



SURVEY OF PROFESSIONAL FORECASTERS

Release Date: August 12, 2016

THIRD QUARTER 2016

Forecasters See Weaker Outlook for Growth and Employment

The outlook for growth in the U.S. economy over the next three years looks slightly weaker than that of three months ago, according to 40 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The panel expects real GDP to grow at an annual rate of 2.6 percent this quarter and 2.3 percent next quarter. On an annual-average over annual-average basis, the forecasters see real GDP growing 1.5 percent in 2016, down from the previous estimate of 1.7 percent. The forecasters predict real GDP will grow 2.3 percent in 2017, 2.2 percent in 2018, and 2.2 percent in 2019. The forecasts for 2016, 2017, and 2018 are slightly weaker than the previous estimates.

The projections for unemployment remain nearly unchanged from those of the previous survey. The forecasters predict the unemployment rate will be an annual average of 4.8 percent in 2016, before falling to 4.6 percent in 2017, 4.6 percent in 2018, and 4.7 percent in 2019.

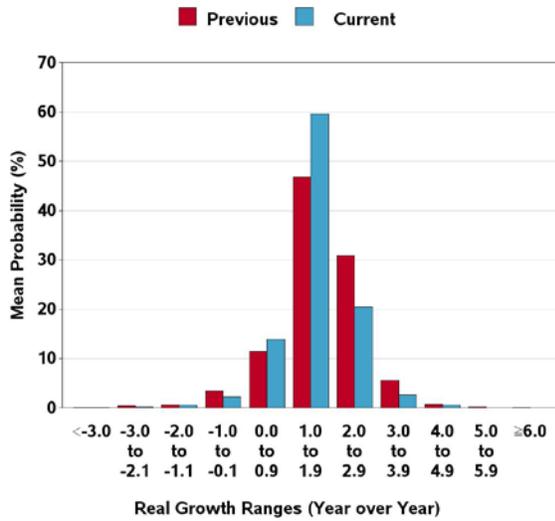
On the employment front, the forecasters have revised downward their estimates for job gains in 2016 and 2017. The forecasters' projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 204,600 in 2016, down from the previous estimate of 212,400, and 161,100 in 2017, down from the previous estimate of 178,400. (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

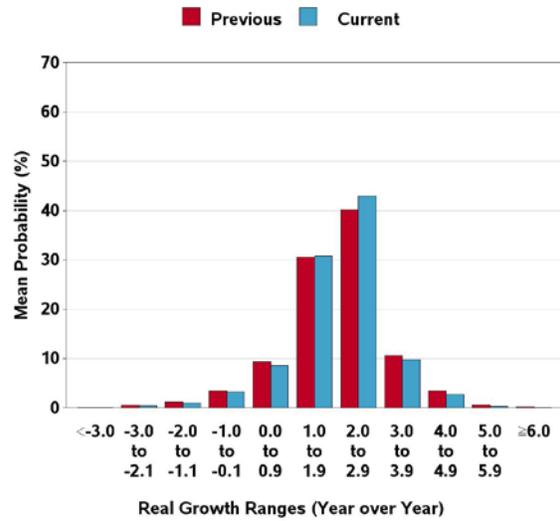
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2016:Q3	2.4	2.6	4.8	4.8	191.8	183.7
2016:Q4	2.3	2.3	4.7	4.7	176.0	169.8
2017:Q1	2.4	2.3	4.7	4.7	181.6	159.9
2017:Q2	2.4	2.3	4.6	4.6	166.5	164.9
2017:Q3	N.A.	2.1	N.A.	4.6	N.A.	159.4
Annual data (projections are based on annual-average levels):						
2016	1.7	1.5	4.8	4.8	212.4	204.6
2017	2.4	2.3	4.6	4.6	178.4	161.1
2018	2.4	2.2	4.6	4.6	N.A.	N.A.
2019	2.2	2.2	4.6	4.7	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. For 2016, the panelists are more certain now than they were in the previous survey that growth will fall below 2.0 percent. For 2017, 2018, and 2019, the probabilities are about the same now as they were in the survey of three months ago.

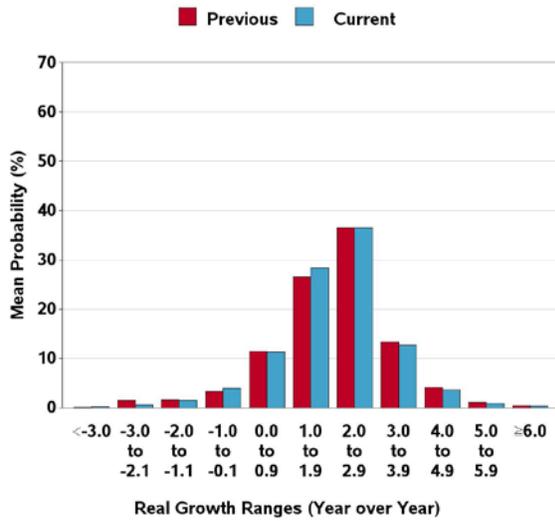
Mean Probabilities for Real GDP Growth in 2016



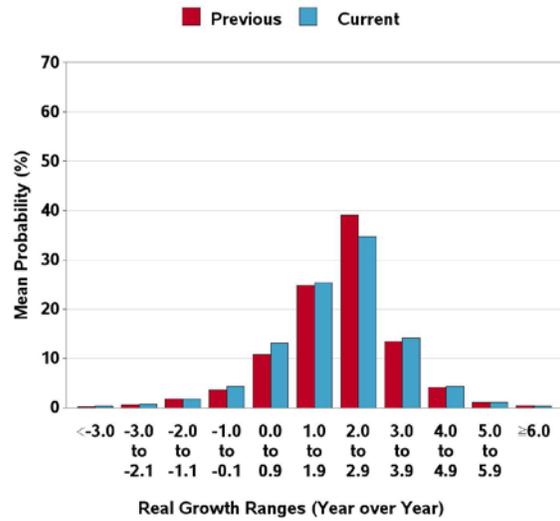
Mean Probabilities for Real GDP Growth in 2017



Mean Probabilities for Real GDP Growth in 2018

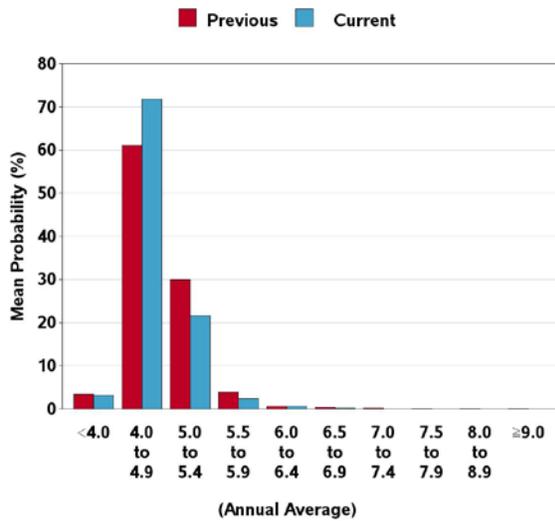


Mean Probabilities for Real GDP Growth in 2019

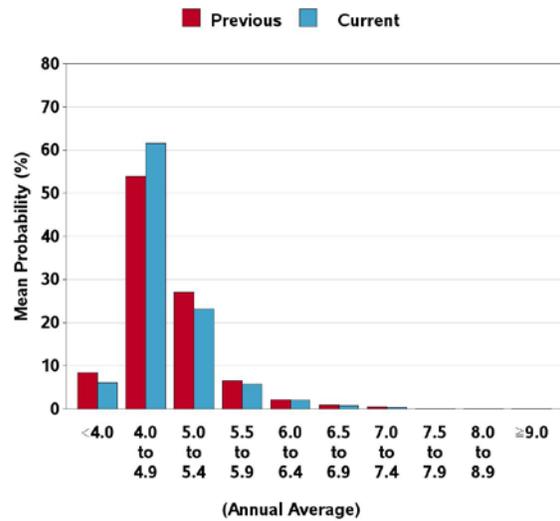


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The charts show the forecasters are more certain now than they were three months ago that unemployment in 2016 and 2017 will average between 4.0 and 4.9 percent.

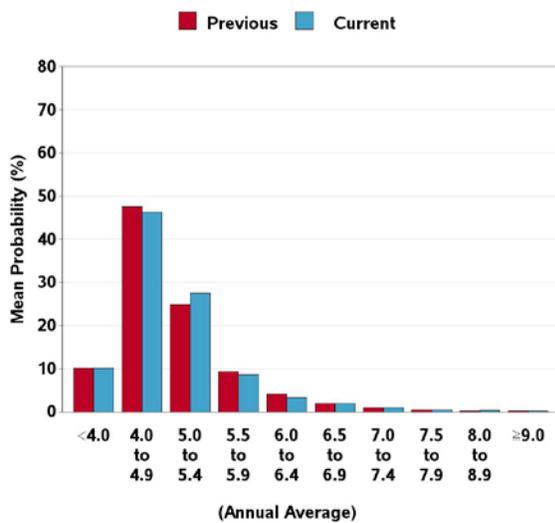
Mean Probabilities for Unemployment Rate in 2016



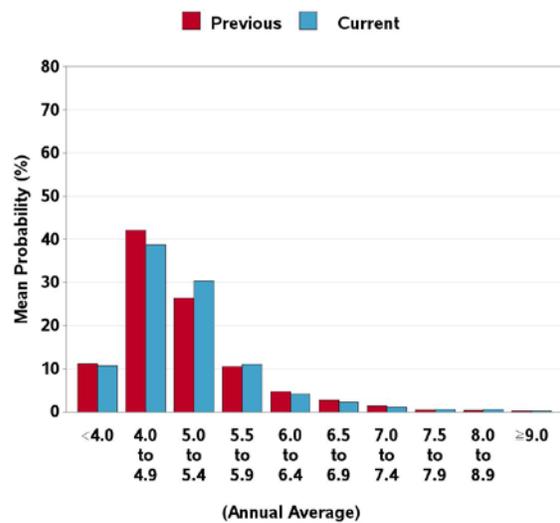
Mean Probabilities for Unemployment Rate in 2017



Mean Probabilities for Unemployment Rate in 2018



Mean Probabilities for Unemployment Rate in 2019



Short-Term CPI Inflation Revises Upward, While the Outlook for PCE Inflation Holds Steady

The forecasters see slightly higher headline CPI inflation in 2016 and 2017 compared with their predictions of three months ago. Measured on a fourth-quarter over fourth-quarter basis, headline CPI inflation is expected to average 1.6 percent in 2016, 2.3 percent in 2017, and 2.3 percent in 2018. The projections for headline PCE inflation over the next three years remained unchanged from the survey of three months ago. Measured on a fourth-quarter over fourth-quarter basis, headline PCE inflation is expected to average 1.4 percent in 2016, 1.9 percent in 2017, and 2.0 percent in 2018.

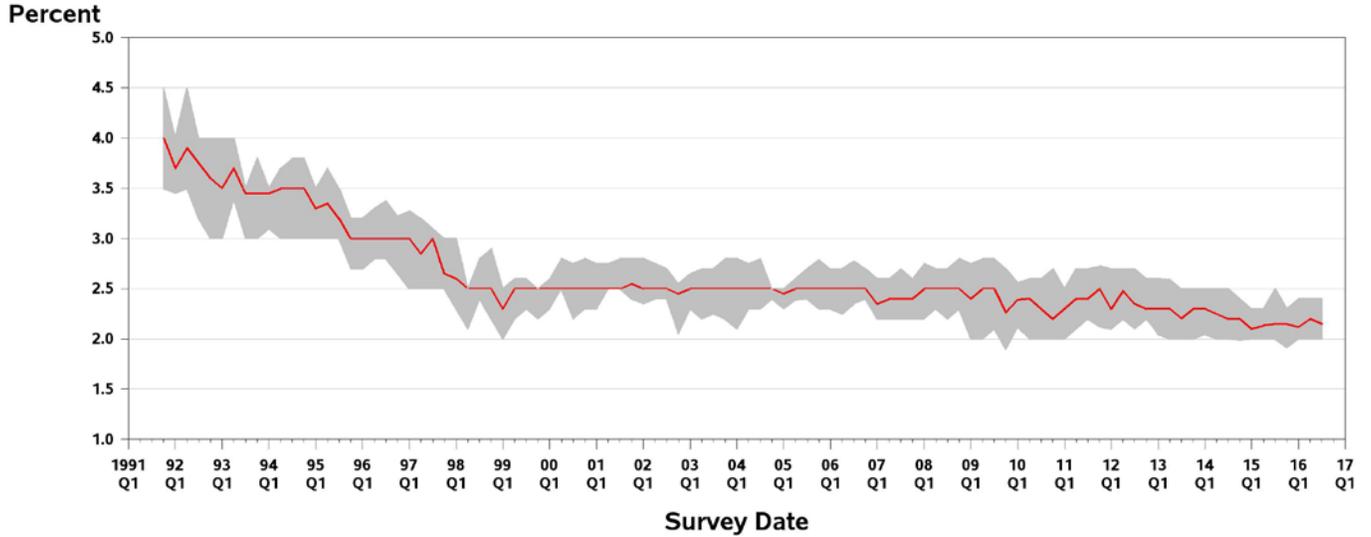
Over the next 10 years, 2016 to 2025, the forecasters expect headline CPI inflation to average 2.15 percent at an annual rate, down slightly from their previous estimate of 2.20 percent. The corresponding estimate for 10-year annual-average PCE inflation is 2.00 percent, which is unchanged from the previous estimate.

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

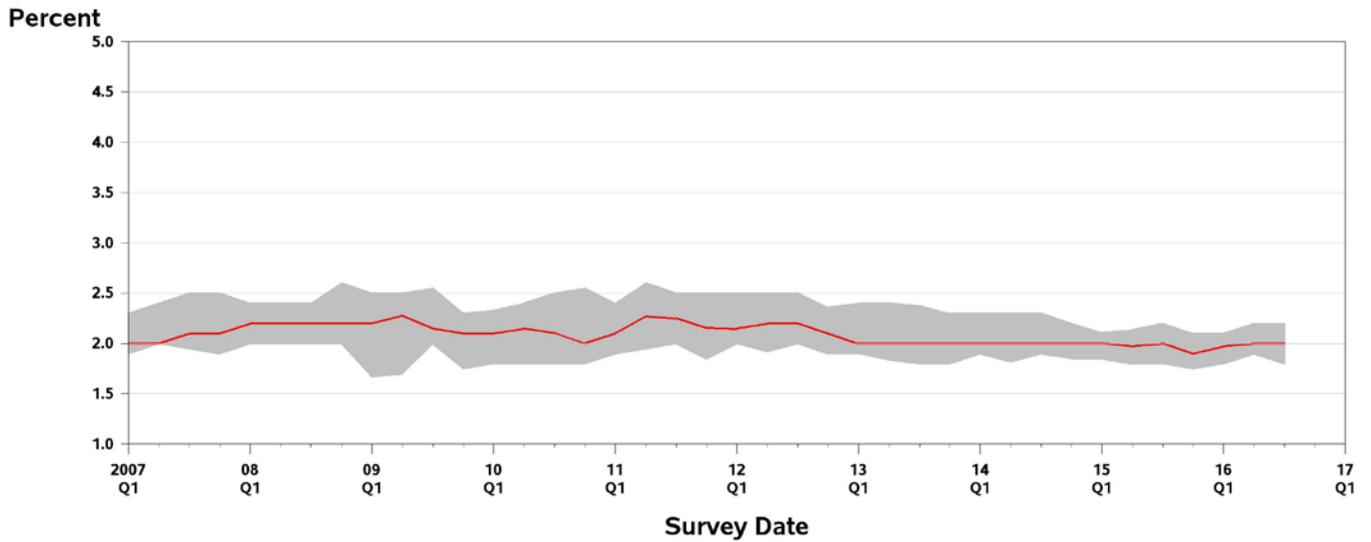
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2016:Q3	2.0	2.0	2.0	2.0	1.8	1.5	1.7	1.6
2016:Q4	2.1	2.2	2.1	2.1	1.9	1.9	1.8	1.6
2017:Q1	2.0	2.2	2.2	2.1	1.8	1.9	1.8	1.8
2017:Q2	2.1	2.2	2.2	2.2	1.9	2.0	1.9	1.8
2017:Q3	N.A.	2.3	N.A.	2.2	N.A.	2.0	N.A.	1.9
Q4/Q4 Annual Averages								
2016	1.5	1.6	2.2	2.2	1.4	1.4	1.8	1.8
2017	2.1	2.3	2.2	2.2	1.9	1.9	1.9	1.9
2018	2.3	2.3	2.2	2.2	2.0	2.0	2.0	2.0
Long-Term Annual Averages								
2016-2020	2.10	2.10	N.A.	N.A.	1.90	1.90	N.A.	N.A.
2016-2025	2.20	2.15	N.A.	N.A.	2.00	2.00	N.A.	N.A.

The charts below show the median projections (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 highlights a marginally lower level of the long-term projection for CPI inflation. The bottom panel depicts an unchanged 10-year forecast for PCE inflation.

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

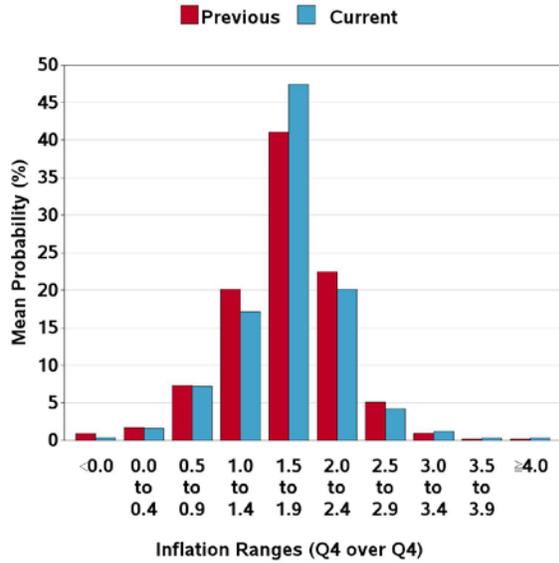


Projections for the 10-Year Annual-Average Rate of PCE Inflation
(Median and Interquartile Range)

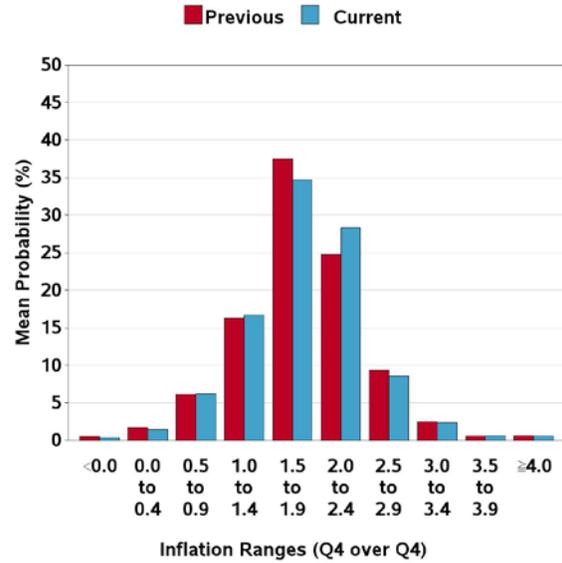


The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2016 and 2017 will fall into each of 10 ranges. For 2016, the forecasters assign a higher chance than they previously predicted that core PCE inflation will be between 1.5 to 1.9 percent.

Mean Probabilities for Core PCE Inflation in 2016



Mean Probabilities for Core PCE Inflation in 2017



Risk of a Negative Quarter Remains Low

The forecasters see only a small chance of a contraction in real GDP in any of the next five quarters. For the current quarter, they predict a 10.6 percent chance of negative growth, down from 14.6 percent in the survey of three months ago. The forecasters see a lower probability of a negative quarter in 2016 than they estimated three months ago. However, upward revisions characterize the risks in the first half of 2017.

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

<i>Quarterly data:</i>	<i>Previous</i>	<i>New</i>
2016: Q3	14.6	10.6
2016: Q4	15.9	15.6
2017: Q1	17.4	18.5
2017: Q2	18.5	19.0
2017: Q3	N.A.	21.0

Natural Rate of Unemployment Estimated at 4.8 Percent

In third-quarter surveys, we ask the forecasters to provide their estimates of the natural rate of unemployment — the rate of unemployment that occurs when the economy reaches equilibrium. The forecasters peg this rate at 4.80 percent. The table below shows, for each third-quarter survey since 1996, the percentage of respondents who use the natural rate in their forecasts and, for those who use it, the median estimate and the lowest and highest estimates. Fifty-six percent of the 32 forecasters who answered the question report that they use the natural rate in their forecasts. The lowest estimate is 4.50 percent, and the highest estimate is 5.50 percent.

Median Estimates of the Natural Rate of Unemployment

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

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**, **Matthew Hall**, **Daniil Manaenkov**, and **Ben Meiselman**, RSQE, University of Michigan; **Michael R. Englund**, Action Economics, LLC; **Michael Gapen**, Barclays Capital; **James Glassman**, JPMorgan Chase & Co.; **Jan Hatzius**, Goldman Sachs; **Keith Hembre**, Nuveen Asset Management; **Peter Hooper**, Deutsche Bank Securities, Inc.; **IHS Global Insight**; **Sam Kahan**, Kahan Consulting Ltd. (ACT Research LLC); **N. Karp**, BBVA Research USA; **Walter Kemmsies**, Moffatt & Nichol; **Jack Kleinhenz**, Kleinhenz & Associates, Inc.; **Thomas Lam**, RHB Securities Singapore Pte. Ltd.; **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; **Tom Porcelli**, RBC Capital Markets; **Arun Raha** and **Maira Trimble**, Eaton Corporation; **Martin A. Regalia**, U.S. Chamber of Commerce; **Philip Rothman**, East Carolina University; **Chris Rupkey**, Bank of Tokyo-Mitsubishi UFJ; **John Silvia**, Wells Fargo; **Allen Sinai**, Decision Economics, Inc.; **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; **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

	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2016	2017	2018	2019
						(YEAR-OVER-YEAR)			
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	2.6	2.3	2.3	2.3	2.1	1.5	2.3	2.2	2.2
2. GDP PRICE INDEX (PERCENT CHANGE)	1.6	1.8	1.8	2.1	1.8	1.3	1.9	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	4.2	4.2	4.1	4.4	4.5	2.8	4.2	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	1.5 183.7	1.4 169.8	1.3 159.9	1.4 164.9	1.3 159.4	1.7 204.6	1.3 161.1	N.A. N.A.	N.A. N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	4.8	4.7	4.7	4.6	4.6	4.8	4.6	4.6	4.7
6. 3-MONTH TREASURY BILL (PERCENT)	0.3	0.4	0.6	0.8	0.9	0.3	0.8	1.5	2.3
7. 10-YEAR TREASURY BOND (PERCENT)	1.6	1.8	2.0	2.1	2.3	1.8	2.2	2.9	3.3
	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2016	2017	2018	
						(Q4-OVER-Q4)			
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	2.0	2.2	2.2	2.2	2.3	1.6	2.3	2.3	
9. CORE CPI (ANNUAL RATE)	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	
10. PCE (ANNUAL RATE)	1.5	1.9	1.9	2.0	2.0	1.4	1.9	2.0	
11. CORE PCE (ANNUAL RATE)	1.6	1.6	1.8	1.8	1.9	1.8	1.9	2.0	

THE FIGURES ON EACH LINE ARE MEDIANS OF 40 INDIVIDUAL FORECASTERS.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.

SURVEY OF PROFESSIONAL FORECASTERS

Third Quarter 2016

Tables

Note: Data in these tables listed as "actual" are the data that were available to the forecasters when they were sent the survey questionnaire on July 29, 2016; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before August 9, 2016.

TABLE ONE
MAJOR MACROECONOMIC INDICATORS
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST				ACTUAL		FORECAST		
		2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL	2018 ANNUAL	2019 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	40	18438	18627	18819	19009	19214	19428	18037	18542	19320	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	40	111.24	111.69	112.20	112.70	113.29	113.80	110.00	111.43	113.55	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	20	N.A.	1525.2	1536.5	1549.1	1559.5	1586.8	1534.3	1521.8	1575.6	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	39	4.9	4.8	4.7	4.7	4.6	4.6	5.3	4.8	4.6	4.6	4.7
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	34	143980	144531	145041	145520	146015	146493	141833	144289	146222	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	34	103.8	104.3	104.7	105.2	105.8	106.4	105.2	104.3	106.2	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	36	1.16	1.19	1.22	1.24	1.27	1.29	1.11	1.18	1.29	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	37	0.26	0.30	0.40	0.57	0.75	0.90	0.05	0.31	0.82	1.55	2.25
9. AAA CORPORATE BOND YIELD (PERCENT)	29	3.59	3.45	3.60	3.80	4.00	4.17	3.89	3.65	4.10	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	29	4.67	4.50	4.65	4.85	5.01	5.18	5.00	4.80	5.10	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	39	1.75	1.60	1.80	1.97	2.10	2.30	2.14	1.75	2.20	2.86	3.30
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	38	16575	16682	16778	16873	16967	17056	16397	16643	17018	17400	17778
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	37	11482.8	11557.6	11630.6	11697.4	11769.9	11840.0	11214.7	11509.6	11802.9	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	2167.3	2176.2	2189.1	2205.9	2222.3	2237.6	2200.2	2177.9	2232.3	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	591.3	598.5	608.4	620.0	630.1	637.9	564.5	599.9	634.0	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	37	1118.1	1120.9	1123.4	1125.0	1126.6	1129.7	1113.8	1120.3	1129.4	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	37	1786.8	1791.3	1796.4	1801.1	1805.9	1811.0	1768.2	1791.6	1809.3	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	32	-8.1	25.5	34.1	37.4	42.7	41.1	84.0	23.3	37.1	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	36	-556.3	-571.6	-581.5	-600.1	-615.4	-627.3	-540.0	-569.9	-621.2	N.A.	N.A.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA. SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.

TABLE TWO
MAJOR MACROECONOMIC INDICATORS
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	2015	2016	2017	2018
		TO Q3 2016	TO Q4 2016	TO Q1 2017	TO Q2 2017	TO Q3 2017	TO 2016	TO 2017	TO 2018	TO 2019
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	40	4.2	4.2	4.1	4.4	4.5	2.8	4.2	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	40	1.6	1.8	1.8	2.1	1.8	1.3	1.9	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	20	2.3	3.0	3.3	2.7	7.2	-0.8	3.5	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	39	-0.1	-0.1	-0.0	-0.1	-0.0	-0.5	-0.2	-0.0	0.0
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	34	1.5	1.4	1.3	1.4	1.3	1.7	1.3	N.A.	N.A.
(AVG MONTHLY CHANGE)	34	183.7	169.8	159.9	164.9	159.4	204.6	161.1	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	34	1.9	1.7	2.0	2.0	2.4	-0.9	1.9	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	36	9.0	12.2	6.7	10.6	4.4	6.4	9.4	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	37	0.04	0.10	0.17	0.18	0.15	0.26	0.51	0.73	0.70
9. AAA CORPORATE BOND YIELD (PERCENT)	29	-0.14	0.15	0.20	0.20	0.17	-0.24	0.45	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	29	-0.17	0.15	0.20	0.16	0.17	-0.20	0.30	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	39	-0.15	0.20	0.17	0.13	0.20	-0.39	0.45	0.66	0.44
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	38	2.6	2.3	2.3	2.3	2.1	1.5	2.3	2.2	2.2
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	37	2.6	2.6	2.3	2.5	2.4	2.6	2.5	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	1.7	2.4	3.1	3.0	2.8	-1.0	2.5	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	5.0	6.8	7.8	6.7	5.1	6.3	5.7	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	37	1.0	0.9	0.6	0.6	1.1	0.6	0.8	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	37	1.0	1.2	1.0	1.1	1.1	1.3	1.0	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	32	33.6	8.5	3.3	5.4	-1.6	-60.7	13.8	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	36	-15.3	-9.9	-18.6	-15.4	-11.9	-29.9	-51.2	N.A.	N.A.

NOTE: FIGURES FOR UNEMPLOYMENT RATE, TREASURY BILL RATE, AAA CORPORATE BOND YIELD, BAA CORPORATE BOND YIELD, AND 10-YEAR TREASURY BOND YIELD ARE CHANGES IN THESE RATES, IN PERCENTAGE POINTS. FIGURES FOR CHANGE IN PRIVATE INVENTORIES AND NET EXPORTS ARE CHANGES IN BILLIONS OF CHAIN-WEIGHTED DOLLARS. ALL OTHERS ARE PERCENTAGE CHANGES AT ANNUAL RATES.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA. SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.

TABLE THREE
 MAJOR PRICE INDICATORS
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST(Q/Q)						ACTUAL	FORECAST(Q4/Q4)		
		2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL	2018 ANNUAL	
1. CONSUMER PRICE INDEX (ANNUAL RATE)	39	2.5	2.0	2.2	2.2	2.2	2.3	0.4	1.6	2.3	2.3	
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	37	2.1	2.0	2.1	2.1	2.2	2.2	2.0	2.2	2.2	2.2	
3. PCE PRICE INDEX (ANNUAL RATE)	36	1.9	1.5	1.9	1.9	2.0	2.0	0.4	1.4	1.9	2.0	
4. CORE PCE PRICE INDEX (ANNUAL RATE)	36	1.7	1.6	1.6	1.8	1.8	1.9	1.4	1.8	1.9	2.0	

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA. SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.

TABLE FOUR
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017
	TO	TO	TO	TO	TO
	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017
NUMBER OF FORECASTERS					
10 OR LESS	24	14	6	7	7
11 TO 20	7	14	17	16	12
21 TO 30	3	5	9	8	10
31 TO 40	0	1	2	1	3
41 TO 50	0	0	0	1	1
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	7	7
MEAN AND MEDIAN					
MEDIAN PROBABILITY	10.00	15.00	18.50	20.00	20.00
MEAN PROBABILITY	10.58	15.64	18.52	19.03	20.98

NOTE: TOTAL NUMBER OF FORECASTERS REPORTING IS 34.
SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.

TABLE FIVE
MEAN PROBABILITIES

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

	2016	2017	2018	2019
9.0 PERCENT OR MORE	0.01	0.06	0.18	0.24
8.0 TO 8.9 PERCENT	0.01	0.07	0.34	0.53
7.5 TO 7.9 PERCENT	0.02	0.13	0.46	0.62
7.0 TO 7.4 PERCENT	0.05	0.37	1.04	1.19
6.5 TO 6.9 PERCENT	0.27	0.83	1.90	2.35
6.0 TO 6.4 PERCENT	0.56	2.05	3.36	4.18
5.5 TO 5.9 PERCENT	2.38	5.71	8.69	11.12
5.0 TO 5.4 PERCENT	21.65	23.13	27.59	30.29
4.0 TO 4.9 PERCENT	71.79	61.60	46.32	38.75
LESS THAN 4.0 PERCENT	3.27	6.06	10.13	10.72

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

	2015-2016	2016-2017	2017-2018	2018-2019
6.0 OR MORE	0.01	0.11	0.27	0.29
5.0 TO 5.9	0.04	0.35	0.94	1.10
4.0 TO 4.9	0.49	2.74	3.66	4.33
3.0 TO 3.9	2.59	9.74	12.73	14.09
2.0 TO 2.9	20.44	42.98	36.54	34.67
1.0 TO 1.9	59.66	30.79	28.32	25.27
0.0 TO 0.9	13.90	8.54	11.25	13.09
-1.0 TO -0.1	2.21	3.23	3.94	4.37
-2.0 TO -1.1	0.46	1.05	1.55	1.84
-3.0 TO -2.1	0.16	0.37	0.62	0.69
LESS THAN -3.0	0.05	0.10	0.18	0.26

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

	2015-2016	2016-2017
4.0 OR MORE	0.10	0.51
3.5 TO 3.9	0.37	0.73
3.0 TO 3.4	0.64	2.09
2.5 TO 2.9	2.65	8.52
2.0 TO 2.4	9.88	29.36
1.5 TO 1.9	28.62	35.12
1.0 TO 1.4	44.36	17.08
0.5 TO 0.9	10.53	4.47
0.0 TO 0.4	2.58	1.64
WILL DECLINE	0.29	0.47

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.

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

MEAN PROBABILITY ATTACHED TO CORE CPI INFLATION:

	15Q4 TO 16Q4	16Q4 TO 17Q4
4 PERCENT OR MORE	0.38	0.76
3.5 TO 3.9 PERCENT	0.51	1.02
3.0 TO 3.4 PERCENT	1.95	4.82
2.5 TO 2.9 PERCENT	12.89	15.43
2.0 TO 2.4 PERCENT	48.77	39.84
1.5 TO 1.9 PERCENT	25.46	23.77
1.0 TO 1.4 PERCENT	7.31	10.35
0.5 TO 0.9 PERCENT	2.02	2.77
0.0 TO 0.4 PERCENT	0.46	0.84
WILL DECLINE	0.25	0.41

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	15Q4 TO 16Q4	16Q4 TO 17Q4
4 PERCENT OR MORE	0.31	0.55
3.5 TO 3.9 PERCENT	0.34	0.67
3.0 TO 3.4 PERCENT	1.23	2.36
2.5 TO 2.9 PERCENT	4.20	8.63
2.0 TO 2.4 PERCENT	20.13	28.33
1.5 TO 1.9 PERCENT	47.44	34.72
1.0 TO 1.4 PERCENT	17.15	16.66
0.5 TO 0.9 PERCENT	7.21	6.23
0.0 TO 0.4 PERCENT	1.63	1.44
WILL DECLINE	0.36	0.39

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.
 SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.

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

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2016-2020

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CPI INFLATION RATE		PCE INFLATION RATE	
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MINIMUM	1.41	MINIMUM	1.28
LOWER QUARTILE	1.90	LOWER QUARTILE	1.70
MEDIAN	2.10	MEDIAN	1.90
UPPER QUARTILE	2.30	UPPER QUARTILE	2.10
MAXIMUM	3.40	MAXIMUM	2.60
MEAN	2.12	MEAN	1.90
STD. DEVIATION	0.38	STD. DEVIATION	0.33
N	35	N	32
MISSING	5	MISSING	8

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2016-2025

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CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.41	MINIMUM	1.28
LOWER QUARTILE	2.00	LOWER QUARTILE	1.80
MEDIAN	2.15	MEDIAN	2.00
UPPER QUARTILE	2.40	UPPER QUARTILE	2.20
MAXIMUM	3.50	MAXIMUM	2.99
MEAN	2.21	MEAN	2.00
STD. DEVIATION	0.37	STD. DEVIATION	0.33
N	34	N	31
MISSING	6	MISSING	9

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2016.