



# SURVEY OF PROFESSIONAL FORECASTERS

Release Date: November 13, 2015

## FOURTH QUARTER 2015

### *Forecasters Shave Their Growth Estimates for 2016 and 2017*

Growth in real GDP in 2016 and 2017 looks a little slower now than it did three months ago, according to 45 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The forecasters currently see growth in the annual-average level of real GDP at 2.6 percent in 2016 and 2.5 percent in 2017. These current estimates represent downward revisions to the outlook of three months ago, when the forecasters thought 2016 growth would be 2.8 percent and 2017 growth would be 2.6 percent. Notably, the forecasters have raised their growth estimates for 2018. They now see real GDP growing 2.8 percent in 2018, up from the previous estimate of 2.4 percent.

A slightly improved outlook for the unemployment rate accompanies the outlook for growth. The forecasters predict the unemployment rate will be an annual average of 5.3 percent in 2015, before falling to 4.8 percent in 2016, 4.7 percent in 2017, and 4.7 percent in 2018. The projections for 2016 and 2017 are below those of the last survey.

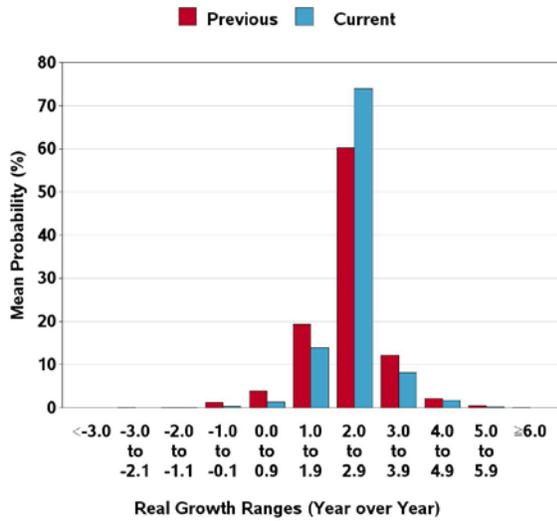
On the jobs front, the panelists have revised upward their estimates for job gains in the first three quarters of 2016. The forecasters see nonfarm payroll employment growing at a rate of 201,500 jobs per month this quarter and 188,200 jobs per month next quarter. The forecasters' projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 241,800 in 2015 and 197,000 in 2016. (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*

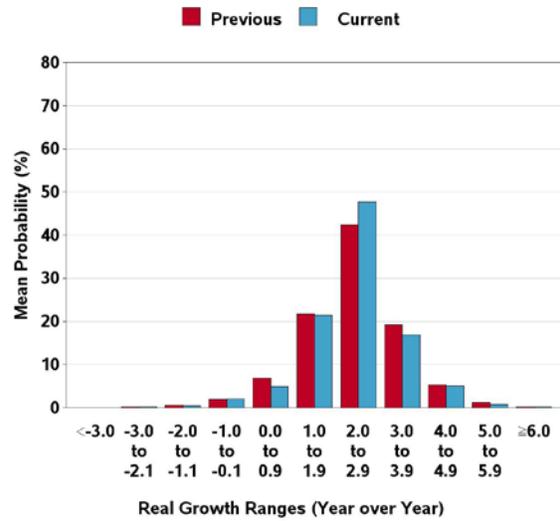
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2015:Q4	2.8	2.6	5.1	5.0	220.4	201.5
2016:Q1	2.8	2.5	5.1	4.9	185.1	188.2
2016:Q2	2.8	2.6	5.0	4.8	191.3	193.5
2016:Q3	2.7	2.9	4.9	4.8	189.5	192.0
2016:Q4	N.A.	2.4	N.A.	4.7	N.A.	181.2
Annual data (projections are based on annual-average levels):						
2015	2.3	2.4	5.3	5.3	244.2	241.8
2016	2.8	2.6	5.0	4.8	200.5	197.0
2017	2.6	2.5	4.8	4.7	N.A.	N.A.
2018	2.4	2.8	4.7	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. The charts show that the estimates of uncertainty about growth in 2016, 2017, and 2018 are similar to those of the previous survey.

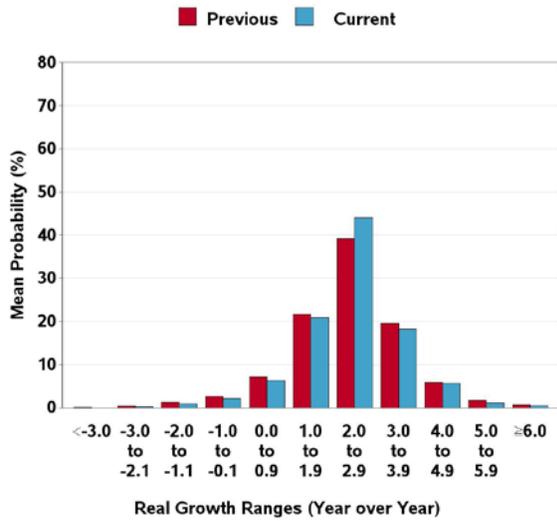
Mean Probabilities for Real GDP Growth in 2015



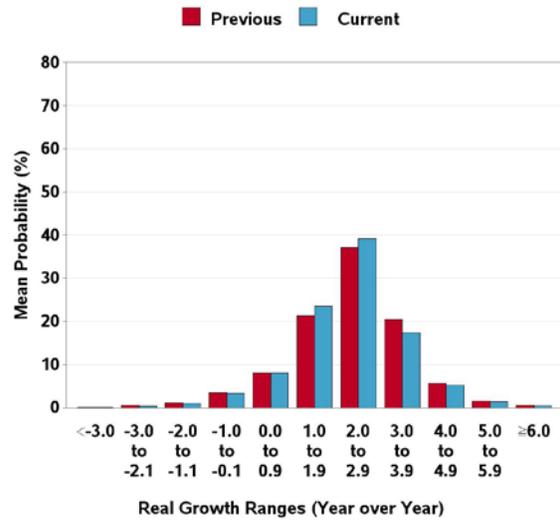
Mean Probabilities for Real GDP Growth in 2016



Mean Probabilities for Real GDP Growth in 2017

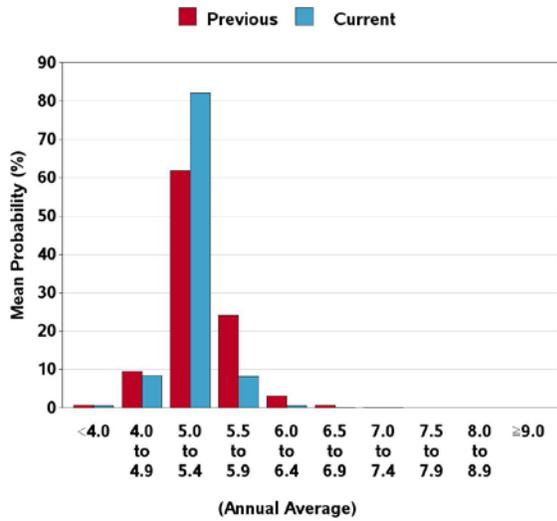


Mean Probabilities for Real GDP Growth in 2018

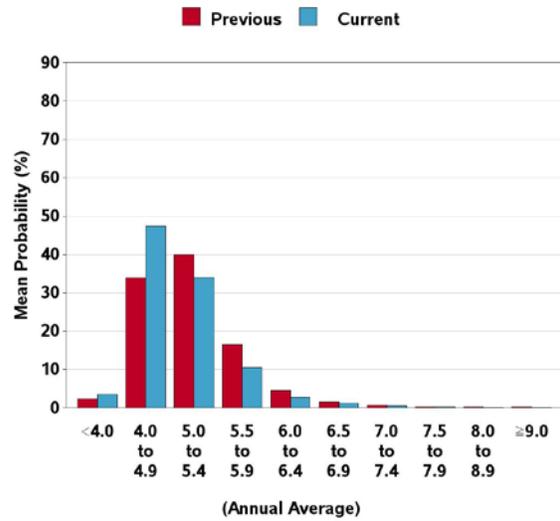


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The charts show the forecasters have revised upward their estimates of the probability that the annual-average unemployment rate will fall below 5.0 percent in 2016, 2017, and 2018.

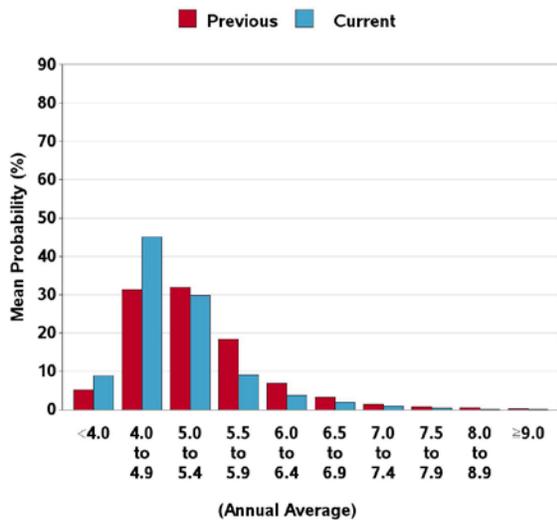
Mean Probabilities for Unemployment Rate in 2015



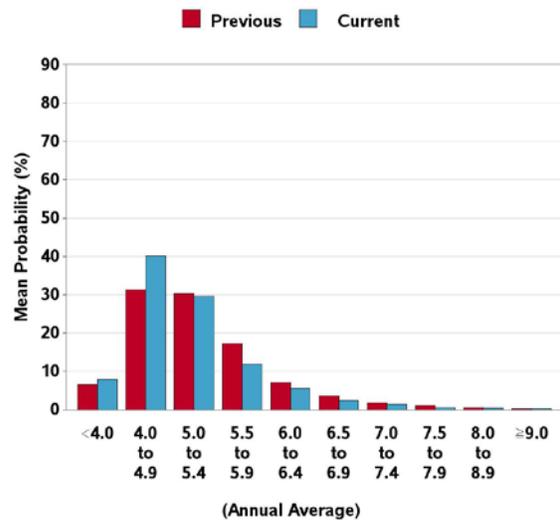
Mean Probabilities for Unemployment Rate in 2016



Mean Probabilities for Unemployment Rate in 2017



Mean Probabilities for Unemployment Rate in 2018



### ***Forecasters See Lower Inflation over the Next Four Quarters***

The forecasters have revised downward their projections for the headline and core measures of CPI and PCE inflation over the next four quarters.

The forecasters expect current-quarter headline CPI inflation to average 0.9 percent, lower than the last survey's estimate of 1.8 percent. Similarly, the forecasters predict current-quarter headline PCE inflation of 0.9 percent, lower than the prediction of 1.4 percent in the survey of three months ago.

The forecasters also see lower core PCE inflation in 2016 and 2017 than they predicted three months ago. Measured on a fourth-quarter over fourth-quarter basis, core PCE inflation is expected to average 1.6 percent in 2016, down from 1.8 percent in the last survey, and 1.8 percent in 2017, down 0.1 percentage point from the previous estimate.

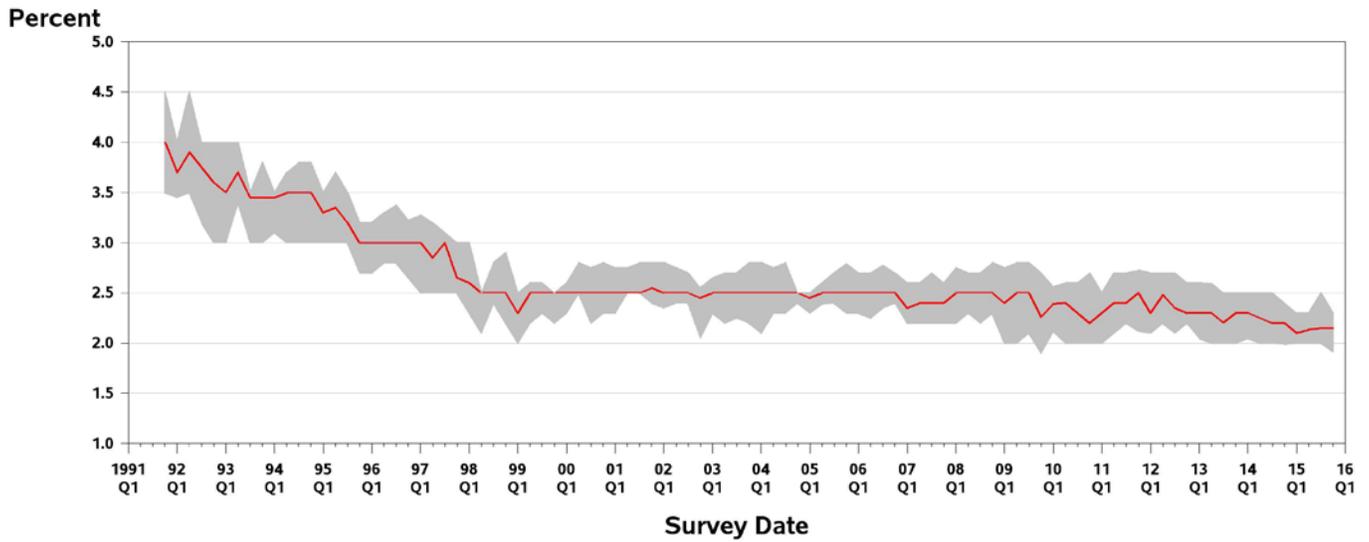
Over the next 10 years from 2015 to 2024, the forecasters expect headline CPI inflation to average 2.15 percent at an annual rate, unchanged from the survey of three months ago. The corresponding estimate for 10-year annual-average PCE inflation is 1.90 percent, down 0.1 percentage point from the previous survey.

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

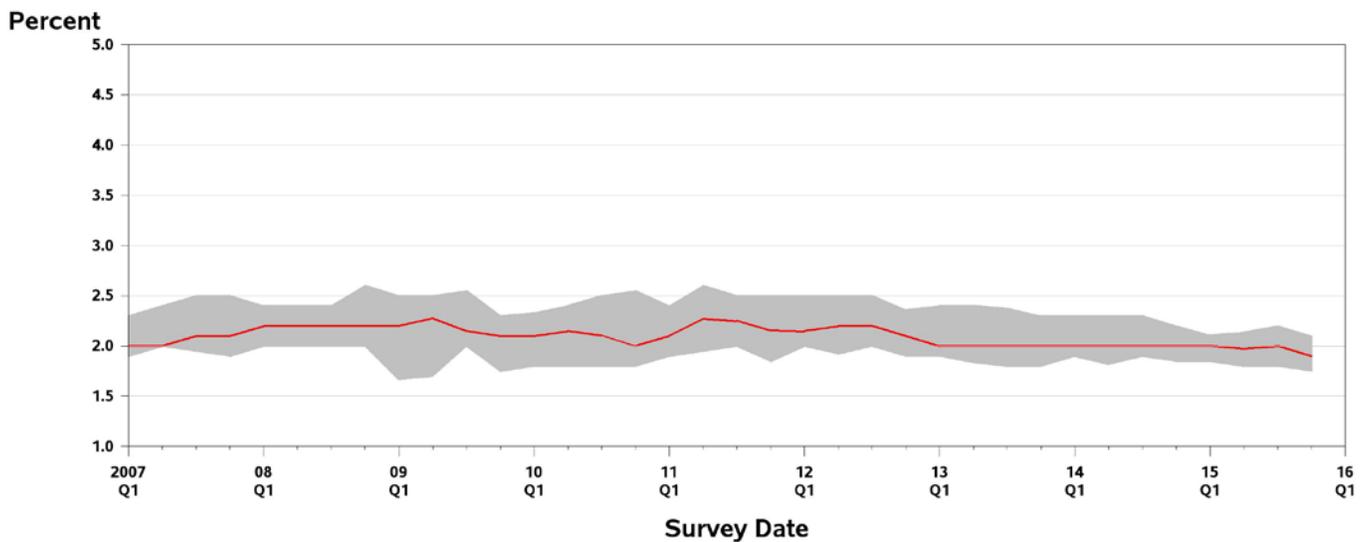
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2015:Q4	1.8	0.9	1.9	1.8	1.4	0.9	1.6	1.5
2016:Q1	2.0	1.8	2.0	1.9	1.7	1.6	1.7	1.5
2016:Q2	2.2	2.1	2.0	2.0	1.9	1.8	1.8	1.6
2016:Q3	2.2	2.1	2.1	2.0	1.9	1.8	1.8	1.7
2016:Q4	N.A.	2.2	N.A.	2.0	N.A.	1.9	N.A.	1.7
Q4/Q4 Annual Averages								
2015	0.8	0.6	2.0	1.9	0.8	0.6	1.5	1.4
2016	2.1	2.0	2.0	2.0	1.8	1.8	1.8	1.6
2017	2.3	2.3	2.1	2.1	1.9	1.9	1.9	1.8
Long-Term Annual Averages								
2015–2019	2.00	1.90	N.A.	N.A.	1.80	1.65	N.A.	N.A.
2015–2024	2.15	2.15	N.A.	N.A.	2.00	1.90	N.A.	N.A.

The charts below show the median projections (the red lines) and the associated interquartile ranges (the gray areas around the red lines) for the projections for 10-year annual-average CPI and PCE inflation. The top panel shows the unchanged estimate for 10-year CPI inflation, at 2.15 percent. The bottom panel shows a slightly lower 10-year forecast for PCE inflation, at 1.90 percent.

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

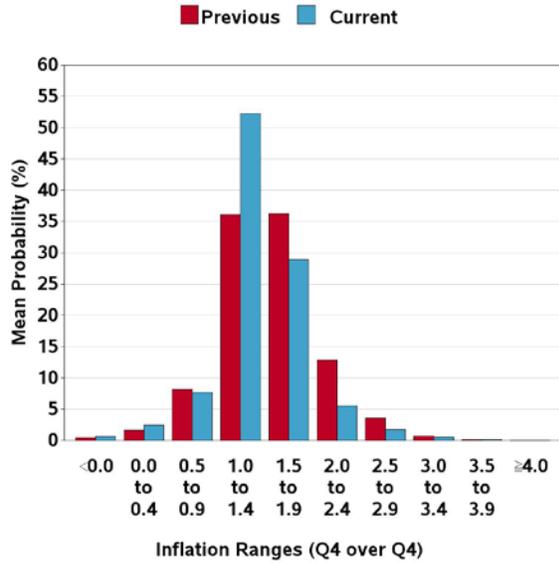


### Projections for the 10-Year Annual-Average Rate of PCE Inflation (Median and Interquartile Range)

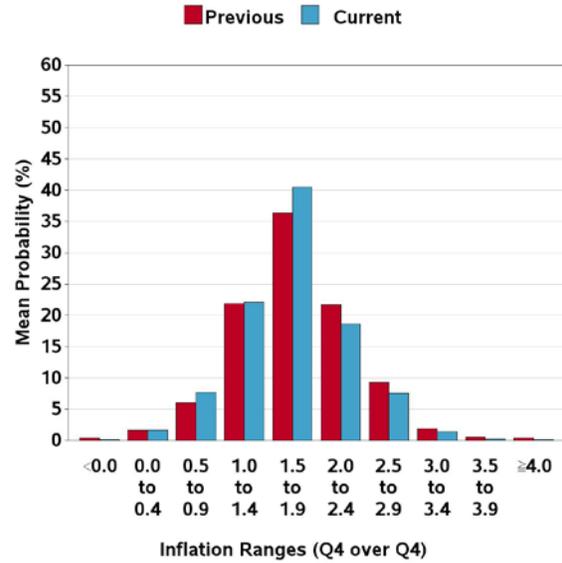


The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2015 and 2016 will fall into each of 10 ranges. For both 2015 and 2016, the forecasters have increased the probability that core PCE inflation will fall in the lower levels of inflation outcomes.

Mean Probabilities for Core PCE Inflation in 2015



Mean Probabilities for Core PCE Inflation in 2016



**Small 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 7.7 percent chance of negative growth, down from 10.0 percent in the previous survey.

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

Quarterly data:	Previous	New
2015:Q4	10.0	7.7
2016:Q1	13.7	13.0
2016:Q2	13.0	12.6
2016:Q3	13.6	13.7
2016:Q4	N.A.	14.7

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; **Larry Filer**, Old Dominion University; **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** 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; **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 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2015	2016 (YEAR-OVER-YEAR)	2017	2018
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	2.6	2.5	2.6	2.9	2.4	2.4	2.6	2.5	2.8
2. GDP PRICE INDEX (PERCENT CHANGE)	1.4	1.7	1.9	1.9	1.9	1.0	1.7	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	4.0	4.5	4.4	4.4	4.5	3.5	4.3	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	1.7 201.5	1.6 188.2	1.6 193.5	1.6 192.0	1.5 181.2	2.1 241.8	1.7 197.0	N.A. N.A.	N.A. N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	5.0	4.9	4.8	4.8	4.7	5.3	4.8	4.7	4.7
6. 3-MONTH TREASURY BILL (PERCENT)	0.1	0.3	0.6	0.8	1.0	0.0	0.7	1.7	2.3
7. 10-YEAR TREASURY BOND (PERCENT)	2.3	2.4	2.6	2.7	2.8	2.2	2.7	3.2	3.6
	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2015	2016 (Q4-OVER-Q4)	2017	
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	0.9	1.8	2.1	2.1	2.2	0.6	2.0	2.3	
9. CORE CPI (ANNUAL RATE)	1.8	1.9	2.0	2.0	2.0	1.9	2.0	2.1	
10. PCE (ANNUAL RATE)	0.9	1.6	1.8	1.8	1.9	0.6	1.8	1.9	
11. CORE PCE (ANNUAL RATE)	1.5	1.5	1.6	1.7	1.7	1.4	1.6	1.8	

THE FIGURES ON EACH LINE ARE MEDIANS OF 45 INDIVIDUAL FORECASTERS.

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

## **SURVEY OF PROFESSIONAL FORECASTERS**

**Fourth 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 October 29; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before November 10, 2015.

TABLE ONE  
MAJOR MACROECONOMIC INDICATORS  
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST				ACTUAL		FORECAST		
		2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2014 ANNUAL	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL	2018 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	43	18035	18214	18414	18613	18815	19021	17348	17955	18726	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	43	110.02	110.40	110.87	111.40	111.92	112.45	108.69	109.80	111.65	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	23	N.A.	1573.2	1581.5	1609.8	1634.2	1652.5	1559.1	1538.7	1621.3	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	43	5.2	5.0	4.9	4.8	4.8	4.7	6.2	5.3	4.8	4.7	4.7
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	37	142231	142835	143400	143980	144556	145100	139023	141924	144288	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	36	107.3	107.7	108.4	109.0	109.8	110.5	105.7	107.3	109.4	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	40	1.16	1.19	1.22	1.24	1.26	1.30	1.00	1.12	1.25	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	40	0.04	0.10	0.34	0.60	0.78	0.96	0.03	0.04	0.65	1.67	2.33
9. AAA CORPORATE BOND YIELD (PERCENT)	32	4.09	4.10	4.25	4.37	4.45	4.57	4.16	3.91	4.41	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	32	5.24	5.35	5.44	5.55	5.66	5.70	4.85	4.99	5.58	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	42	2.22	2.29	2.45	2.58	2.70	2.85	2.54	2.15	2.66	3.23	3.64
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	43	16394	16501	16603	16711	16831	16932	15962	16352	16773	17198	17671
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	42	11268.6	11351.7	11433.9	11513.1	11592.5	11671.0	10875.7	11220.2	11553.6	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	41	2222.1	2245.6	2269.9	2297.8	2329.5	2355.3	2148.3	2216.7	2311.0	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	40	531.8	542.4	552.8	563.0	571.9	582.5	486.4	527.7	569.0	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	41	1112.0	1113.2	1114.8	1117.0	1119.7	1121.8	1116.3	1111.9	1118.5	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	40	1755.5	1761.5	1768.6	1775.1	1781.0	1787.2	1720.8	1746.7	1777.4	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	41	56.8	55.0	57.0	58.0	57.0	57.5	68.0	84.5	57.8	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	40	-536.2	-550.8	-568.0	-582.2	-597.6	-614.0	-442.5	-540.7	-589.9	N.A.	N.A.

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

TABLE TWO  
MAJOR MACROECONOMIC INDICATORS  
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	2014	2015	2016	2017
		TO Q4 2015	TO Q1 2016	TO Q2 2016	TO Q3 2016	TO Q4 2016	TO 2015	TO 2016	TO 2017	TO 2018
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	43	4.0	4.5	4.4	4.4	4.5	3.5	4.3	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	43	1.4	1.7	1.9	1.9	1.9	1.0	1.7	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	23	7.6	2.1	7.4	6.2	4.6	-1.3	5.4	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	43	-0.2	-0.1	-0.1	-0.0	-0.1	-0.9	-0.5	-0.1	0.0
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	37	1.7	1.6	1.6	1.6	1.5	2.1	1.7	N.A.	N.A.
(AVG MONTHLY CHANGE)	37	201.5	188.2	193.5	192.0	181.2	241.8	197.0	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2012=100)	36	1.4	2.6	2.4	2.8	2.5	1.5	1.9	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	40	10.8	9.3	6.9	6.4	13.3	12.1	11.4	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	40	0.06	0.24	0.26	0.19	0.18	0.01	0.61	1.01	0.66
9. AAA CORPORATE BOND YIELD (PERCENT)	32	0.01	0.15	0.12	0.08	0.12	-0.25	0.50	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	32	0.11	0.08	0.11	0.11	0.04	0.14	0.59	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	42	0.07	0.16	0.13	0.12	0.14	-0.39	0.51	0.56	0.42
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	43	2.6	2.5	2.6	2.9	2.4	2.4	2.6	2.5	2.8
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	42	3.0	2.9	2.8	2.8	2.7	3.2	3.0	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	41	4.3	4.4	5.0	5.6	4.5	3.2	4.3	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	40	8.2	7.9	7.6	6.5	7.6	8.5	7.8	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	41	0.4	0.6	0.8	1.0	0.8	-0.4	0.6	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	40	1.4	1.6	1.5	1.3	1.4	1.5	1.8	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	41	-1.8	2.0	1.0	-1.0	0.5	16.5	-26.7	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	40	-14.6	-17.3	-14.2	-15.4	-16.4	-98.2	-49.3	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, FOURTH QUARTER 2015.

TABLE THREE  
 MAJOR PRICE INDICATORS  
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST(Q/Q)				ACTUAL	FORECAST(Q4/Q4)		
		2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2014 ANNUAL	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL
1. CONSUMER PRICE INDEX (ANNUAL RATE)	42	1.6	0.9	1.8	2.1	2.1	2.2	1.2	0.6	2.0	2.3
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	40	1.7	1.8	1.9	2.0	2.0	2.0	1.7	1.9	2.0	2.1
3. PCE PRICE INDEX (ANNUAL RATE)	39	1.2	0.9	1.6	1.8	1.8	1.9	1.1	0.6	1.8	1.9
4. CORE PCE PRICE INDEX (ANNUAL RATE)	38	1.3	1.5	1.5	1.6	1.7	1.7	1.4	1.4	1.6	1.8

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

TABLE FOUR  
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016
	TO Q4 2015	TO Q1 2016	TO Q2 2016	TO Q3 2016	TO Q4 2016
NUMBER OF FORECASTERS					
10 OR LESS	31	18	20	17	15
11 TO 20	7	19	15	16	16
21 TO 30	0	1	3	5	7
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	7	7	7	7	7
MEAN AND MEDIAN					
MEDIAN PROBABILITY	5.00	13.50	10.00	14.23	15.00
MEAN PROBABILITY	7.73	13.00	12.56	13.73	14.66

NOTE: TOTAL NUMBER OF FORECASTERS REPORTING IS 38.  
SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, FOURTH 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	0.04	0.07	0.16	0.22
8.0 TO 8.9 PERCENT	0.01	0.12	0.18	0.33
7.5 TO 7.9 PERCENT	0.03	0.22	0.32	0.55
7.0 TO 7.4 PERCENT	0.06	0.52	0.92	1.38
6.5 TO 6.9 PERCENT	0.15	1.13	1.87	2.48
6.0 TO 6.4 PERCENT	0.51	2.70	3.81	5.53
5.5 TO 5.9 PERCENT	8.13	10.53	9.12	11.96
5.0 TO 5.4 PERCENT	82.09	33.96	29.78	29.55
4.0 TO 4.9 PERCENT	8.41	47.29	45.02	40.09
LESS THAN 4.0 PERCENT	0.57	3.46	8.83	7.94

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	0.02	0.19	0.40	0.48
5.0 TO 5.9	0.19	0.85	1.19	1.35
4.0 TO 4.9	1.73	5.07	5.62	5.21
3.0 TO 3.9	8.14	16.92	18.19	17.38
2.0 TO 2.9	74.03	47.68	44.07	39.25
1.0 TO 1.9	13.98	21.50	20.81	23.46
0.0 TO 0.9	1.42	5.01	6.36	8.09
-1.0 TO -0.1	0.31	2.03	2.15	3.33
-2.0 TO -1.1	0.14	0.45	0.89	1.00
-3.0 TO -2.1	0.05	0.25	0.27	0.36
LESS THAN -3.0	0.01	0.03	0.04	0.08

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

	2014-2015	2015-2016
4.0 OR MORE	0.18	0.57
3.5 TO 3.9	0.05	0.72
3.0 TO 3.4	0.40	1.75
2.5 TO 2.9	1.22	5.44
2.0 TO 2.4	4.07	20.85
1.5 TO 1.9	12.41	38.11
1.0 TO 1.4	51.30	22.85
0.5 TO 0.9	24.63	7.37
0.0 TO 0.4	5.58	2.04
WILL DECLINE	0.16	0.31

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, FOURTH 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	0.06	0.25
3.5 TO 3.9 PERCENT	0.25	0.41
3.0 TO 3.4 PERCENT	0.78	3.26
2.5 TO 2.9 PERCENT	3.97	12.86
2.0 TO 2.4 PERCENT	27.86	37.23
1.5 TO 1.9 PERCENT	54.06	33.58
1.0 TO 1.4 PERCENT	8.42	9.15
0.5 TO 0.9 PERCENT	2.56	2.34
0.0 TO 0.4 PERCENT	1.56	0.73
WILL DECLINE	0.50	0.19

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	14Q4 TO 15Q4	15Q4 TO 16Q4
4 PERCENT OR MORE	0.03	0.11
3.5 TO 3.9 PERCENT	0.14	0.21
3.0 TO 3.4 PERCENT	0.58	1.42
2.5 TO 2.9 PERCENT	1.76	7.56
2.0 TO 2.4 PERCENT	5.55	18.62
1.5 TO 1.9 PERCENT	28.93	40.49
1.0 TO 1.4 PERCENT	52.28	22.12
0.5 TO 0.9 PERCENT	7.67	7.73
0.0 TO 0.4 PERCENT	2.48	1.63
WILL DECLINE	0.59	0.11

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
 SURVEY OF PROFESSIONAL FORECASTERS, FOURTH 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	1.29	MINIMUM	0.90
LOWER QUARTILE	1.72	LOWER QUARTILE	1.50
MEDIAN	1.90	MEDIAN	1.65
UPPER QUARTILE	2.10	UPPER QUARTILE	1.90
MAXIMUM	2.60	MAXIMUM	2.40
MEAN	1.92	MEAN	1.71
STD. DEVIATION	0.30	STD. DEVIATION	0.31
N	36	N	35
MISSING	9	MISSING	10

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2015-2024

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CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.52	MINIMUM	1.40
LOWER QUARTILE	1.91	LOWER QUARTILE	1.75
MEDIAN	2.15	MEDIAN	1.90
UPPER QUARTILE	2.30	UPPER QUARTILE	2.10
MAXIMUM	3.60	MAXIMUM	3.50
MEAN	2.18	MEAN	1.98
STD. DEVIATION	0.37	STD. DEVIATION	0.38
N	35	N	34
MISSING	10	MISSING	11

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