



# SURVEY OF PROFESSIONAL FORECASTERS

Release Date: August 14, 2015

## THIRD QUARTER 2015

### *Forecasters See Slightly Slower Growth as the Unemployment Outlook Holds Steady*

The outlook for growth in the U.S. economy over the next four years looks slightly lower from that of three months ago, according to 42 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The panel expects real GDP to grow at an annual rate of 2.7 percent this quarter and 2.8 percent next quarter. On an annual-average over annual-average basis, the forecasters see real GDP growing 2.3 percent in 2015, down from the previous estimate of 2.4 percent. The forecasters predict real GDP will grow 2.8 percent in 2016, 2.6 percent in 2017, and 2.4 percent in 2018. The forecasts for 2017 and 2018 are slightly slower than the previous estimates.

The outlook for the labor market remains nearly unchanged. The forecasters predict the unemployment rate will be an annual average of 5.3 percent in 2015, before falling to 5.0 percent in 2016, 4.8 percent in 2017, and 4.7 percent in 2018. These projections are nearly the same as those of the previous survey.

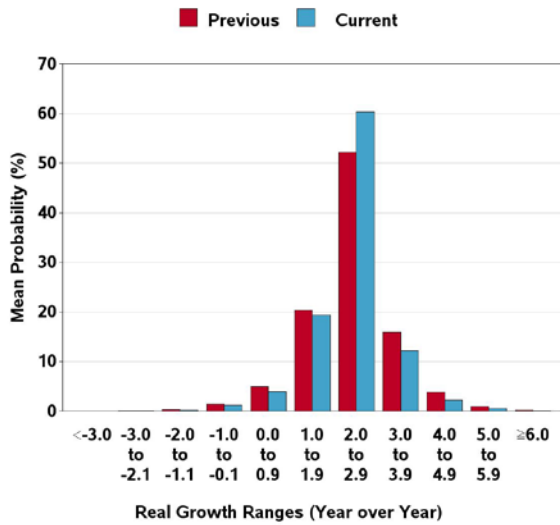
On the jobs front, the forecasters have revised upward their estimates for job gains in 2015 and 2016. The forecasters' projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 244,200 in 2015, up slightly from the previous estimate of 243,900, and 200,500 in 2016, up from the previous estimate of 180,100. (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*

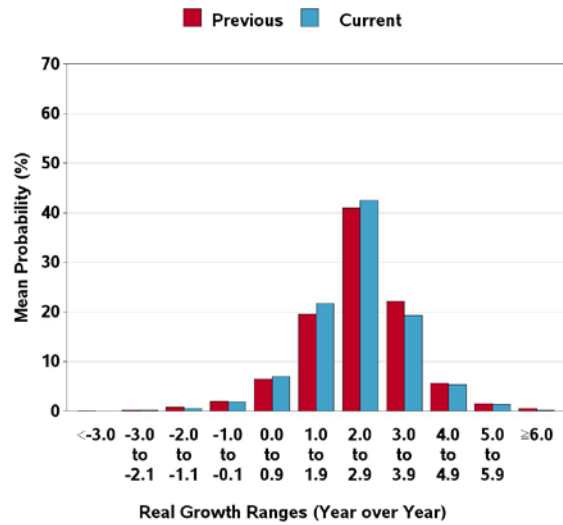
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2015:Q3	3.1	2.7	5.3	5.3	223.3	222.6
2015:Q4	2.9	2.8	5.2	5.1	223.0	220.4
2016:Q1	2.4	2.8	5.1	5.1	177.0	185.1
2016:Q2	3.0	2.8	5.0	5.0	178.3	191.3
2016:Q3	N.A.	2.7	N.A.	4.9	N.A.	189.5
Annual data (projections are based on annual-average levels):						
2015	2.4	2.3	5.4	5.3	243.9	244.2
2016	2.8	2.8	5.0	5.0	180.1	200.5
2017	2.8	2.6	4.8	4.8	N.A.	N.A.
2018	2.5	2.4	4.8	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 2015, the panelists are more certain now than they were in the previous survey that growth will average between 2.0 and 2.9 percent. The probability estimates for growth in 2016, 2017, and 2018 are about the same now as they were in the previous survey.

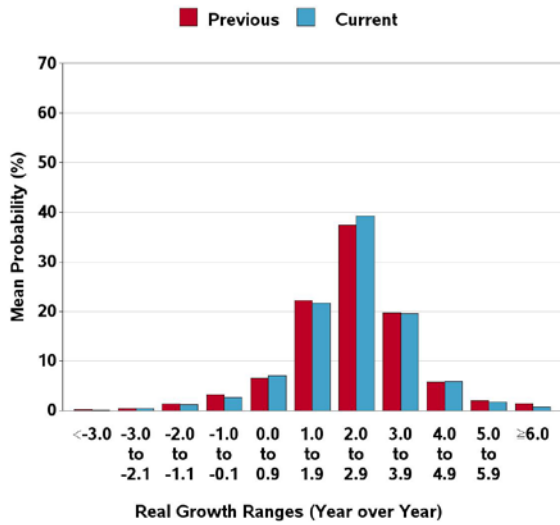
Mean Probabilities for Real GDP Growth in 2015



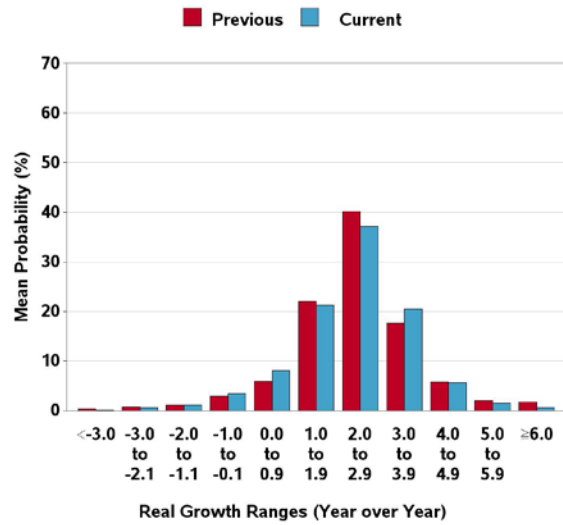
Mean Probabilities for Real GDP Growth in 2016



Mean Probabilities for Real GDP Growth in 2017

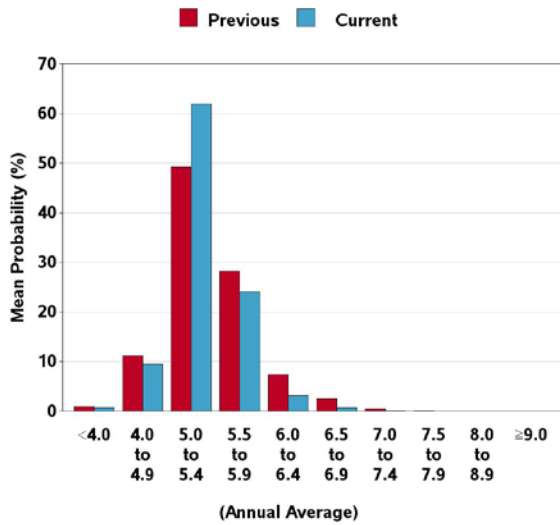


Mean Probabilities for Real GDP Growth in 2018

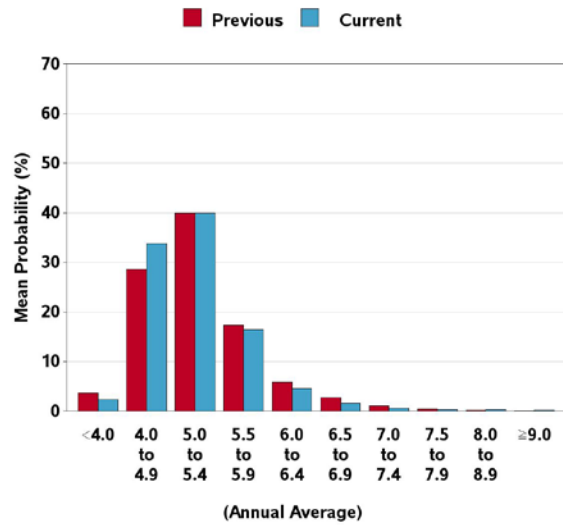


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The forecasters are more certain now than they were three months ago that unemployment in 2015 will average between 5.0 and 5.4 percent. The probability estimates for unemployment in 2016, 2017, and 2018 are mostly unchanged from the estimates of three months ago.

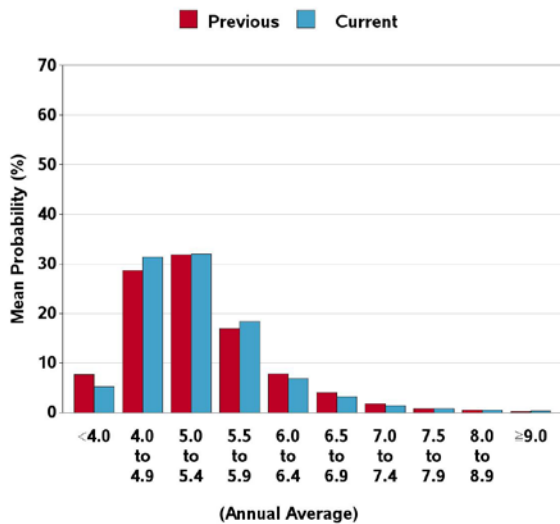
Mean Probabilities for Unemployment Rate in 2015



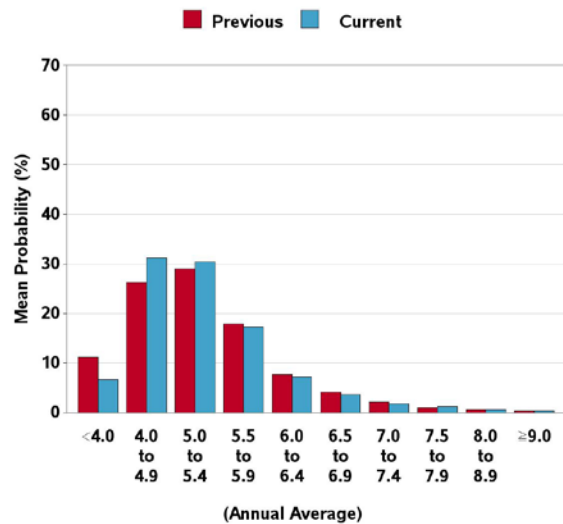
Mean Probabilities for Unemployment Rate in 2016



Mean Probabilities for Unemployment Rate in 2017



Mean Probabilities for Unemployment Rate in 2018



***Forecasters See Little Change in Near-Term and Long-Term Inflation Outlook***

The forecasters expect current-quarter headline CPI inflation to average 2.0 percent, the same as the last survey's estimate. Similarly, the forecasters made no change to their estimates for current-quarter headline PCE inflation of 1.7 percent.

The forecasters saw little reason to change their projections for headline and core measures of CPI and PCE inflation over the next two years. Measured on a fourth-quarter over fourth-quarter basis, headline CPI inflation is expected to average 0.8 percent in 2015, up slightly from 0.7 percent in the last survey, and 2.1 percent in 2016, unchanged from the previous estimate. Fourth-quarter over fourth-quarter headline PCE inflation is expected to average 0.8 percent in 2015, unchanged from the last survey, and 1.8 percent in 2016, down only 0.1 percentage point from the previous estimate.

Core PCE inflation will average 1.5 percent this year (up from 1.4 percent in the last survey) and 1.8 percent in 2016 (up from 1.7 percent). The forecasters continue to see core PCE inflation averaging 1.9 percent in 2017.

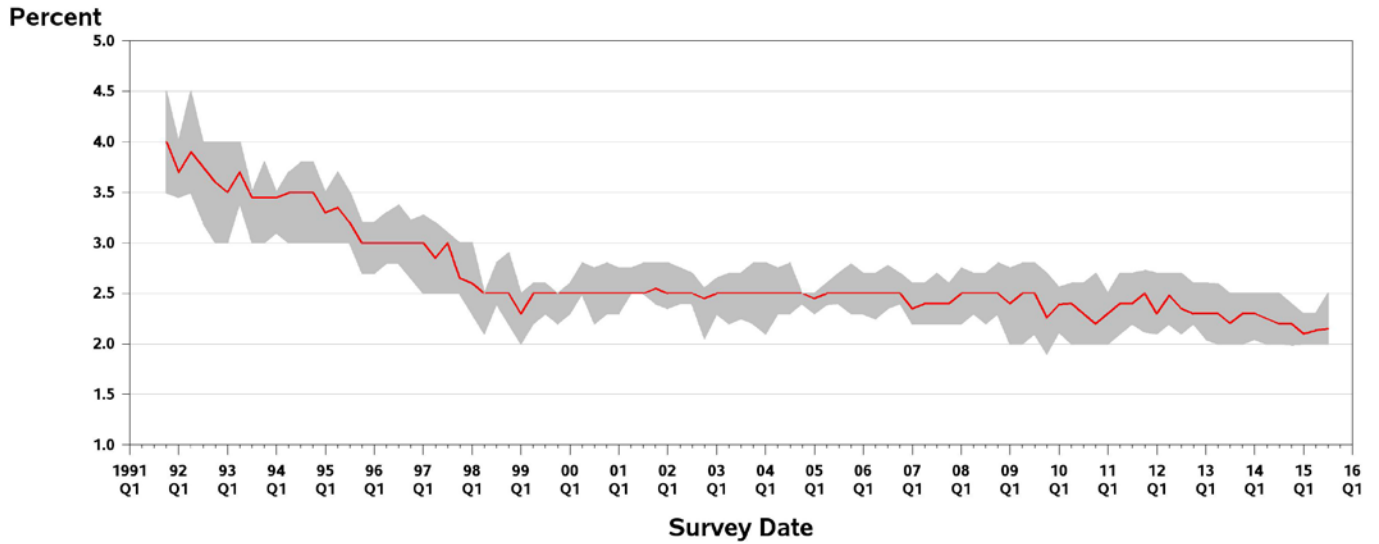
Over the next 10 years, 2015 to 2024, the forecasters expect headline CPI inflation to average 2.15 percent at an annual rate. The corresponding estimate for 10-year annual-average PCE inflation is 2.00 percent. Both estimates are nearly the same as those of the previous survey.

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

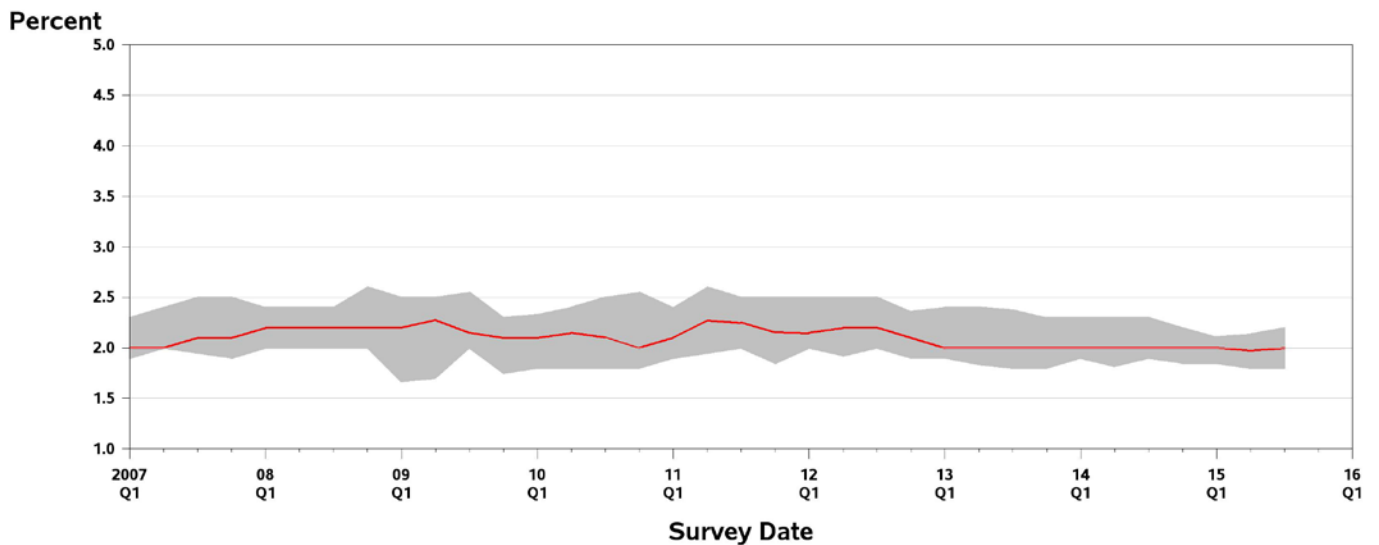
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
<b>Quarterly</b>								
2015:Q3	2.0	2.0	1.8	1.9	1.7	1.7	1.5	1.6
2015:Q4	1.9	1.8	1.9	1.9	1.7	1.4	1.6	1.6
2016:Q1	1.9	2.0	1.9	2.0	1.7	1.7	1.7	1.7
2016:Q2	2.1	2.2	2.0	2.0	1.9	1.9	1.7	1.8
2016:Q3	N.A.	2.2	N.A.	2.1	N.A.	1.9	N.A.	1.8
<b>Q4/Q4 Annual Averages</b>								
2015	0.7	0.8	1.8	2.0	0.8	0.8	1.4	1.5
2016	2.1	2.1	2.0	2.0	1.9	1.8	1.7	1.8
2017	2.3	2.3	2.1	2.1	1.9	1.9	1.9	1.9
<b>Long-Term Annual Averages</b>								
2015-2019	2.00	2.00	N.A.	N.A.	1.80	1.80	N.A.	N.A.
2015-2024	2.14	2.15	N.A.	N.A.	1.98	2.00	N.A.	N.A.

The charts below show the median projections (the red line) and the associated interquartile ranges (the gray area around the red line) for the projections for 10-year annual-average CPI and PCE inflation. The top panel shows the little changed estimate for 10-year CPI inflation, at 2.15 percent. The bottom panel highlights the nearly unchanged 10-year forecast for PCE inflation, at 2.00 percent.

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

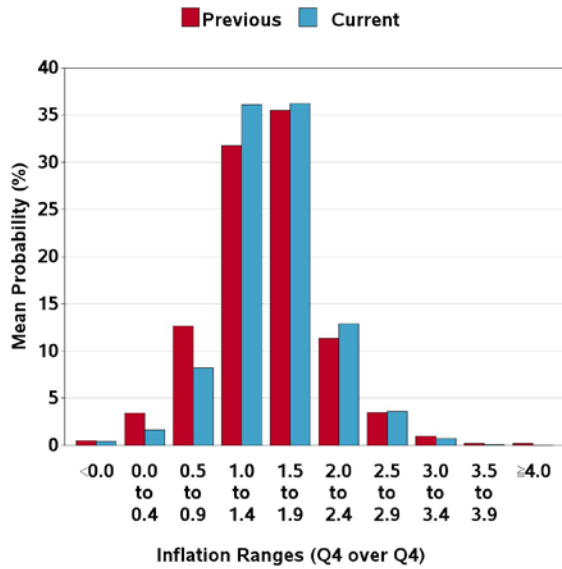


### Projections for the 10-Year Annual-Average Rate of PCE Inflation (Median and Interquartile Range)

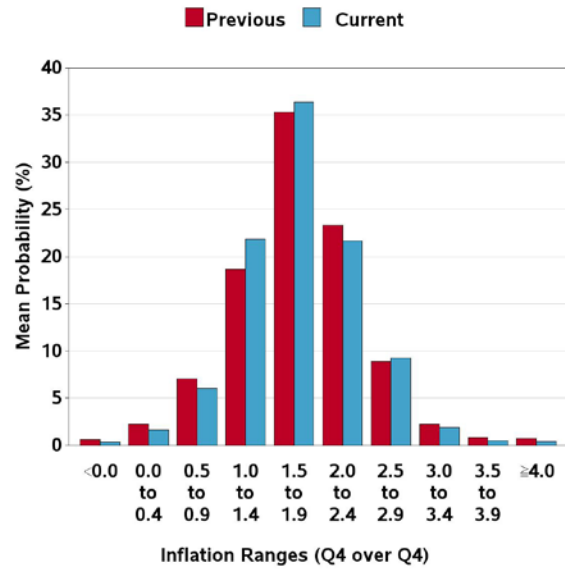


The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2015 and 2016 will fall into each of 10 ranges. For both years, the forecasters assign a higher chance than they previously predicted that core PCE inflation will be between 1.0 to 1.9 percent.

Mean Probabilities for Core PCE Inflation in 2015



Mean Probabilities for Core PCE Inflation in 2016



**Low Risk of a Negative Quarter**

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 7.5 percent chance of negative growth, down from 11.0 percent in the survey of three months ago.

Risk of a Negative Quarter (%)  
Survey Means

Quarterly data:	Previous	New
2015: Q3	11.0	7.5
2015: Q4	12.0	10.0
2016: Q1	14.8	13.7
2016: Q2	15.2	13.0
2016: Q3	N.A.	13.6

### ***Natural Rate of Unemployment Estimated at 5.0 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 5.0 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. Sixty-two percent of the 37 forecasters who answered the question report that they use the natural rate in their forecasts. The lowest estimate is 4.25 percent, and the highest estimate is 5.8 percent.

We adjusted the formula for the “Percentage Who Use the Natural Rate” to *exclude* those who said they use NAIRU but did not provide an estimate. We then used the new formula to recompute the “Percentage Who Use the Natural Rate” for all surveys since 1996. The reformulation affects the surveys in 1998:Q3, 2005:Q3, and 2011:Q3. The adjusted numbers appear in the table below (with the pre-adjusted numbers in brackets).

#### *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 (47)	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 (51)	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 (44)	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

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; **David Crowe**, National Association of Home Builders; **Nathaniel Curtis**, Navigant Consulting; **Gregory Daco**, Oxford Economics USA, Inc.; **Rajeev Dhawan**, Georgia State University; **Michael R. Englund**, Action Economics, LLC; **Michael Gapen**, Barclays Capital; **James Glassman**, JPMorgan Chase & Co.; **Matthew Hall**, **Daniil Manaenkov**, and **Ben Meiselman**, RSQE, University of Michigan; **Jan Hatzius**, Goldman Sachs; **Keith Hembre**, Nuveen Asset Management; **Peter Hooper**, Deutsche Bank Securities, Inc.; **IHS Global Insight**; **Fred Joutz**, Benchmark Forecasts and Research Program on Forecasting, George Washington University; **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**, 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; **Sean M. Snaith, Ph.D.**, University of Central Florida; **Neal Soss**, Credit Suisse; **Stephen Stanley**, Amherst Pierpont Securities; **Charles Steindel**, Ramapo College of New Jersey; **Susan M. Sterne**, Economic Analysis Associates, Inc.; **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

	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2015	2016	2017	2018
						(YEAR-OVER-YEAR)			
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	2.7	2.8	2.8	2.8	2.7	2.3	2.8	2.6	2.4
2. GDP PRICE INDEX (PERCENT CHANGE)	1.8	1.6	1.8	1.9	1.7	1.1	1.8	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	4.4	4.4	4.7	5.0	4.7	3.4	4.6	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	1.9 222.6	1.9 220.4	1.6 185.1	1.6 191.3	1.6 189.5	2.1 244.2	1.7 200.5	N.A. N.A.	N.A. N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	5.3	5.1	5.1	5.0	4.9	5.3	5.0	4.8	4.7
6. 3-MONTH TREASURY BILL (PERCENT)	0.1	0.3	0.5	0.8	1.1	0.1	1.0	2.1	2.5
7. 10-YEAR TREASURY BOND (PERCENT)	2.4	2.5	2.7	2.9	2.9	2.3	2.9	3.4	3.8
	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2015	2016	2017	
						(Q4-OVER-Q4)			
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	2.0	1.8	2.0	2.2	2.2	0.8	2.1	2.3	
9. CORE CPI (ANNUAL RATE)	1.9	1.9	2.0	2.0	2.1	2.0	2.0	2.1	
10. PCE (ANNUAL RATE)	1.7	1.4	1.7	1.9	1.9	0.8	1.8	1.9	
11. CORE PCE (ANNUAL RATE)	1.6	1.6	1.7	1.8	1.8	1.5	1.8	1.9	

THE FIGURES ON EACH LINE ARE MEDIANS OF 42 INDIVIDUAL FORECASTERS.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2015.

# **SURVEY OF PROFESSIONAL FORECASTERS**

**Third Quarter 2015**

**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 30; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before August 11, 2015.

TABLE ONE  
MAJOR MACROECONOMIC INDICATORS  
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST			ACTUAL		FORECAST			
		2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2014 ANNUAL	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL	2018 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	40	17841	18032	18227	18437	18663	18878	17348	17940	18767	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	41	109.66	110.14	110.58	111.07	111.60	112.08	108.69	109.89	111.83	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	18	N.A.	1545.2	1572.1	1583.6	1619.7	1649.7	1559.1	1540.3	1633.3	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	41	5.4	5.3	5.1	5.1	5.0	4.9	6.2	5.3	5.0	4.8	4.7
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	37	141609	142277	142938	143494	144068	144636	139023	141954	144360	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	36	107.0	107.6	108.4	109.1	109.8	110.7	105.7	107.6	110.2	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	38	1.14	1.17	1.22	1.24	1.27	1.29	1.00	1.12	1.28	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	38	0.02	0.09	0.31	0.53	0.78	1.07	0.03	0.11	1.00	2.05	2.50
9. AAA CORPORATE BOND YIELD (PERCENT)	27	3.90	4.12	4.19	4.40	4.57	4.67	4.16	3.94	4.60	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	28	4.83	5.15	5.21	5.41	5.50	5.62	4.85	4.91	5.56	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	40	2.17	2.35	2.54	2.70	2.87	2.90	2.54	2.26	2.88	3.41	3.78
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	40	16270	16380	16494	16608	16722	16835	15962	16329	16780	17224	17636
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	37	11161.7	11245.6	11331.5	11413.0	11497.2	11572.2	10875.7	11204.9	11538.0	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	2185.3	2209.4	2237.9	2267.3	2298.8	2327.2	2148.3	2205.6	2315.9	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	520.7	530.8	542.0	553.4	561.4	570.5	486.4	526.5	565.7	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	1108.3	1109.7	1111.2	1112.1	1112.2	1115.2	1116.3	1109.9	1113.6	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	1734.3	1740.3	1745.5	1752.7	1759.8	1766.5	1720.8	1736.8	1763.8	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	35	110.0	87.0	75.0	70.0	70.0	67.0	68.0	96.0	69.5	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	36	-536.3	-540.8	-552.6	-564.8	-574.4	-581.8	-442.5	-542.7	-581.9	N.A.	N.A.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA. SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2015.

TABLE TWO  
MAJOR MACROECONOMIC INDICATORS  
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	2014	2015	2016	2017
		TO Q3 2015	TO Q4 2015	TO Q1 2016	TO Q2 2016	TO Q3 2016	TO 2015	TO 2016	TO 2017	TO 2018
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	40	4.4	4.4	4.7	5.0	4.7	3.4	4.6	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	41	1.8	1.6	1.8	1.9	1.7	1.1	1.8	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	18	4.6	7.2	3.0	9.4	7.6	-1.2	6.0	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	41	-0.1	-0.2	0.0	-0.1	-0.1	-0.9	-0.4	-0.1	-0.1
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	37	1.9	1.9	1.6	1.6	1.6	2.1	1.7	N.A.	N.A.
(AVG MONTHLY CHANGE)	37	222.6	220.4	185.1	191.3	189.5	244.2	200.5	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	36	2.3	2.8	2.8	2.7	3.1	1.8	2.4	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	38	8.8	17.5	6.7	11.4	7.6	12.3	13.6	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	38	0.07	0.22	0.22	0.25	0.29	0.08	0.89	1.06	0.45
9. AAA CORPORATE BOND YIELD (PERCENT)	27	0.22	0.07	0.21	0.17	0.10	-0.22	0.66	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	28	0.32	0.05	0.21	0.09	0.12	0.06	0.65	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	40	0.18	0.19	0.17	0.17	0.03	-0.28	0.62	0.53	0.37
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	40	2.7	2.8	2.8	2.8	2.7	2.3	2.8	2.6	2.4
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	37	3.0	3.1	2.9	3.0	2.6	3.0	3.0	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	4.5	5.3	5.4	5.7	5.0	2.7	5.0	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	36	8.0	8.7	8.7	5.9	6.7	8.3	7.4	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	0.5	0.5	0.3	0.0	1.1	-0.6	0.3	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	34	1.4	1.2	1.7	1.6	1.5	0.9	1.6	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	35	-23.0	-12.0	-5.0	0.0	-3.0	28.0	-26.5	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	36	-4.5	-11.9	-12.2	-9.6	-7.4	-100.2	-39.2	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 2015.

TABLE THREE  
 MAJOR PRICE INDICATORS  
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST(Q/Q)					ACTUAL	FORECAST(Q4/Q4)		
		2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2014 ANNUAL	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL
1. CONSUMER PRICE INDEX (ANNUAL RATE)	40	3.0	2.0	1.8	2.0	2.2	2.2	1.2	0.8	2.1	2.3
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	39	2.5	1.9	1.9	2.0	2.0	2.1	1.7	2.0	2.0	2.1
3. PCE PRICE INDEX (ANNUAL RATE)	37	2.2	1.7	1.4	1.7	1.9	1.9	1.1	0.8	1.8	1.9
4. CORE PCE PRICE INDEX (ANNUAL RATE)	36	1.8	1.6	1.6	1.7	1.8	1.8	1.4	1.5	1.8	1.9

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA. SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2015.

TABLE FOUR  
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
	TO Q3 2015	TO Q4 2015	TO Q1 2016	TO Q2 2016	TO Q3 2016
NUMBER OF FORECASTERS					
10 OR LESS	33	28	18	18	17
11 TO 20	4	7	15	15	14
21 TO 30	0	2	4	4	6
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	5	5	5	5	5
MEAN AND MEDIAN					
MEDIAN PROBABILITY	8.00	10.00	12.00	13.00	13.00
MEAN PROBABILITY	7.48	10.04	13.68	12.96	13.56

NOTE: TOTAL NUMBER OF FORECASTERS REPORTING IS 37.  
SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2015.

TABLE FIVE  
MEAN PROBABILITIES

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

	2015	2016	2017	2018
9.0 PERCENT OR MORE	0.00	0.22	0.29	0.28
8.0 TO 8.9 PERCENT	0.00	0.25	0.46	0.57
7.5 TO 7.9 PERCENT	0.00	0.30	0.77	1.16
7.0 TO 7.4 PERCENT	0.12	0.61	1.38	1.80
6.5 TO 6.9 PERCENT	0.67	1.60	3.25	3.64
6.0 TO 6.4 PERCENT	3.08	4.54	6.88	7.13
5.5 TO 5.9 PERCENT	24.08	16.43	18.38	17.28
5.0 TO 5.4 PERCENT	61.94	39.91	31.96	30.32
4.0 TO 4.9 PERCENT	9.46	33.80	31.42	31.20
LESS THAN 4.0 PERCENT	0.66	2.36	5.21	6.62

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

	2014-2015	2015-2016	2016-2017	2017-2018
6.0 OR MORE	0.06	0.24	0.67	0.57
5.0 TO 5.9	0.48	1.30	1.70	1.51
4.0 TO 4.9	2.20	5.36	5.85	5.64
3.0 TO 3.9	12.19	19.25	19.55	20.50
2.0 TO 2.9	60.34	42.44	39.20	37.11
1.0 TO 1.9	19.32	21.74	21.65	21.31
0.0 TO 0.9	3.91	6.95	7.10	8.10
-1.0 TO -0.1	1.22	1.93	2.63	3.41
-2.0 TO -1.1	0.16	0.54	1.22	1.15
-3.0 TO -2.1	0.11	0.22	0.36	0.59
LESS THAN -3.0	0.00	0.03	0.08	0.11

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

	2014-2015	2015-2016
4.0 OR MORE	0.00	0.07
3.5 TO 3.9	0.00	0.46
3.0 TO 3.4	0.32	2.11
2.5 TO 2.9	1.92	8.09
2.0 TO 2.4	7.25	22.83
1.5 TO 1.9	16.40	35.91
1.0 TO 1.4	40.90	20.64
0.5 TO 0.9	25.74	7.41
0.0 TO 0.4	6.76	1.96
WILL DECLINE	0.70	0.52

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2015.

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

MEAN PROBABILITY ATTACHED TO CORE CPI INFLATION:

	14Q4 TO 15Q4	15Q4 TO 16Q4
4 PERCENT OR MORE	0.03	0.51
3.5 TO 3.9 PERCENT	0.14	1.03
3.0 TO 3.4 PERCENT	1.66	5.15
2.5 TO 2.9 PERCENT	8.95	14.66
2.0 TO 2.4 PERCENT	33.50	33.11
1.5 TO 1.9 PERCENT	37.15	30.03
1.0 TO 1.4 PERCENT	12.07	10.18
0.5 TO 0.9 PERCENT	4.56	3.27
0.0 TO 0.4 PERCENT	1.42	1.60
WILL DECLINE	0.51	0.46

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	14Q4 TO 15Q4	15Q4 TO 16Q4
4 PERCENT OR MORE	0.06	0.40
3.5 TO 3.9 PERCENT	0.10	0.53
3.0 TO 3.4 PERCENT	0.74	1.88
2.5 TO 2.9 PERCENT	3.60	9.25
2.0 TO 2.4 PERCENT	12.89	21.70
1.5 TO 1.9 PERCENT	36.24	36.36
1.0 TO 1.4 PERCENT	36.10	21.85
0.5 TO 0.9 PERCENT	8.20	6.03
0.0 TO 0.4 PERCENT	1.65	1.66
WILL DECLINE	0.43	0.34

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
 SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2015.



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

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2015-2019

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CPI INFLATION RATE		PCE INFLATION RATE	
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MINIMUM	1.50	MINIMUM	1.20
LOWER QUARTILE	1.90	LOWER QUARTILE	1.60
MEDIAN	2.00	MEDIAN	1.80
UPPER QUARTILE	2.20	UPPER QUARTILE	2.00
MAXIMUM	2.80	MAXIMUM	2.50
MEAN	2.04	MEAN	1.84
STD. DEVIATION	0.29	STD. DEVIATION	0.30
N	36	N	34
MISSING	6	MISSING	8

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2015-2024

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CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.80	MINIMUM	1.55
LOWER QUARTILE	2.00	LOWER QUARTILE	1.80
MEDIAN	2.15	MEDIAN	2.00
UPPER QUARTILE	2.50	UPPER QUARTILE	2.20
MAXIMUM	3.00	MAXIMUM	2.80
MEAN	2.24	MEAN	2.03
STD. DEVIATION	0.29	STD. DEVIATION	0.28
N	36	N	34
MISSING	6	MISSING	8

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, THIRD QUARTER 2015.