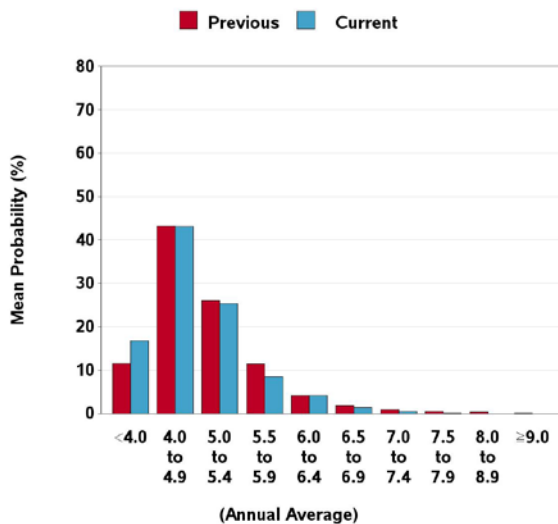
Mean Probabilities for Unemployment Rate in 2017



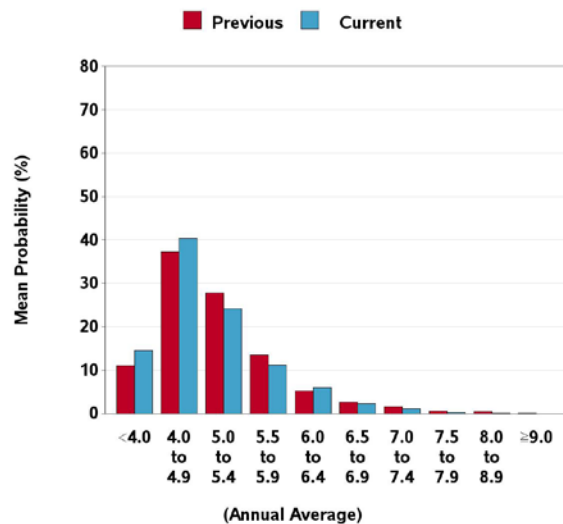
Mean Probabilities for Unemployment Rate in 2018



Mean Probabilities for Unemployment Rate in 2019



Mean Probabilities for Unemployment Rate in 2020



### ***Forecasters Expect Lower Headline Inflation in 2017***

The forecasters have revised downward their projections for headline CPI and PCE inflation over the next three quarters in 2017. The forecasters expect current-quarter headline CPI inflation to average 1.6 percent, lower than the last survey's estimate of 2.3 percent. Similarly, the forecasters predict current-quarter headline PCE inflation of 1.2 percent, also lower than the 2.0 percent predicted three months ago.

Measured on a fourth-quarter over fourth-quarter basis, headline CPI inflation is expected to average about 2.3 percent in each of the next three years, little changed from the last survey. The forecasters have revised downward their projections for headline PCE inflation in 2017 to 1.8 percent, but they pegged the rates for 2018 and 2019 at 2.0 percent, unchanged from the last survey.

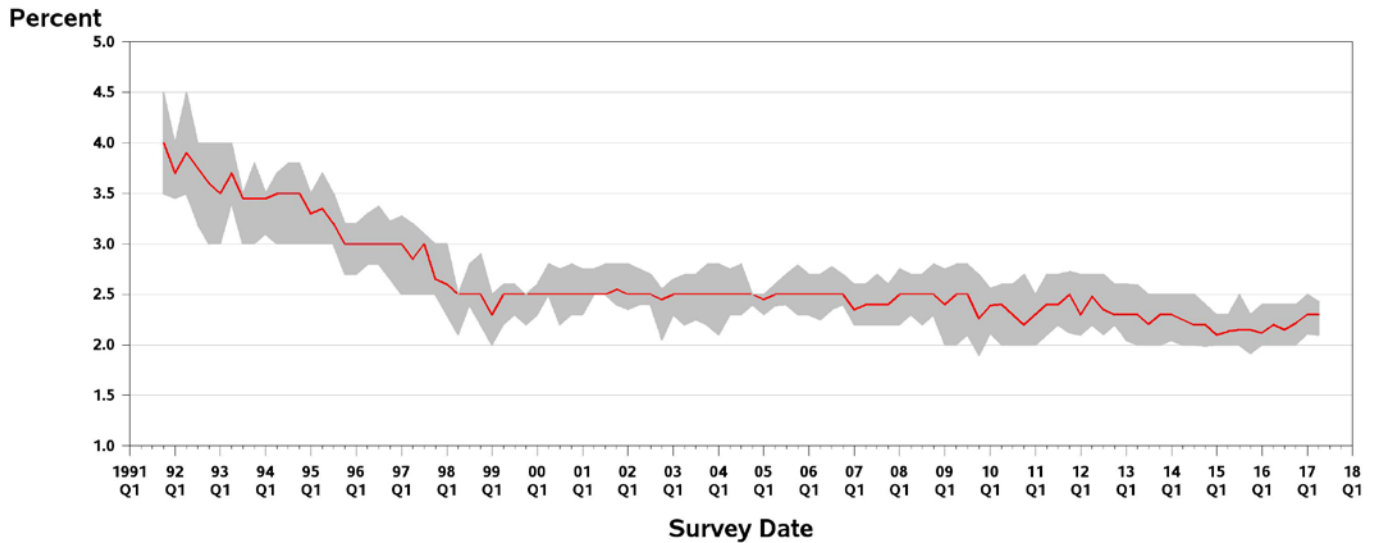
Over the next 10 years, 2017 to 2026, the forecasters expect headline CPI inflation to average 2.30 percent at an annual rate, unchanged from the last survey. The corresponding estimate for 10-year annual-average headline PCE inflation is 2.09 percent, little changed from the 2.10 percent predicted in the previous survey.

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

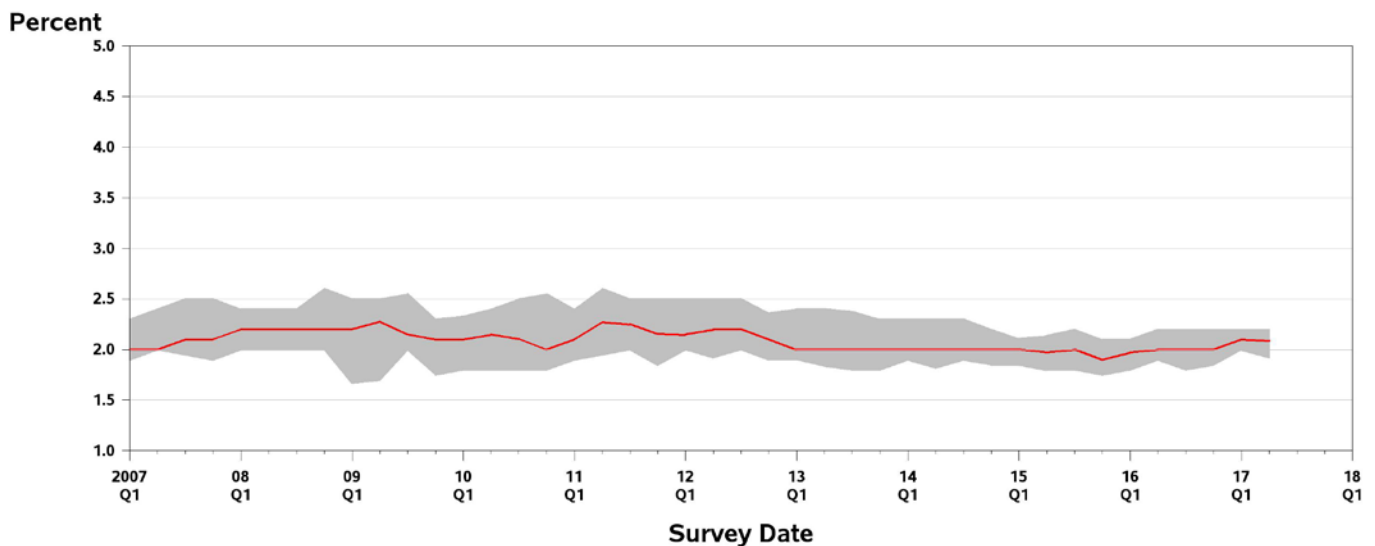
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	New	Previous	New	Previous	New	Previous	New
Quarterly								
2017:Q2	2.3	1.6	2.2	1.9	2.0	1.2	1.9	1.7
2017:Q3	2.3	2.2	2.1	2.2	2.0	1.9	1.9	1.9
2017:Q4	2.5	2.3	2.2	2.2	2.1	2.0	1.9	1.9
2018:Q1	2.4	2.4	2.3	2.3	2.1	2.1	2.0	1.9
2018:Q2	N.A.	2.2	N.A.	2.2	N.A.	2.0	N.A.	2.0
Q4/Q4 Annual Averages								
2017	2.4	2.3	2.2	2.2	2.0	1.8	1.9	1.9
2018	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0
2019	2.3	2.4	2.2	2.4	2.0	2.0	2.0	2.0
Long-Term Annual Averages								
2017-2021	2.30	2.35	N.A.	N.A.	2.03	2.06	N.A.	N.A.
2017-2026	2.30	2.30	N.A.	N.A.	2.10	2.09	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 top panel shows an unchanged level of the long-term projection for CPI inflation, at 2.30 percent. The bottom panel depicts the little changed 10-year forecast for PCE inflation, at 2.09 percent.

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

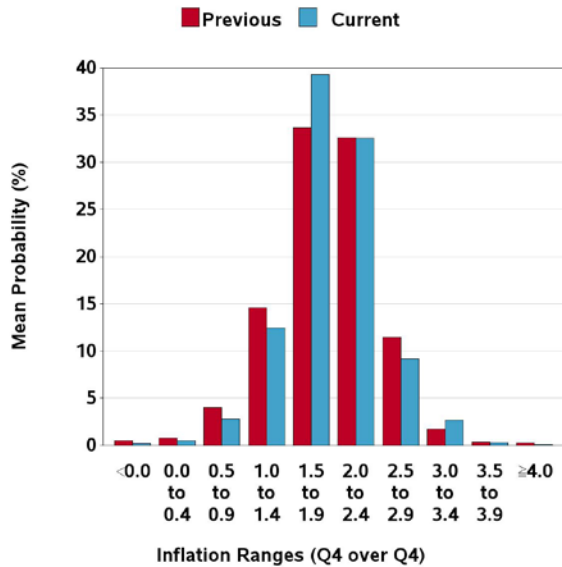


**Projections for the 10-Year Annual-Average Rate of PCE Inflation  
(Median and Interquartile Range)**

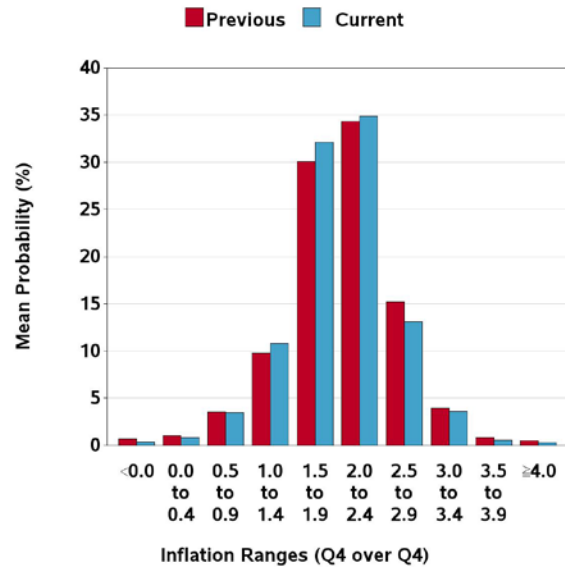


The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2017 and 2018 will fall into each of 10 ranges. For both years, the forecasters have increased the probability that core PCE inflation will be between 1.5 percent to 1.9 percent, compared with their estimates in the survey of three months ago.

**Mean Probabilities for Core PCE Inflation in 2017**



**Mean Probabilities for Core PCE Inflation in 2018**



***Low and Reduced Risk of a Negative Quarter***

The forecasters see a lower chance of a contraction in real GDP in any of the next four quarters. For the current quarter, the forecasters predict an 8.4 percent chance of negative growth, down from 11.2 percent in the last survey.

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

Quarterly data:	Previous	New
2017:Q2	11.2	8.4
2017:Q3	14.6	10.9
2017:Q4	16.2	14.0
2018:Q1	17.7	17.1
2018:Q2	N.A.	17.2

### *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.

#### **New File Format**

On May 12, 2017, the survey's data files on the Bank's website were changed to a .xlsx extension instead of .xls.

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; **Nathaniel Curtis**, Navigant Consulting; **Gregory Daco**, Oxford Economics USA, Inc.; **Rajeev Dhawan**, Georgia State University; **Robert Dietz**, National Association of Home Builders; **Gabriel Ehrlich**, **Daniil Manaenkoy**, **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.; **IHS Markit**; **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**; **L. Douglas Lee**, Economics from Washington; **John Lonski**, Moody's Capital Markets Group; **Macroeconomic Advisers, LLC**; **R. Anthony Metz**, Pareto Optimal Economics; **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; **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; **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

	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2017	2018 (YEAR-OVER-YEAR)	2019	2020
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	3.1	2.5	2.4	2.4	2.7	2.1	2.5	2.1	2.3
2. GDP PRICE INDEX (PERCENT CHANGE)	1.8	2.0	2.1	1.9	2.1	2.0	2.1	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	4.9	4.5	4.5	4.6	4.4	4.2	4.6	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	1.5	1.4	1.4	1.4	1.3	1.5	1.3	N.A.	N.A.
(AVG MONTHLY CHANGE)	177.3	170.7	165.2	166.7	159.3	182.6	162.8	N.A.	N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	4.5	4.4	4.4	4.3	4.3	4.5	4.3	4.4	4.5
6. 3-MONTH TREASURY BILL (PERCENT)	0.9	1.1	1.3	1.4	1.6	1.0	1.7	2.3	2.6
7. 10-YEAR TREASURY BOND (PERCENT)	2.4	2.6	2.7	2.8	2.9	2.6	3.0	3.5	3.7
	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2017	2018 (Q4-OVER-Q4)	2019	
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	1.6	2.2	2.3	2.4	2.2	2.3	2.3	2.4	
9. CORE CPI (ANNUAL RATE)	1.9	2.2	2.2	2.3	2.2	2.2	2.3	2.4	
10. PCE (ANNUAL RATE)	1.2	1.9	2.0	2.1	2.0	1.8	2.0	2.0	
11. CORE PCE (ANNUAL RATE)	1.7	1.9	1.9	1.9	2.0	1.9	2.0	2.0	

THE FIGURES ON EACH LINE ARE MEDIANS OF 37 INDIVIDUAL FORECASTERS.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, SECOND QUARTER 2017.



# **SURVEY OF PROFESSIONAL FORECASTERS**

**Second Quarter 2017**

## **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 April 28, 2017; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before May 9, 2017.

TABLE ONE  
MAJOR MACROECONOMIC INDICATORS  
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST				ACTUAL		FORECAST		
		2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2016 ANNUAL	2017 ANNUAL	2018 ANNUAL	2019 ANNUAL	2020 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	34	19007	19236	19451	19666	19887	20105	18569	19343	20226	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	35	112.87	113.37	113.93	114.52	115.05	115.65	111.45	113.67	116.00	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	20	N.A.	1647.0	1655.8	1674.2	1702.2	1717.2	1542.5	1647.9	1710.7	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	35	4.7	4.5	4.4	4.4	4.3	4.3	4.8	4.5	4.3	4.4	4.5
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	31	145720	146252	146764	147260	147760	148238	144306	146498	148451	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	32	103.7	104.5	105.1	105.7	106.2	106.9	103.1	104.7	107.2	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	33	1.25	1.27	1.29	1.30	1.32	1.34	1.18	1.28	1.34	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	34	0.59	0.85	1.08	1.28	1.40	1.60	0.32	0.96	1.66	2.33	2.62
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	19	N.A.	3.97	4.14	4.30	4.40	4.50	N.A.	4.10	4.54	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	21	N.A.	4.65	4.80	5.00	5.07	5.20	N.A.	4.80	5.25	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	36	2.44	2.43	2.60	2.70	2.80	2.91	1.84	2.56	2.96	3.50	3.70
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	36	16842	16972	17077	17180	17283	17400	16662	17017	17442	17804	18216
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	35	11679.5	11757.6	11831.0	11899.7	11973.0	12057.9	11522.2	11792.6	12098.1	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	34	2247.1	2270.8	2293.1	2317.5	2342.0	2367.1	2188.6	2281.6	2371.5	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	34	615.4	622.8	630.1	637.7	645.6	653.7	592.0	626.3	656.0	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	35	1115.5	1117.5	1120.4	1123.9	1126.3	1130.6	1120.5	1119.7	1131.6	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	35	1778.0	1784.5	1789.4	1795.7	1802.4	1809.8	1784.8	1786.8	1813.6	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	33	10.3	31.9	38.0	42.0	45.0	48.2	22.0	30.0	46.2	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	34	-602.7	-613.4	-629.5	-641.3	-653.5	-668.2	-563.0	-621.7	-675.7	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, SECOND QUARTER 2017.

TABLE TWO  
MAJOR MACROECONOMIC INDICATORS  
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	2016	2017	2018	2019
		TO Q2 2017	TO Q3 2017	TO Q4 2017	TO Q1 2018	TO Q2 2018	TO 2017	TO 2018	TO 2019	TO 2020
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	34	4.9	4.5	4.5	4.6	4.4	4.2	4.6	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	35	1.8	2.0	2.1	1.9	2.1	2.0	2.1	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	20	6.0	2.1	4.5	6.9	3.6	6.8	3.8	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	35	-0.2	-0.1	-0.0	-0.1	0.0	-0.3	-0.2	0.1	0.1
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	31 31	1.5 177.3	1.4 170.7	1.4 165.2	1.4 166.7	1.3 159.3	1.5 182.6	1.3 162.8	N.A. N.A.	N.A. N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	32	3.0	2.4	2.2	2.0	2.5	1.6	2.4	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	33	5.0	7.0	1.6	7.9	6.2	8.7	5.1	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	34	0.26	0.23	0.20	0.12	0.20	0.64	0.70	0.67	0.29
9. MOODY'S AAA CORP BOND YIELD * (PERCENT)	19	N.A.	0.17	0.16	0.10	0.10	N.A.	0.44	N.A.	N.A.
10. MOODY'S BAA CORP BOND YIELD * (PERCENT)	21	N.A.	0.15	0.20	0.07	0.13	N.A.	0.45	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	36	-0.01	0.17	0.10	0.10	0.11	0.72	0.41	0.54	0.20
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	36	3.1	2.5	2.4	2.4	2.7	2.1	2.5	2.1	2.3
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	35	2.7	2.5	2.3	2.5	2.9	2.3	2.6	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	34	4.3	4.0	4.3	4.3	4.4	4.3	3.9	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	34	4.9	4.8	4.9	5.1	5.1	5.8	4.7	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	35	0.7	1.0	1.2	0.9	1.5	-0.1	1.1	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	35	1.5	1.1	1.4	1.5	1.6	0.1	1.5	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	33	21.6	6.1	4.0	3.0	3.2	8.0	16.2	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	34	-10.7	-16.0	-11.8	-12.3	-14.7	-58.7	-54.0	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, SECOND QUARTER 2017.

TABLE THREE  
 MAJOR PRICE INDICATORS  
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST(Q/Q)				ACTUAL		FORECAST(Q4/Q4)	
		2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2016 ANNUAL	2017 ANNUAL	2018 ANNUAL	2019 ANNUAL
1. CONSUMER PRICE INDEX (ANNUAL RATE)	35	3.1	1.6	2.2	2.3	2.4	2.2	1.8	2.3	2.3	2.4
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	33	2.5	1.9	2.2	2.2	2.3	2.2	2.2	2.2	2.3	2.4
3. PCE PRICE INDEX (ANNUAL RATE)	33	2.4	1.2	1.9	2.0	2.1	2.0	1.4	1.8	2.0	2.0
4. CORE PCE PRICE INDEX (ANNUAL RATE)	33	2.0	1.7	1.9	1.9	1.9	2.0	1.7	1.9	2.0	2.0

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA. SURVEY OF PROFESSIONAL FORECASTERS, SECOND QUARTER 2017.

TABLE FOUR  
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018
	TO Q2 2017	TO Q3 2017	TO Q4 2017	TO Q1 2018	TO Q2 2018
NUMBER OF FORECASTERS					
10 OR LESS	23	18	13	8	9
11 TO 20	7	11	16	16	13
21 TO 30	1	2	1	6	9
31 TO 40	0	0	1	1	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	6	6
MEAN AND MEDIAN					
MEDIAN PROBABILITY	5.00	10.00	15.00	16.00	15.00
MEAN PROBABILITY	8.43	10.92	14.01	17.05	17.16

NOTE: TOTAL NUMBER OF FORECASTERS REPORTING IS 31.  
SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, SECOND QUARTER 2017.

TABLE FIVE  
MEAN PROBABILITIES

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

	2017	2018	2019	2020
9.0 PERCENT OR MORE	0.03	0.03	0.01	0.02
8.0 TO 8.9 PERCENT	0.03	0.04	0.04	0.13
7.5 TO 7.9 PERCENT	0.03	0.04	0.07	0.17
7.0 TO 7.4 PERCENT	0.03	0.05	0.45	1.10
6.5 TO 6.9 PERCENT	0.07	0.35	1.33	2.29
6.0 TO 6.4 PERCENT	0.17	2.44	4.19	6.00
5.5 TO 5.9 PERCENT	2.94	5.27	8.54	11.18
5.0 TO 5.4 PERCENT	15.10	19.29	25.39	24.24
4.0 TO 4.9 PERCENT	75.34	58.26	43.10	40.37
LESS THAN 4.0 PERCENT	6.24	14.22	16.87	14.51

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

	2016-2017	2017-2018	2018-2019	2019-2020
6.0 OR MORE	0.03	0.08	0.13	0.20
5.0 TO 5.9	0.13	0.56	0.82	1.23
4.0 TO 4.9	1.14	3.61	4.30	4.51
3.0 TO 3.9	8.76	18.11	19.98	15.58
2.0 TO 2.9	50.78	43.41	33.28	33.60
1.0 TO 1.9	28.45	22.25	23.18	24.44
0.0 TO 0.9	7.50	7.43	11.89	12.71
-1.0 TO -0.1	2.18	2.26	4.59	5.19
-2.0 TO -1.1	0.42	0.99	1.45	1.97
-3.0 TO -2.1	0.42	1.04	0.39	0.52
LESS THAN -3.0	0.19	0.26	0.01	0.05

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

	2016-2017	2017-2018
4.0 OR MORE	0.10	0.42
3.5 TO 3.9	0.47	0.85
3.0 TO 3.4	2.81	4.19
2.5 TO 2.9	10.51	17.37
2.0 TO 2.4	42.38	39.18
1.5 TO 1.9	32.23	25.99
1.0 TO 1.4	8.57	7.87
0.5 TO 0.9	1.93	2.89
0.0 TO 0.4	0.60	0.73
WILL DECLINE	0.40	0.51

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, SECOND QUARTER 2017.

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

MEAN PROBABILITY ATTACHED TO CORE CPI INFLATION:

	16Q4 TO 17Q4	17Q4 TO 18Q4
4 PERCENT OR MORE	0.13	0.55
3.5 TO 3.9 PERCENT	0.47	0.96
3.0 TO 3.4 PERCENT	4.81	7.00
2.5 TO 2.9 PERCENT	22.28	21.95
2.0 TO 2.4 PERCENT	42.85	36.03
1.5 TO 1.9 PERCENT	23.94	23.62
1.0 TO 1.4 PERCENT	3.72	6.85
0.5 TO 0.9 PERCENT	1.23	2.08
0.0 TO 0.4 PERCENT	0.37	0.62
WILL DECLINE	0.20	0.34

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	16Q4 TO 17Q4	17Q4 TO 18Q4
4 PERCENT OR MORE	0.11	0.29
3.5 TO 3.9 PERCENT	0.29	0.59
3.0 TO 3.4 PERCENT	2.69	3.59
2.5 TO 2.9 PERCENT	9.15	13.09
2.0 TO 2.4 PERCENT	32.53	34.91
1.5 TO 1.9 PERCENT	39.28	32.10
1.0 TO 1.4 PERCENT	12.44	10.80
0.5 TO 0.9 PERCENT	2.78	3.48
0.0 TO 0.4 PERCENT	0.50	0.81
WILL DECLINE	0.21	0.33

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
 SURVEY OF PROFESSIONAL FORECASTERS, SECOND QUARTER 2017.

TABLE SEVEN  
LONG-TERM (5-YEAR AND 10-YEAR) FORECASTS

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2017-2021

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CPI INFLATION RATE		PCE INFLATION RATE	
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MINIMUM	2.00	MINIMUM	1.80
LOWER QUARTILE	2.20	LOWER QUARTILE	1.97
MEDIAN	2.35	MEDIAN	2.06
UPPER QUARTILE	2.50	UPPER QUARTILE	2.28
MAXIMUM	3.30	MAXIMUM	2.70
MEAN	2.39	MEAN	2.12
STD. DEVIATION	0.29	STD. DEVIATION	0.24
N	31	N	28
MISSING	6	MISSING	9

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2017-2026

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CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.90	MINIMUM	1.80
LOWER QUARTILE	2.10	LOWER QUARTILE	1.92
MEDIAN	2.30	MEDIAN	2.09
UPPER QUARTILE	2.43	UPPER QUARTILE	2.20
MAXIMUM	3.50	MAXIMUM	2.90
MEAN	2.34	MEAN	2.11
STD. DEVIATION	0.33	STD. DEVIATION	0.25
N	31	N	28
MISSING	6	MISSING	9

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, SECOND QUARTER 2017.