



2015 Capitalization Rate Study

**Appendix and Supporting Documents**

Table Showing The Implied Risk Premium Using Macroeconomic Data  
 This type of calculation can also be found in Chapter 9 of Ibbotson's (MorningStar) SBBI, Supply Side Model

### 3 Stage Dividend Growth Model

Assumptions:

Stages	Years	Growth	Model 1
1st Stage	1-5 years	Constant @:	12.50%
2nd Stage	6-15 years	Linear from:	11.84% to 5.28%
			Real Growth
3rd Stage	15 years -perpetuity	GDP Growth: Real and Inflation	1.80% to 3.07%
		GDP Growth*: Real + Inflation	5.28%

OR  
+  
TO

Model 2
11.70%
10.99% to 3.90%
Inflation
2.10% to 2.21%
3.90%

S & P GICS Composite 1500 Valuations as of 12/31/14 Monthly Investment Review, January 2015  
 Linear from 1st Stage to 3rd Stage

Inflation Range = Federal Reserve, Treasuries Inflation - Indexed

\*GDP Growth = Real growth + Inflation  
 First Quarter 2015 Survey of Professional Forecasters - Philadelphia Federal Reserve Release Date 2/13/2015  
 Livingston Survey Release Date December 12, 2014

#### Model 1

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Starting Industry	Start Price	Expected Dividends	1st Stage Growth Rates					2nd Stage Growth Rates									
S & P 500	\$ (2,058.90)	\$ 42.88	12.500%	12.500%	12.500%	12.500%	12.500%	11.84%	11.187%	10.531%	9.875%	9.218%	8.562%	7.905%	7.249%	6.593%	5.936%
			\$ 48.24	\$ 54.27	\$ 61.05	\$ 68.69	\$ 77.27	\$ 86.42	\$ 96.09	\$ 106.21	\$ 116.70	\$ 127.46	\$ 138.37	\$ 149.31	\$ 160.13	\$ 170.69	\$ 180.82
			Implied Market Return =		8.87%												

#### Model 2

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Starting Industry	Start Price	Expected Dividends	1st Stage Growth Rates					2nd Stage Growth Rates									
S & P 500	\$ (2,058.90)	\$ 42.88	11.700%	11.700%	11.700%	11.700%	11.700%	10.99%	10.282%	9.573%	8.864%	8.155%	7.445%	6.736%	6.027%	5.318%	4.609%
			\$ 47.90	\$ 53.50	\$ 59.76	\$ 66.75	\$ 74.56	\$ 82.76	\$ 91.27	\$ 100.00	\$ 108.87	\$ 117.74	\$ 126.51	\$ 135.03	\$ 143.17	\$ 150.79	\$ 157.74
			Implied Market Return =		7.68%												

Conclusions:

Implied Market Rate Range = 7.68% to 8.87%

Mean 8.28%  
 Median 8.28%  
 Market Rate Used 8.50%

2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%
\$ 190.37	\$200.42	\$211.00	\$222.14	\$233.87	\$246.22	\$259.22	\$272.91	\$287.32	\$302.49	\$318.46	\$335.27	\$352.97	\$371.61	\$391.23	\$411.89	\$433.64	\$456.53	\$480.64	\$506.02	\$532.73

2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%
\$ 163.89	\$170.28	\$176.92	\$183.82	\$190.99	\$198.44	\$206.18	\$214.22	\$222.57	\$231.25	\$240.27	\$249.64	\$259.38	\$269.49	\$280.01	\$290.93	\$302.27	\$314.06	\$326.31	\$339.03	\$352.26

2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070
5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%
\$560.86	\$590.47	\$621.65	\$654.48	\$689.03	\$725.41	\$763.71	\$804.04	\$846.49	\$891.19	\$938.24	\$987.78	\$1,039.93	\$1,094.84	\$1,152.65	\$1,213.51	\$1,277.58	\$1,345.04	\$1,416.06

2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070
3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%
\$365.99	\$380.27	\$395.10	\$410.51	\$426.52	\$443.15	\$460.43	\$478.39	\$497.05	\$516.43	\$536.57	\$557.50	\$579.24	\$601.83	\$625.31	\$649.69	\$675.03	\$701.36	\$728.71

2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088
3rd Stage Growth Rates																	
5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%
\$ 1,490.83	\$ 1,569.54	\$ 1,652.41	\$ 1,739.66	\$ 1,831.52	\$ 1,928.22	\$ 2,030.03	\$ 2,137.22	\$ 2,250.06	\$ 2,368.86	\$ 2,493.94	\$ 2,625.62	\$ 2,764.25	\$ 2,910.21	\$ 3,063.86	\$ 3,225.64	\$ 3,395.95	\$ 3,575.26

2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088
3rd Stage Growth Rates																	
3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%
\$ 757.13	\$ 786.66	\$ 817.34	\$ 849.21	\$ 882.33	\$ 916.74	\$ 952.50	\$ 989.64	\$ 1,028.24	\$ 1,068.34	\$ 1,110.01	\$ 1,153.30	\$ 1,198.28	\$ 1,245.01	\$ 1,293.56	\$ 1,344.01	\$ 1,396.43	\$ 1,450.89

2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104
5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%
\$3,764.03	\$3,962.77	\$4,172.00	\$4,392.29	\$4,624.20	\$4,868.36	\$ 5,125.41	\$ 5,396.03	\$ 5,680.94	\$ 5,980.89	\$ 6,296.68	\$ 6,629.15	\$ 6,979.17	\$ 7,347.67	\$ 7,735.62	\$ 8,144.06

2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104
3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%
\$1,507.48	\$1,566.27	\$1,627.35	\$1,690.82	\$1,756.76	\$1,825.27	\$ 1,896.46	\$ 1,970.42	\$ 2,047.27	\$ 2,127.11	\$ 2,210.07	\$ 2,296.26	\$ 2,385.81	\$ 2,478.86	\$ 2,575.54	\$ 2,675.98

2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%
\$ 8,574.07	\$ 9,026.78	\$ 9,503.39	\$ 10,005.17	\$ 10,533.45	\$ 11,089.61	\$ 11,675.14	\$ 12,291.59	\$ 12,940.59	\$ 13,623.85	\$ 14,343.19	\$ 15,100.51	\$ 15,897.82	\$ 16,737.22	\$ 17,620.95	\$ 18,551.33

2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%
\$ 2,780.35	\$ 2,888.78	\$ 3,001.44	\$ 3,118.50	\$ 3,240.12	\$ 3,366.48	\$ 3,497.78	\$ 3,634.19	\$ 3,775.92	\$ 3,923.19	\$ 4,076.19	\$ 4,235.16	\$ 4,400.33	\$ 4,571.95	\$ 4,750.25	\$ 4,935.51

2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131
5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%	5.280%
\$19,530.84	\$20,562.07	\$21,647.75	\$22,790.75	\$23,994.10	\$25,260.99	\$26,594.77	\$27,998.98	\$29,477.32	\$31,033.73	\$32,672.31

2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131
3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%	3.900%
\$ 5,128.00	\$ 5,327.99	\$ 5,535.78	\$ 5,751.68	\$ 5,975.99	\$ 6,209.05	\$ 6,451.21	\$ 6,702.80	\$ 6,964.21	\$ 7,235.82	\$ 7,518.01



# SURVEY OF PROFESSIONAL FORECASTERS

Release Date: February 13, 2015

## FIRST QUARTER 2015

### *Unchanged Outlook for Growth, but Brighter Outlook for Labor Markets*

The outlook for growth in the U.S. economy over the next three years has changed little from the survey of three months ago, according to 39 forecasters surveyed by the Federal Reserve Bank of Philadelphia. The forecasters predict real GDP will grow at an annual rate of 2.7 percent this quarter and 3.0 percent next quarter. On an annual-average over annual-average basis, real GDP will grow 3.2 percent in 2015, up 0.2 percentage point from the previous estimate. The forecasters predict real GDP will grow 2.9 percent in 2016, 2.7 percent in 2017, and 2.7 percent in 2018.

A brighter outlook for the labor market accompanies the nearly stable outlook for growth. The forecasters predict that the unemployment rate will be an annual average of 5.4 percent in 2015, before falling to 5.1 percent in 2016, 5.0 percent in 2017, and 4.9 percent in 2018. The projections for 2015, 2016, and 2017 are below those of the last survey.

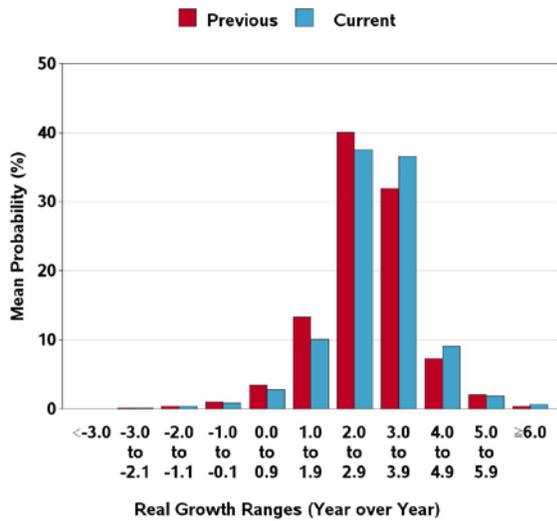
The panelists also predict an improved outlook on the employment front. They have revised upward their estimates for job gains in the next four quarters. The forecasters see nonfarm payroll employment growing at a rate of 269,300 jobs per month this quarter, 233,800 jobs per month next quarter, 222,000 jobs per month in the third quarter of 2015, and 229,400 jobs per month in the fourth quarter of 2015. The forecasters' projections for the annual-average level of nonfarm payroll employment suggest job gains at a monthly rate of 252,500 in 2015 and 213,600 in 2016, as the table below shows. (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*

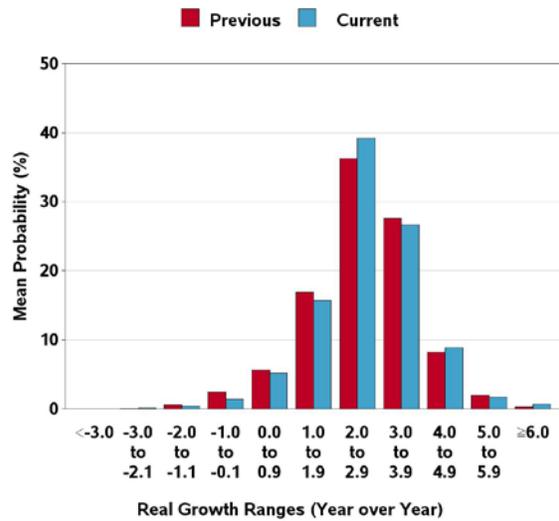
	Real GDP (%)		Unemployment Rate (%)		Payrolls (000s/month)	
	Previous	New	Previous	New	Previous	New
Quarterly data:						
2015:Q1	2.8	2.7	5.8	5.6	211.2	269.3
2015:Q2	3.1	3.0	5.7	5.5	195.4	233.8
2015:Q3	2.8	2.8	5.6	5.4	208.0	222.0
2015:Q4	3.0	2.8	5.5	5.2	201.3	229.4
2016:Q1	N.A.	2.9	N.A.	5.2	N.A.	213.8
Annual data (projections are based on annual-average levels):						
2015	3.0	3.2	5.6	5.4	212.3	252.5
2016	2.9	2.9	5.4	5.1	N.A.	213.6
2017	2.7	2.7	5.2	5.0	N.A.	N.A.
2018	N.A.	2.7	N.A.	4.9	N.A.	N.A.

The charts below provide some insight into the degree of uncertainty the forecasters have about their projections for the rate of growth in the annual-average level of real GDP. Each chart (except the one for 2018) presents the forecasters' previous and current estimates of the probability that growth will fall into each of 11 ranges. The probability estimates for growth in 2015, 2016, and 2017 are about the same now as they were in the previous survey.

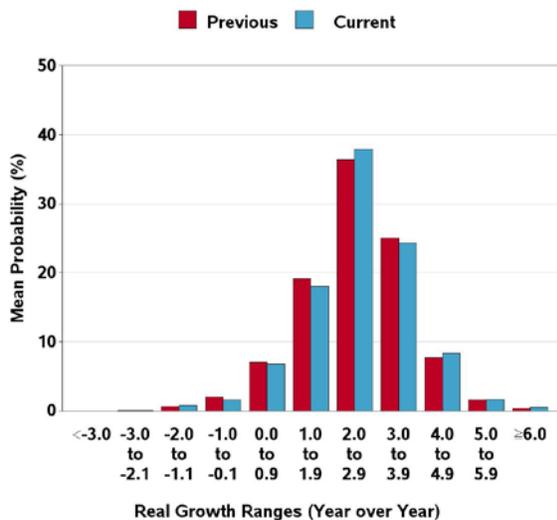
Mean Probabilities for Real GDP Growth in 2015



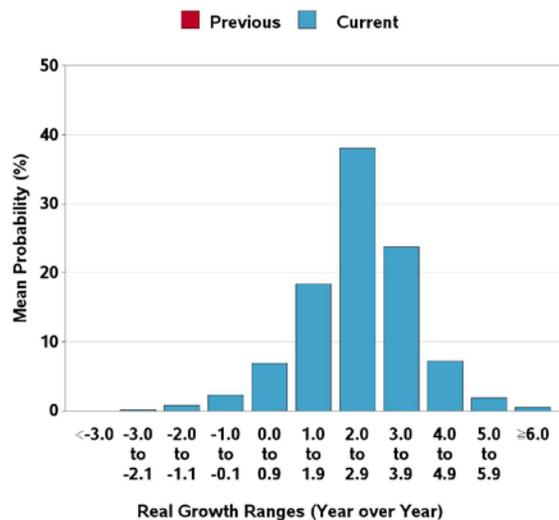
Mean Probabilities for Real GDP Growth in 2016



Mean Probabilities for Real GDP Growth in 2017

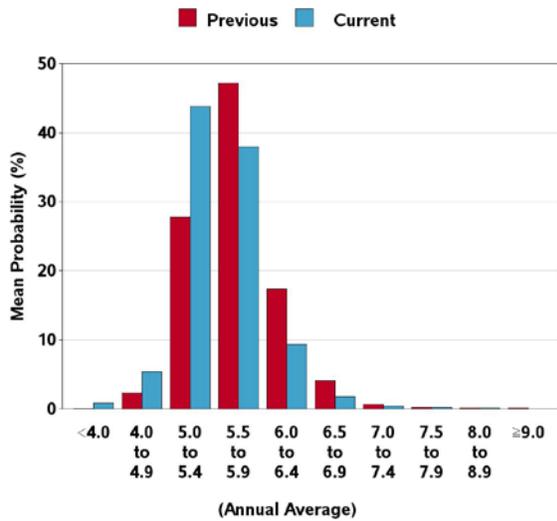


Mean Probabilities for Real GDP Growth in 2018

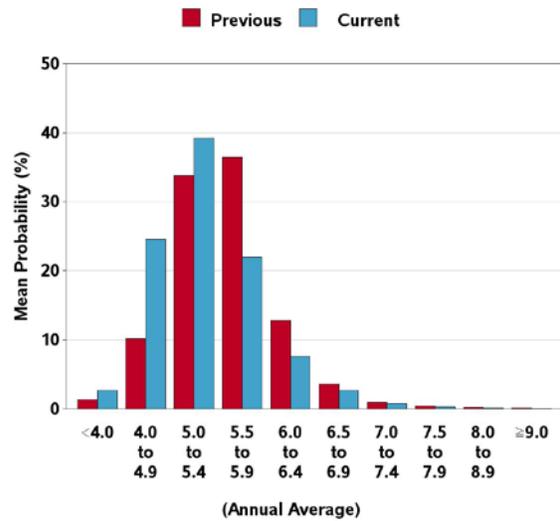


The forecasters' density projections for unemployment, shown below, shed light on uncertainty about the labor market over the next four years. Each chart for unemployment presents the forecasters' current estimates of the probability that unemployment will fall into each of 10 ranges. The charts show the forecasters are raising their density estimates over the next three years at the lower levels of unemployment outcomes, suggesting they are more confident about lower unemployment than they were in the last survey.

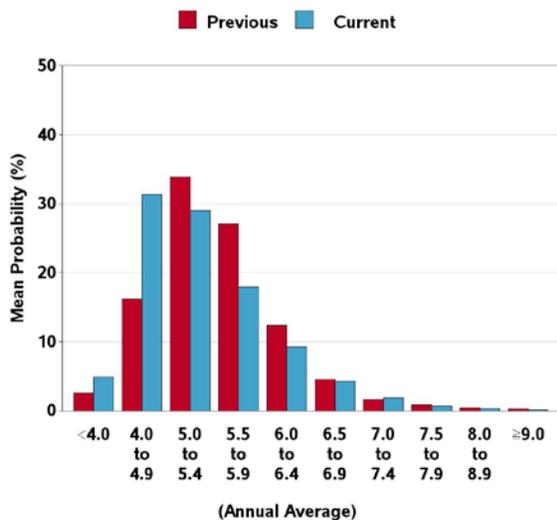
Mean Probabilities for Unemployment Rate in 2015



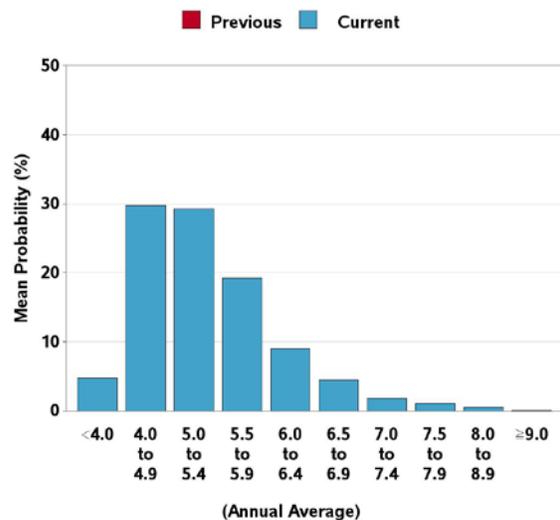
Mean Probabilities for Unemployment Rate in 2016



Mean Probabilities for Unemployment Rate in 2017



Mean Probabilities for Unemployment Rate in 2018



### ***Forecasters Predict Lower Inflation in 2015***

The forecasters expect current-quarter headline CPI inflation to average -1.4 percent, lower than the last survey's estimate of 1.8 percent. The forecasters predict current-quarter headline PCE inflation of -0.6 percent, lower than the prediction of 1.7 percent from the survey of three months ago.

The forecasters also see lower headline and core measures of CPI and PCE inflation in 2015. Measured on a fourth-quarter over fourth-quarter basis, headline CPI inflation is expected to average 1.1 percent in 2015, down from 1.9 percent in the last survey. Forecasters expect fourth-quarter over fourth-quarter headline PCE inflation to also average 1.1 percent in 2015, down from 1.8 percent in the last survey.

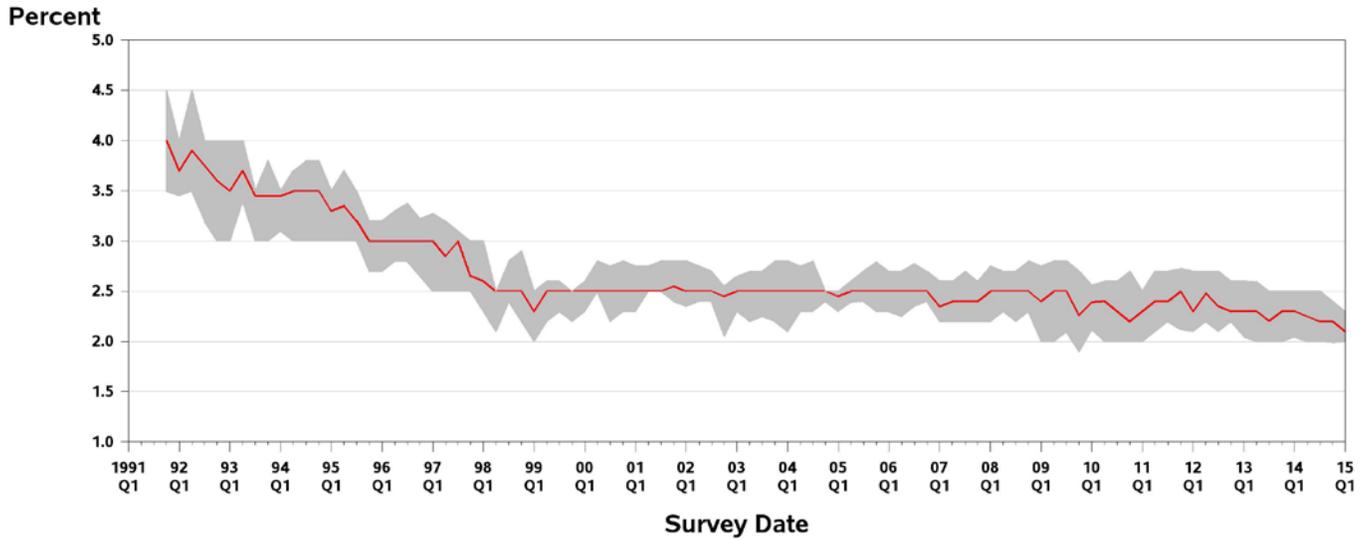
Over the next 10 years, 2015 to 2024, the forecasters expect headline CPI inflation to average 2.1 percent at an annual rate. The corresponding estimate for 10-year annual-average PCE inflation is 2.0 percent.

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

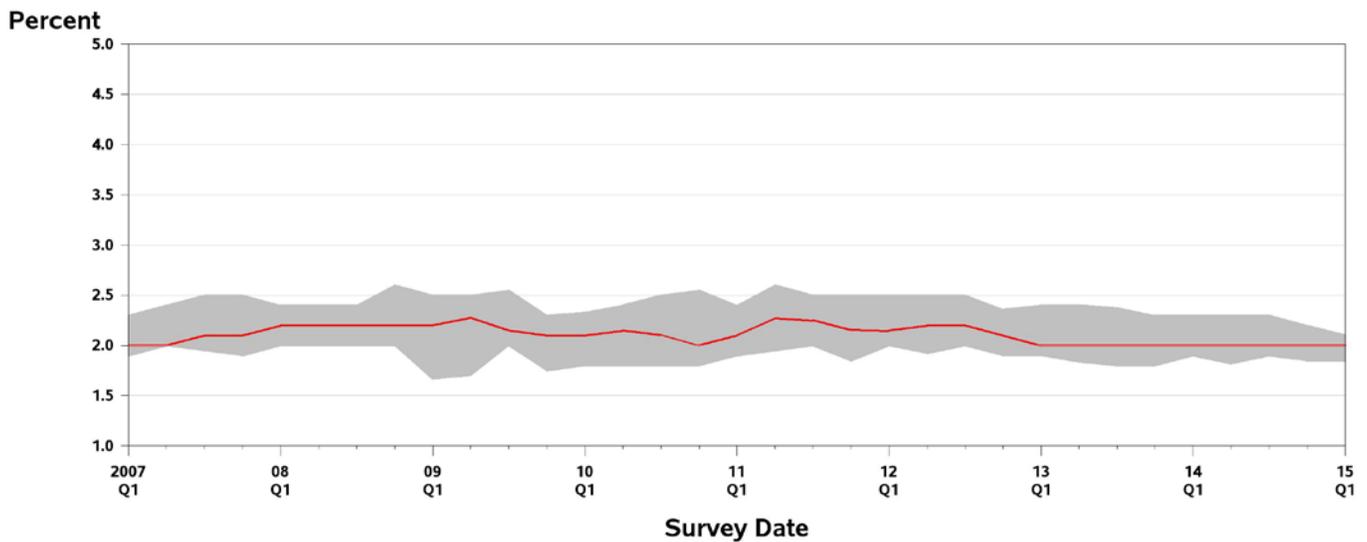
	Headline CPI		Core CPI		Headline PCE		Core PCE	
	Previous	Current	Previous	Current	Previous	Current	Previous	Current
Quarterly								
2015:Q1	1.8	-1.4	1.9	1.3	1.7	-0.6	1.7	1.2
2015:Q2	1.9	1.6	1.9	1.7	1.8	1.4	1.7	1.4
2015:Q3	2.0	1.9	1.9	1.8	1.8	1.9	1.8	1.5
2015:Q4	2.0	2.0	2.0	1.8	1.9	1.8	1.8	1.7
2016:Q1	N.A.	2.1	N.A.	1.9	N.A.	1.8	N.A.	1.6
Q4/Q4 Annual Averages								
2015	1.9	1.1	2.0	1.7	1.8	1.1	1.8	1.4
2016	2.1	2.1	2.0	1.9	1.9	1.9	1.8	1.7
2017	N.A.	2.3	N.A.	2.1	N.A.	2.1	N.A.	1.9
Long-Term Annual Averages								
2014-2018	2.09	N.A.	N.A.	N.A.	1.90	N.A.	N.A.	N.A.
2015-2019	N.A.	2.00	N.A.	N.A.	N.A.	1.80	N.A.	N.A.
2014-2023	2.20	N.A.	N.A.	N.A.	2.00	N.A.	N.A.	N.A.
2015-2024	N.A.	2.10	N.A.	N.A.	N.A.	2.00	N.A.	N.A.

The charts below show the median projections (the red line) and the associated interquartile ranges (the gray area around the red line) for 10-year annual-average CPI and PCE inflation. The top panel shows a slightly lower level of the long-term projection for CPI inflation, at 2.1 percent. The bottom panel highlights the unchanged 10-year forecast for PCE inflation, at 2.0 percent.

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

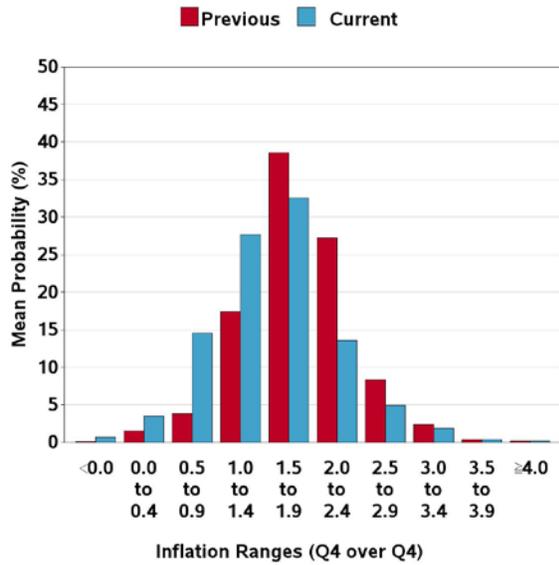


### Projections for the 10-Year Annual-Average Rate of PCE Inflation (Median and Interquartile Range)

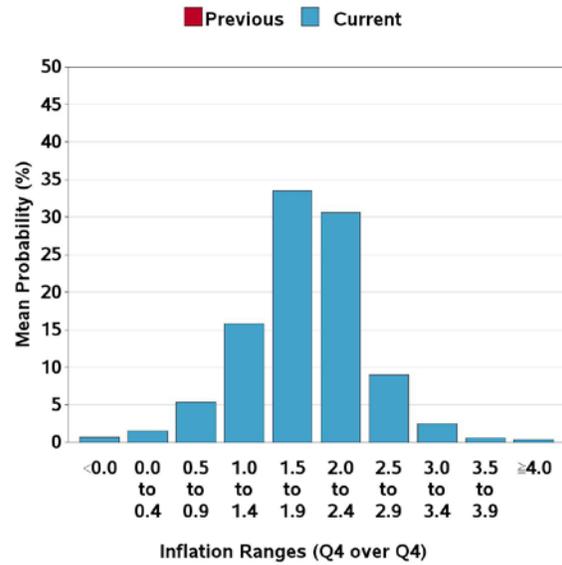


The figures below show the probabilities that the forecasters are assigning to the possibility that fourth-quarter over fourth-quarter core PCE inflation in 2015 and 2016 will fall into each of 10 ranges. For 2015, the forecasters assign a higher chance than previously predicted that core PCE inflation will be below 1.5 percent (and a lower probability that inflation will be above 1.5 percent).

**Mean Probabilities for Core PCE Inflation in 2015**



**Mean Probabilities for Core PCE Inflation in 2016**



**Lower Risk of a Negative Quarter**

For the current quarter, the forecasters predict a 7.9 percent chance of negative growth. As the table below shows, the forecasters have also reduced their risk estimates for a downturn in the following quarters, compared with their previous estimates.

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

Quarterly data:	Previous	New
2015:Q1	10.3	7.9
2015:Q2	11.4	9.3
2015:Q3	12.6	11.1
2015:Q4	13.5	11.9
2016:Q1	N.A.	13.2

### ***Forecasters State Their Views on House Prices***

In this survey, a special question asked panelists to provide their forecasts for fourth-quarter over fourth-quarter growth in house prices, as measured by a number of alternative indices. The panelists were allowed to choose their measure from a list of indices or to write in their own index. For each index of their choosing, the panelists provided forecasts for growth in 2015 and 2016.

Twenty-two panelists answered the special question. Some panelists provided projections for more than one index. The table below provides a summary of the forecasters' responses. The number of responses (N) is low for each index. The median estimates for the seven house-price indices listed in the table below range from 3.7 percent to 5.9 percent in 2015 and from 3.0 percent to 5.0 percent in 2016.

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

Index	2015 (Q4/Q4 Percent Change)			2016 (Q4/Q4 Percent Change)		
	N	Mean	Median	N	Mean	Median
S&P/Case-Shiller: U.S. National	7	4.4	4.5	7	5.0	4.0
S&P/Case-Shiller: Composite 10	2	4.0	4.0	2	3.5	3.5
S&P/Case-Shiller: Composite 20	5	3.7	4.0	5	2.9	3.5
FHFA: U.S. Total	5	4.9	5.6	5	4.8	5.0
FHFA: Purchase Only	8	3.5	3.7	8	3.0	3.0
CoreLogic: National HPI, incl. Distressed Sales (Single Family Combined)	4	5.1	5.3	4	4.4	4.5
NAR Median: Total Existing	2	5.9	5.9	2	3.7	3.7

### ***Forecasters See Slightly Lower Long-Run Growth in Output and Productivity and in Returns to Financial Assets***

In the first-quarter surveys, the forecasters provide their long-run projections for an expanded set of variables, including growth in output and productivity, as well as returns on financial assets.

As the table below shows, the forecasters have reduced their estimates for the annual-average rate of growth in real GDP over the next 10 years. Currently, the forecasters expect real GDP to grow at an annual-average rate of 2.50 percent over the next 10 years, down from 2.60 percent in the first-quarter survey of 2014.

Similarly, productivity growth is now expected to average 1.70 percent, down from 1.80 percent. Downward revisions to the return on two of the financial assets accompany the current outlook. The forecasters see the S&P 500 returning an annual-average 5.45 percent per year over the next 10 years, down from 6.00 percent. The forecasters expect the rate on 10-year Treasuries to average 3.98 percent over the next 10 years, down from 4.35 percent in last year's first-quarter survey. Three-month Treasury bills will return 2.67 percent, up from 2.50 percent.

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

	<i>First Quarter 2014</i>	<i>Current Survey</i>
<i>Real GDP Growth</i>	2.60	2.50
<i>Productivity Growth</i>	1.80	1.70
<i>Stock Returns (S&amp;P 500)</i>	6.00	5.45
<i>Rate on 10-Year Treasury Bonds</i>	4.35	3.98
<i>Bill Returns (3-Month)</i>	2.50	2.67

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** and **Daniil Manaenkov**, 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 Compass; **Jack Kleinhenz**, Kleinhenz & Associates, Inc.; **Thomas Lam**, OSK-DMG/RHB; **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; **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; **Vincent Reinhart**, Morgan Stanley; **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; **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.

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 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2015	2016 (YEAR-OVER-YEAR)	2017	2018
PERCENT GROWTH AT ANNUAL RATES									
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	2.7	3.0	2.8	2.8	2.9	3.2	2.9	2.7	2.7
2. GDP PRICE INDEX (PERCENT CHANGE)	0.6	1.6	1.9	1.6	2.0	1.1	1.8	N.A.	N.A.
3. NOMINAL GDP (\$ BILLIONS)	3.5	4.2	4.5	4.5	4.5	4.2	4.8	N.A.	N.A.
4. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE)	2.3	2.0	1.9	1.9	1.8	2.2	1.8	N.A.	N.A.
(AVG MONTHLY CHANGE)	269.3	233.8	222.0	229.4	213.8	252.5	213.6	N.A.	N.A.
VARIABLES IN LEVELS									
5. UNEMPLOYMENT RATE (PERCENT)	5.6	5.5	5.4	5.2	5.2	5.4	5.1	5.0	4.9
6. 3-MONTH TREASURY BILL (PERCENT)	0.0	0.1	0.3	0.6	0.8	0.3	1.2	2.7	3.0
7. 10-YEAR TREASURY BOND (PERCENT)	2.0	2.2	2.4	2.5	2.7	2.3	3.1	3.9	4.1
	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2015	2016 (Q4-OVER-Q4)	2017	
INFLATION INDICATORS									
8. CPI (ANNUAL RATE)	-1.4	1.6	1.9	2.0	2.1	1.1	2.1	2.3	
9. CORE CPI (ANNUAL RATE)	1.3	1.7	1.8	1.8	1.9	1.7	1.9	2.1	
10. PCE (ANNUAL RATE)	-0.6	1.4	1.9	1.8	1.8	1.1	1.9	2.1	
11. CORE PCE (ANNUAL RATE)	1.2	1.4	1.5	1.7	1.6	1.4	1.7	1.9	

THE FIGURES ON EACH LINE ARE MEDIANS OF 39 INDIVIDUAL FORECASTERS.

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

# **SURVEY OF PROFESSIONAL FORECASTERS**

**First 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 January 30; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before February 10, 2015.

TABLE ONE  
MAJOR MACROECONOMIC INDICATORS  
MEDIAN OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL		FORECAST				ACTUAL		FORECAST		
		2014 Q4	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2014 ANNUAL	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL	2018 ANNUAL
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	38	17711	17864	18048	18249	18449	18652	17421	18156	19022	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	38	108.64	108.81	109.25	109.76	110.19	110.74	108.31	109.53	111.47	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	17	N.A.	1629.2	1659.1	1682.9	1705.2	1717.2	N.A.	1652.6	1752.9	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	39	5.7	5.6	5.5	5.4	5.2	5.2	6.1	5.4	5.1	5.0	4.9
5. NONFARM PAYROLL EMPLOYMENT (THOUSANDS)	31	140061	140869	141570	142236	142925	143566	138890	141920	144484	N.A.	N.A.
6. INDUSTRIAL PRODUCTION (2007=100)	33	106.1	107.1	108.0	108.8	109.7	110.4	104.2	108.4	111.5	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	36	1.07	1.09	1.13	1.18	1.22	1.25	1.00	1.15	1.30	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	36	0.02	0.05	0.10	0.30	0.56	0.84	0.03	0.26	1.21	2.66	3.00
9. AAA CORPORATE BOND YIELD (PERCENT)	27	3.88	3.65	3.80	4.00	4.13	4.30	4.16	3.87	4.50	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	26	4.74	4.53	4.70	4.83	4.96	5.09	4.85	4.78	5.28	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	38	2.28	1.97	2.22	2.43	2.52	2.75	2.54	2.30	3.11	3.86	4.09
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	37	16312	16419	16542	16657	16771	16893	16090	16598	17074	17536	18003
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	35	11114.9	11206.2	11293.2	11377.0	11467.0	11540.8	10967.8	11329.7	11662.5	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	34	2154.8	2178.9	2206.5	2239.0	2266.9	2290.2	2112.7	2223.2	2331.3	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	504.6	513.3	524.4	537.6	551.2	564.5	496.3	532.1	581.1	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	1119.7	1122.0	1123.9	1127.1	1128.6	1130.2	1123.4	1125.3	1132.0	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	33	1775.2	1780.8	1787.1	1794.2	1801.0	1806.0	1764.9	1791.0	1812.3	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	33	113.1	84.0	75.0	73.0	68.0	62.4	78.8	75.2	61.4	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	34	-471.5	-477.9	-489.7	-500.9	-509.8	-520.5	-452.6	-493.5	-532.6	N.A.	N.A.

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

TABLE TWO  
MAJOR MACROECONOMIC INDICATORS  
PERCENTAGE CHANGES AT ANNUAL RATES

	NUMBER OF FORECASTERS	Q4 2014 TO Q1 2015	Q1 2015 TO Q2 2015	Q2 2015 TO Q3 2015	Q3 2015 TO Q4 2015	Q4 2015 TO Q1 2016	2014 TO 2015	2015 TO 2016	2016 TO 2017	2017 TO 2018
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	38	3.5	4.2	4.5	4.5	4.5	4.2	4.8	N.A.	N.A.
2. GDP PRICE INDEX (2009=100)	38	0.6	1.6	1.9	1.6	2.0	1.1	1.8	N.A.	N.A.
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	17	7.5	7.5	5.9	5.4	2.8	9.3	6.1	N.A.	N.A.
4. UNEMPLOYMENT RATE (PERCENT)	39	-0.1	-0.1	-0.1	-0.2	-0.0	-0.7	-0.3	-0.1	-0.0
5. NONFARM PAYROLL EMPLOYMENT (PERCENT CHANGE) (AVG MONTHLY CHANGE)	31 31	2.3 269.3	2.0 233.8	1.9 222.0	1.9 229.4	1.8 213.8	2.2 252.5	1.8 213.6	N.A. N.A.	N.A. N.A.
6. INDUSTRIAL PRODUCTION (2007=100)	33	3.8	3.4	3.1	3.2	2.7	4.0	2.8	N.A.	N.A.
7. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	36	6.6	14.1	19.4	12.8	9.8	14.7	12.8	N.A.	N.A.
8. 3-MONTH TREASURY BILL RATE (PERCENT)	36	0.03	0.05	0.20	0.26	0.28	0.23	0.94	1.46	0.34
9. AAA CORPORATE BOND YIELD (PERCENT)	27	-0.23	0.15	0.20	0.13	0.17	-0.29	0.63	N.A.	N.A.
10. BAA CORPORATE BOND YIELD (PERCENT)	26	-0.21	0.17	0.13	0.13	0.13	-0.07	0.50	N.A.	N.A.
11. 10-YEAR TREASURY BOND YIELD (PERCENT)	38	-0.31	0.25	0.21	0.08	0.23	-0.24	0.81	0.75	0.22
12. REAL GDP (BILLIONS, CHAIN WEIGHTED)	37	2.7	3.0	2.8	2.8	2.9	3.2	2.9	2.7	2.7
13. TOTAL CONSUMPTION EXPENDITURE (BILLIONS, CHAIN WEIGHTED)	35	3.3	3.1	3.0	3.2	2.6	3.3	2.9	N.A.	N.A.
14. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	34	4.6	5.1	6.0	5.1	4.2	5.2	4.9	N.A.	N.A.
15. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	33	7.1	8.9	10.5	10.5	10.0	7.2	9.2	N.A.	N.A.
16. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	34	0.8	0.7	1.1	0.5	0.6	0.2	0.6	N.A.	N.A.
17. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	33	1.3	1.4	1.6	1.5	1.1	1.5	1.2	N.A.	N.A.
18. CHANGE IN PRIVATE INVENTORIES (BILLIONS, CHAIN WEIGHTED)	33	-29.1	-9.0	-2.0	-5.0	-5.6	-3.6	-13.8	N.A.	N.A.
19. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	34	-6.4	-11.8	-11.2	-8.8	-10.8	-40.9	-39.1	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, FIRST QUARTER 2015.

TABLE THREE  
 MAJOR PRICE INDICATORS  
 MEDIANS OF FORECASTER PREDICTIONS

	NUMBER OF FORECASTERS	ACTUAL	FORECAST(Q/Q)					ACTUAL	FORECAST(Q4/Q4)			
		2014 Q4	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2014 ANNUAL	2015 ANNUAL	2016 ANNUAL	2017 ANNUAL	
1. CONSUMER PRICE INDEX (ANNUAL RATE)	37	-1.2	-1.4	1.6	1.9	2.0	2.1	1.2	1.1	2.1	2.3	
2. CORE CONSUMER PRICE INDEX (ANNUAL RATE)	35	1.4	1.3	1.7	1.8	1.8	1.9	1.7	1.7	1.9	2.1	
3. PCE PRICE INDEX (ANNUAL RATE)	32	-0.5	-0.6	1.4	1.9	1.8	1.8	1.1	1.1	1.9	2.1	
4. CORE PCE PRICE INDEX (ANNUAL RATE)	34	1.1	1.2	1.4	1.5	1.7	1.6	1.4	1.4	1.7	1.9	

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

TABLE FOUR  
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015
	TO Q1 2015	TO Q2 2015	TO Q3 2015	TO Q4 2015	TO Q1 2016
NUMBER OF FORECASTERS					
10 OR LESS	27	27	18	17	16
11 TO 20	6	5	14	15	15
21 TO 30	0	1	1	1	1
31 TO 40	0	0	0	0	1
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	6.00	10.00	10.00	10.00	12.00
MEAN PROBABILITY	7.90	9.30	11.14	11.85	13.20

NOTE: TOTAL NUMBER OF FORECASTERS REPORTING IS 33.  
SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, FIRST 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	0.09	0.14	0.07
8.0 TO 8.9 PERCENT	0.12	0.14	0.37	0.52
7.5 TO 7.9 PERCENT	0.18	0.27	0.69	1.09
7.0 TO 7.4 PERCENT	0.45	0.80	1.88	1.81
6.5 TO 6.9 PERCENT	1.83	2.68	4.32	4.49
6.0 TO 6.4 PERCENT	9.36	7.63	9.27	8.98
5.5 TO 5.9 PERCENT	38.01	22.00	17.96	19.24
5.0 TO 5.4 PERCENT	43.82	39.18	29.07	29.29
4.0 TO 4.9 PERCENT	5.38	24.57	31.38	29.74
LESS THAN 4.0 PERCENT	0.85	2.64	4.90	4.77

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	0.64	0.72	0.53	0.50
5.0 TO 5.9	1.84	1.70	1.69	1.86
4.0 TO 4.9	9.05	8.84	8.33	7.18
3.0 TO 3.9	36.63	26.63	24.38	23.80
2.0 TO 2.9	37.53	39.22	37.90	38.07
1.0 TO 1.9	10.09	15.69	18.02	18.39
0.0 TO 0.9	2.83	5.21	6.79	6.91
-1.0 TO -0.1	0.87	1.46	1.56	2.32
-2.0 TO -1.1	0.36	0.42	0.77	0.80
-3.0 TO -2.1	0.16	0.11	0.09	0.15
LESS THAN -3.0	0.00	0.00	0.02	0.02

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

	2014-2015	2015-2016
4.0 OR MORE	0.08	0.12
3.5 TO 3.9	0.08	0.68
3.0 TO 3.4	0.78	2.34
2.5 TO 2.9	4.63	9.62
2.0 TO 2.4	11.78	26.27
1.5 TO 1.9	22.48	32.78
1.0 TO 1.4	33.64	17.99
0.5 TO 0.9	20.21	7.00
0.0 TO 0.4	5.57	2.52
WILL DECLINE	0.75	0.69

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA.  
SURVEY OF PROFESSIONAL FORECASTERS, FIRST 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	0.40	0.83
3.5 TO 3.9 PERCENT	0.65	0.90
3.0 TO 3.4 PERCENT	1.94	3.37
2.5 TO 2.9 PERCENT	6.56	11.60
2.0 TO 2.4 PERCENT	17.42	29.91
1.5 TO 1.9 PERCENT	36.34	33.83
1.0 TO 1.4 PERCENT	25.48	13.31
0.5 TO 0.9 PERCENT	8.18	3.86
0.0 TO 0.4 PERCENT	2.45	1.74
WILL DECLINE	0.76	0.66

MEAN PROBABILITY ATTACHED TO CORE PCE INFLATION:

	14Q4 TO 15Q4	15Q4 TO 16Q4
4 PERCENT OR MORE	0.16	0.40
3.5 TO 3.9 PERCENT	0.37	0.58
3.0 TO 3.4 PERCENT	1.88	2.49
2.5 TO 2.9 PERCENT	4.94	9.01
2.0 TO 2.4 PERCENT	13.60	30.64
1.5 TO 1.9 PERCENT	32.56	33.53
1.0 TO 1.4 PERCENT	27.72	15.82
0.5 TO 0.9 PERCENT	14.59	5.36
0.0 TO 0.4 PERCENT	3.47	1.49
WILL DECLINE	0.73	0.68

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

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

ANNUAL AVERAGE OVER THE NEXT 5 YEARS: 2015-2019

=====

CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.10	MINIMUM	0.90
LOWER QUARTILE	1.90	LOWER QUARTILE	1.70
MEDIAN	2.00	MEDIAN	1.80
UPPER QUARTILE	2.20	UPPER QUARTILE	2.00
MAXIMUM	2.60	MAXIMUM	2.40
MEAN	2.03	MEAN	1.83
STD. DEVIATION	0.33	STD. DEVIATION	0.30
N	35	N	33
MISSING	4	MISSING	6

ANNUAL AVERAGE OVER THE NEXT 10 YEARS: 2015-2024

=====

CPI INFLATION RATE		PCE INFLATION RATE	
-----		-----	
MINIMUM	1.40	MINIMUM	1.30
LOWER QUARTILE	2.00	LOWER QUARTILE	1.85
MEDIAN	2.10	MEDIAN	2.00
UPPER QUARTILE	2.30	UPPER QUARTILE	2.11
MAXIMUM	3.10	MAXIMUM	2.50
MEAN	2.14	MEAN	1.94
STD. DEVIATION	0.31	STD. DEVIATION	0.26
N	33	N	31
MISSING	6	MISSING	8

REAL GDP GROWTH RATE		PRODUCTIVITY GROWTH RATE	
-----		-----	
MINIMUM	1.80	MINIMUM	0.10
LOWER QUARTILE	2.30	LOWER QUARTILE	1.50
MEDIAN	2.50	MEDIAN	1.70
UPPER QUARTILE	2.68	UPPER QUARTILE	2.00
MAXIMUM	3.07	MAXIMUM	2.40
MEAN	2.51	MEAN	1.63
STD. DEVIATION	0.28	STD. DEVIATION	0.55
N	28	N	21
MISSING	11	MISSING	18

STOCK RETURNS (S&P 500)		BOND RETURNS (10-YEAR)		BILL RETURNS (3-MONTH)	
-----		-----		-----	
MINIMUM	1.70	MINIMUM	2.44	MINIMUM	0.30
LOWER QUARTILE	5.00	LOWER QUARTILE	3.75	LOWER QUARTILE	2.21
MEDIAN	5.45	MEDIAN	3.98	MEDIAN	2.67
UPPER QUARTILE	7.00	UPPER QUARTILE	4.50	UPPER QUARTILE	3.00
MAXIMUM	8.10	MAXIMUM	5.00	MAXIMUM	3.90
MEAN	5.79	MEAN	3.91	MEAN	2.55
STD. DEVIATION	1.38	STD. DEVIATION	0.70	STD. DEVIATION	0.74
N	20	N	25	N	24
MISSING	19	MISSING	14	MISSING	15

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



THE

# LIVINGSTON SURVEY

Release Date: December 12, 2014

## DECEMBER 2014

### **Forecasters Predict Steady Growth and Lower Unemployment**

The 29 participants in the December *Livingston Survey* predict fairly steady output growth through the end of 2015. The forecasters, who are surveyed by the Federal Reserve Bank of Philadelphia twice a year, project that the economy's output (real GDP) will grow at an annual rate of 3.1 percent for the second half of 2014. They predict that the growth rate of economic output will be 2.9 percent (annual rate) in the first half of 2015 and 2.7 percent (annual rate) in the second half of 2015. The current projection for growth in the second half of 2014 is 0.1 percentage point higher than the projection from the survey of six months ago, while the forecast for the first half of 2015 is unchanged.

The forecasters see the unemployment rate falling next year, and the projections have been revised downward. The forecasters predict that the unemployment rate will be 5.7 percent in December 2014 and 5.6 percent in June 2015. The current projections for December 2014 and June 2015 are down 0.4 and 0.3 percentage points, respectively, from the last survey. The unemployment rate will fall to 5.4 percent in December 2015.

	<i>Growth Rate of Real GDP (%)</i>			<i>Unemployment Rate (%)</i>	
	<i>Previous</i>	<i>New</i>		<i>Previous</i>	<i>New</i>
<i>Half-year data:</i>					
2014 Q2 to 2014 Q4	3.0	3.1	December 2014	6.1	5.7
2014 Q4 to 2015 Q2	2.9	2.9	June 2015	5.9	5.6
2015 Q2 to 2015 Q4	N.A.	2.7	December 2015	N.A.	5.4

### **Forecasters See Lower CPI and PPI Inflation in 2015**

On an annual-average over annual-average basis, CPI inflation is expected to be 1.7 percent in 2014 and 1.4 percent in 2015. The 2015 projection is down 0.6 percentage point from the estimate in the June survey. PPI inflation is expected to be 2.1 percent in 2014 and 1.1 percent in 2015. These projections are down 0.3 and 0.6 percentage points, respectively, from those of the last survey.

	<i>CPI Inflation (%)</i>		<i>PPI Inflation (%)</i>	
	<i>Previous</i>	<i>New</i>	<i>Previous</i>	<i>New</i>
<i>Annual-average data:</i>				
2013 to 2014	1.8	1.7	2.4	2.1
2014 to 2015	2.0	1.4	1.7	1.1
2015 to 2016	N.A.	2.1	N.A.	1.5

**RESEARCH DEPARTMENT** FEDERAL RESERVE BANK OF PHILADELPHIA

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***Long-Term Interest Rates Revised Downward***

The forecast for the interest rate on three-month Treasury bills is little changed from that of six months ago, while the forecast for 10-year Treasury bonds reflects a downward revision. At the end of June 2015, the interest rate on three-month Treasury bills is predicted to be 0.25 percent, revised up from 0.20 percent in the survey of six months ago. The forecasters predict that the rate will be 0.81 percent at the end of 2015 and 2.25 percent at the end of 2016. The interest rate on 10-year Treasury bonds is predicted to reach 2.72 percent at the end of June 2015, down from the previous estimate of 3.50 percent. According to the forecasters, the 10-year rate will rise to 3.20 percent at the end of 2015, and to 3.75 percent at the end of 2016.

	<i>3-Month Treasury Bill</i>		<i>10-Year Treasury Bond</i>	
	<i>Interest Rate</i>		<i>Interest Rate</i>	
	<i>Previous</i>	<i>New</i>	<i>Previous</i>	<i>New</i>
Dec. 31, 2014	0.07	0.03	3.10	2.40
June 30, 2015	0.20	0.25	3.50	2.72
Dec. 31, 2015	0.95	0.81	3.75	3.20
Dec. 30, 2016	N.A.	2.25	N.A.	3.75

**2014 Livingston Survey Participants**

<b>S. Anderson</b>	<b>Bank of the West</b>	<b>J. Lonski</b>	<b>Moody's Capital Markets Group</b>
<b>B. Bovino</b>	<b>Standard &amp; Poor's</b>	<b>G. Mokrzan</b>	<b>Huntington National Bank</b>
<b>J. Butkiewicz</b>	<b>University of Delaware</b>	<b>M. Moran</b>	<b>Daiwa Capital Markets America</b>
<b>R. Chase</b>	<b>Economic &amp; Policy Resources, Inc.</b>	<b>F. Nothaft</b>	<b>Federal Home Loan Mortgage Corp.</b>
<b>C. Chrappa</b>	<b>Independent Equipment Company</b>	<b>M. Regalia</b>	<b>U.S. Chamber of Commerce</b>
<b>D. Crowe</b>	<b>National Association of Home Builders</b>	<b>V. Reinhart</b>	<b>Morgan Stanley &amp; Co., Inc.</b>
<b>R. Dhawan</b>	<b>Georgia State University</b>	<b>C. Rupkey</b>	<b>Bank of Tokyo-Mitsubishi UFJ</b>
<b>M. Englund</b>	<b>Action Economics, LLC</b>	<b>J. Silvia</b>	<b>Wells Fargo Securities, LLC</b>
<b>K. Goldstein/B. Ark</b>	<b>Conference Board</b>	<b>J. Smith</b>	<b>Parsec Financial Management, Inc.</b>
<b>P. Hooper</b>	<b>Deutsche Bank Securities, Inc.</b>	<b>S. Snaith</b>	<b>University of Central Florida</b>
<b>B. Horrigan</b>	<b>Loomis Sayles &amp; Co.</b>	<b>S. Stanley</b>	<b>Pierpont Securities</b>
<b>S. Kahan</b>	<b>Kahan Consulting Ltd.</b>	<b>D. Torgerson</b>	<b>USDA</b>
<b>D. Knop</b>	<b>Independent Economist</b>	<b>B. Wesbury/R. Stein</b>	<b>First Trust Advisors, L.P.</b>
<b>T. Lam</b>	<b>OSK-DMG</b>	<b>L. Yun/D. Hale</b>	<b>National Association of Realtors</b>
<b>E. Leamer/D. Shulman</b>	<b>University of California, Los Angeles</b>		

### ***Outlook for Long-Term Inflation Revised Downward***

The panelists project lower long-term inflation, compared with their projection in the June 2014 survey, but their projection for long-term output growth is unchanged. The forecasters now predict that inflation (measured by the CPI) will grow 2.25 percent annually over the next 10 years, which is lower than the forecast of 2.35 percent in the survey of six months ago. Real GDP growth is expected to average 2.50 percent over the next 10 years, the same estimate as in the previous survey.

### ***Stock Prices Are Projected to Rise***

The forecasters predict the S&P 500 index will finish 2014 at a level of 2065.0, an upward revision from the estimate of 1950.0 in the June 2014 survey. They also see stock prices increasing over the next two years, with the index rising to 2125.0 by the end of June 2015, to 2160.6 by the end of 2015, and then to 2300.0 by the end of 2016.

#### *Stock Prices (end of period)*

##### *S&P 500 Index*

*Previous      New*

Dec. 31, 2014	1950.0	2065.0
June 30, 2015	1999.8	2125.0
Dec. 31, 2015	2026.5	2160.6
Dec. 30, 2016	N.A.	2300.0

The Philadelphia Fed's *Livingston Survey* is the oldest continuous survey of economists' expectations. The survey was started in 1946 by the late columnist Joseph A. Livingston. It summarizes the forecasts of economists from industry, government, banking, and academia. It is published twice a year, in June and December.

To subscribe to the survey, go to [http://www.philadelphiafed.org/philscriber/user/dsp\\_content.cfm](http://www.philadelphiafed.org/philscriber/user/dsp_content.cfm).

LIVINGSTON SURVEY  
MAJOR MACROECONOMIC INDICATORS, 2014-2016

QUARTERLY INDICATORS (percentage changes at annual rates)	Q2 2014 TO Q4 2014	Q4 2014 TO Q2 2015	Q2 2015 TO Q4 2015	2013 TO 2014	2014 TO 2015	2015 TO 2016
Real Gross Domestic Product	3.1	2.9	2.7	2.3	3.0	2.8
Nominal Gross Domestic Product	4.5	4.8	4.7	3.8	4.7	4.8
Nonresidential Fixed Investment	5.9	5.3	5.8	6.1	5.8	5.6
Corporate Profits After Taxes	11.7	5.1	5.0	-7.6	8.9	4.5
MONTHLY INDICATORS (percentage changes at annual rates)	JUN 2014 TO DEC 2014	DEC 2014 TO JUN 2015	JUN 2015 TO DEC 2015	2013 TO 2014	2014 TO 2015	2015 TO 2016
Industrial Production	2.9	3.0	3.7	4.0	3.7	3.4
Producer Prices - Finished Goods	-1.6	1.6	1.6	2.1	1.1	1.5
Consumer Price Index (CPI-U)	0.3	1.7	2.1	1.7	1.4	2.1
Average Weekly Earnings in Mfg.	1.6	2.3	2.3	1.8	2.3	2.5
Retail Trade	2.9	4.8	4.3	4.0	4.4	4.5
(levels of variables)	DEC 2014	JUN 2015	DEC 2015	2014	2015	2016
Total Private Housing Starts (annual rate, millions)	1.040	1.131	1.231	0.999	1.165	1.332
Unemployment Rate (percent)	5.7	5.6	5.4	6.2	5.6	5.3
Automobile Sales (incl. foreign) (annual rate, millions)	7.8	8.0	7.9	7.7	7.9	8.1
FINANCIAL INDICATORS (levels of variables at end of month)	DEC 2014	JUN 2015	DEC 2015	DEC 2016		
Prime Interest Rate	3.25	3.25	3.85	5.25		
10-Year Treasury Note Yield	2.40	2.72	3.20	3.75		
3-Month Treasury Bill Rate	0.03	0.25	0.81	2.25		
Stock Prices (S&P500)	2065.0	2125.0	2160.6	2300.0		

LONG-TERM OUTLOOK

Average Annual Growth Rate for the Next Ten Years

Real GDP 2.50

Consumer Price Index 2.25

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2014

# **LIVINGSTON SURVEY**

**December 2014**

**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 November 20; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before December 4.**

TABLE ONE  
MAJOR MACROECONOMIC INDICATORS, 2014-2016  
MEDIANS OF FORECASTER PREDICTIONS

QUARTERLY INDICATORS	NUMBER OF FORE- CASTERS	ACTUAL				FORECASTS			
		2014 Q2	2014 Q4	2015 Q2	2015 Q4	2013	2014	2015	2016
1. Real Gross Domestic Product (billions, chain weighted)	29	16010.4	16259.4	16494.3	16716.6	15710.3	16066.4	16546.8	17017.6
2. Nominal Gross Domestic Product (\$ billions)	28	17328.2	17713.2	18131.0	18547.9	16768.1	17412.5	18236.7	19109.7
3. Nonresidential Fixed Investment (billions, chain weighted)	27	2099.6	2160.6	2217.0	2280.0	1990.6	2111.7	2235.1	2359.8
4. Corporate Profits After Taxes (\$ billions)	18	1498.2	1583.6	1623.2	1663.4	1632.6	1508.8	1643.3	1716.5
MONTHLY INDICATORS		ACTUAL		FORECASTS		ACTUAL		FORECASTS	
		JUN 2014	DEC 2014	JUN 2015	DEC 2015	2013	2014	2015	2016
5. Industrial Production (2007=100)	25	104.0	105.5	107.1	109.0	99.9	103.9	107.7	111.4
6. Total Private Housing Starts (annual rate, millions)	26	0.909	1.040	1.131	1.231	0.930	0.999	1.165	1.332
7. Producer Prices - Finished Goods (index level)	20	202.4	200.8	202.4	204.1	196.7	200.8	203.0	206.1
8. Consumer Price Index (CPI-U) (index level)	27	237.7	238.0	240.0	242.5	233.0	236.9	240.3	245.3
9. Unemployment Rate (percent)	27	6.1	5.7	5.6	5.4	7.3	6.2	5.6	5.3
10. Average Weekly Earnings in Mfg. (\$)	12	824.8	831.4	840.8	850.2	807.5	822.2	841.1	862.1
11. Retail Trade (\$ billions)	15	440.3	446.6	457.2	467.0	422.2	438.9	458.3	478.9
12. Automobile Sales (incl. foreign) (annual rate, millions)	18	8.1	7.8	8.0	7.9	7.6	7.7	7.9	8.1

TABLE ONE (CONTINUED)

INTEREST RATES & STOCK PRICES (end of period)		ACTUAL		FORECASTS		
		JUN 2014	DEC 2014	JUN 2015	DEC 2015	DEC 2016
13. Prime Interest Rate (percent)	27	3.25	3.25	3.25	3.85	5.25
14. 10-Year Treasury Note Yield (percent)	28	2.53	2.40	2.72	3.20	3.75
15. 3-Month Treasury Bill Rate (percent)	27	0.04	0.03	0.25	0.81	2.25
16. Stock Prices (S&P500) (index level)	18	1960.2	2065.0	2125.0	2160.6	2300.0

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2014

TABLE TWO  
 MAJOR MACROECONOMIC INDICATORS, 2014-2016  
 PERCENTAGE CHANGES AT ANNUAL RATES

QUARTERLY INDICATORS	NUMBER OF FORE- CASTERS	Q2 2014	Q4 2014	Q2 2015	2013	2014	2015
		TO Q4 2014	TO Q2 2015	TO Q4 2015	TO 2014	TO 2015	TO 2016
1. Real Gross Domestic Product	29	3.1	2.9	2.7	2.3	3.0	2.8
2. Nominal Gross Domestic Product	28	4.5	4.8	4.7	3.8	4.7	4.8
3. Nonresidential Fixed Investment	27	5.9	5.3	5.8	6.1	5.8	5.6
4. Corporate Profits After Taxes	18	11.7	5.1	5.0	-7.6	8.9	4.5
MONTHLY INDICATORS		JUN 2014	DEC 2014	JUN 2015	2013	2014	2015
		TO DEC 2014	TO JUN 2015	TO DEC 2015	TO 2014	TO 2015	TO 2016
5. Industrial Production	25	2.9	3.0	3.7	4.0	3.7	3.4
6. Total Private Housing Starts	26	0.131	0.091	0.101	0.069	0.166	0.167
7. Producer Prices - Finished Goods	20	-1.6	1.6	1.6	2.1	1.1	1.5
8. Consumer Price Index (CPI-U)	27	0.3	1.7	2.1	1.7	1.4	2.1
9. Unemployment Rate	27	-0.4	-0.1	-0.2	-1.2	-0.6	-0.3
10. Average Weekly Earnings in Mfg.	12	1.6	2.3	2.3	1.8	2.3	2.5
11. Retail Trade	15	2.9	4.8	4.3	4.0	4.4	4.5
12. Automobile Sales (incl. foreign)	18	-0.3	0.2	-0.1	0.1	0.2	0.2

		JUN 2014	DEC 2014	JUN 2015	DEC 2015
		TO	TO	TO	TO
INTEREST RATES & STOCK PRICES		DEC 2014	JUN 2015	DEC 2015	DEC 2016
13. Prime Interest Rate	27	0.00	0.00	0.60	1.40
14. 10-Year Treasury Note Yield	28	-0.13	0.32	0.48	0.55
15. 3-Month Treasury Bill Rate	27	-0.01	0.22	0.56	1.44
16. Stock Prices (S&P500)	18	11.0	5.9	3.4	6.5

Note: Figures for housing starts, unemployment rate, auto sales, prime interest rate, 10-year Treasury bond, and 90-day Treasury bill are changes in levels. All others are percentage changes at annual rates.

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2014

TABLE THREE  
LONG-TERM (10 YEAR) FORECASTS

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SERIES: CPI Inflation Rate

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STATISTIC	
Minimum	1.40
Lower Quartile	1.95
Median	2.25
Upper Quartile	2.50
Maximum	2.90
Mean	2.21
Std. Deviation	0.39
N	29
Missing	0

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SERIES: Real GDP

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STATISTIC	
Minimum	1.80
Lower Quartile	2.30
Median	2.50
Upper Quartile	2.65
Maximum	3.10
Mean	2.50
Std. Deviation	0.28
N	29
Missing	0

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Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2014

# FEDERAL RESERVE statistical release



## H.15 (519) SELECTED INTEREST RATES

For use at 2:30 p.m. Eastern Time

Yields in percent per annum

January 5, 2015

Instruments	2014	2014	2014	2015	2015	Week Ending		2014
	Dec 29	Dec 30	Dec 31	Jan 1*	Jan 2	Jan 2	Dec 26	Dec
Federal funds (effective) <sup>1 2 3</sup>	0.13	0.13	0.06	0.06	0.12	0.12	0.13	0.12
Commercial Paper <sup>3 4 5 6</sup>								
Nonfinancial								
1-month	0.17	0.08	n.a.		0.13	0.13	0.10	0.11
2-month	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	0.11
3-month	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	0.13
Financial								
1-month	0.10	n.a.	n.a.		0.12	0.11	0.11	0.11
2-month	0.14	0.14	n.a.		0.14	0.14	0.14	0.14
3-month	0.17	0.16	0.18		0.16	0.17	0.16	0.15
Eurodollar deposits (London) <sup>3 7</sup>								
1-month	0.19	0.19	0.19		0.19	0.19	0.19	0.18
3-month	0.30	0.30	0.30		0.30	0.30	0.30	0.26
6-month	0.37	0.37	0.37		0.37	0.37	0.37	0.36
Bank prime loan <sup>2 3 8</sup>	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Discount window primary credit <sup>2 9</sup>	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
U.S. government securities								
Treasury bills (secondary market) <sup>3 4</sup>								
4-week	0.01	0.03	0.03		0.02	0.02	0.01	0.03
3-month	0.03	0.03	0.04		0.02	0.03	0.03	0.03
6-month	0.12	0.12	0.12		0.11	0.12	0.14	0.11
1-year	0.22	0.20	0.22		0.22	0.22	0.25	0.20
Treasury constant maturities								
Nominal <sup>10</sup>								
1-month	0.01	0.03	0.03		0.02	0.02	0.01	0.03
3-month	0.03	0.03	0.04		0.02	0.03	0.03	0.03
6-month	0.12	0.12	0.12		0.11	0.12	0.14	0.11
1-year	0.25	0.23	0.25		0.25	0.25	0.27	0.21
2-year	0.72	0.69	0.67		0.66	0.69	0.73	0.64
3-year	1.14	1.11	1.10		1.07	1.11	1.17	1.06
5-year	1.72	1.68	1.65		1.61	1.67	1.74	1.64
7-year	2.02	2.00	1.97		1.92	1.98	2.05	1.98
10-year	2.22	2.20	2.17		2.12	2.18	2.24	2.21
20-year	2.51	2.49	2.47		2.41	2.47	2.54	2.55
30-year	2.78	2.76	2.75		2.69	2.75	2.81	2.83
Inflation indexed <sup>11</sup>								
5-year	0.50	0.47	0.38		0.31	0.42	0.46	0.37
7-year	0.55	0.54	0.44		0.37	0.48	0.50	0.47
10-year	0.57	0.56	0.49		0.41	0.51	0.55	0.51
20-year	0.74	0.75	0.68		0.61	0.70	0.74	0.73
30-year	0.88	0.88	0.83		0.76	0.84	0.89	0.89
Inflation-indexed long-term average <sup>12</sup>	0.76	0.76	0.71		0.64	0.72	0.75	0.74
Interest rate swaps <sup>13</sup>								
1-year	0.44	0.44	0.44		0.45	0.44	0.45	0.41
2-year	0.89	0.89	0.89		0.89	0.89	0.92	0.84
3-year	1.30	1.28	1.29		1.28	1.29	1.33	1.24
4-year	1.60	1.57	1.58		1.55	1.57	1.63	1.54
5-year	1.81	1.78	1.79		1.74	1.78	1.84	1.76
7-year	2.08	2.05	2.06		2.00	2.05	2.12	2.06
10-year	2.32	2.29	2.31		2.23	2.28	2.36	2.33
30-year	2.72	2.70	2.71		2.65	2.69	2.77	2.80
Corporate bonds								
Moody's seasoned								
Aaa <sup>14</sup>	3.75	3.73	3.72		3.67	3.72	3.79	3.79
Baa	4.71	4.69	4.68		4.63	4.68	4.75	4.74
State & local bonds <sup>15</sup>				3.56		3.56	3.65	3.70
Conventional mortgages <sup>16</sup>				3.87		3.87	3.83	3.86

See overleaf for footnotes.

\* Markets closed.

n.a. Not available.

# Footnotes

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1. The daily effective federal funds rate is a weighted average of rates on brokered trades.
2. Weekly figures are averages of 7 calendar days ending on Wednesday of the current week; monthly figures include each calendar day in the month.
3. Annualized using a 360-day year or bank interest.
4. On a discount basis.
5. Interest rates interpolated from data on certain commercial paper trades settled by The Depository Trust Company. The trades represent sales of commercial paper by dealers or direct issuers to investors (that is, the offer side). The 1-, 2-, and 3-month rates are equivalent to the 30-, 60-, and 90-day dates reported on the Board's Commercial Paper Web page ([www.federalreserve.gov/releases/cp/](http://www.federalreserve.gov/releases/cp/)).
6. Financial paper that is insured by the FDIC's Temporary Liquidity Guarantee Program is not excluded from relevant indexes, nor is any financial or nonfinancial commercial paper that may be directly or indirectly affected by one or more of the Federal Reserve's liquidity facilities. Thus the rates published after September 19, 2008, likely reflect the direct or indirect effects of the new temporary programs and, accordingly, likely are not comparable for some purposes to rates published prior to that period.
7. Source: Bloomberg and CTRB ICAP Fixed Income & Money Market Products.
8. Rate posted by a majority of top 25 (by assets in domestic offices) insured U.S.-chartered commercial banks. Prime is one of several base rates used by banks to price short-term business loans.
9. The rate charged for discounts made and advances extended under the Federal Reserve's primary credit discount window program, which became effective January 9, 2003. This rate replaces that for adjustment credit, which was discontinued after January 8, 2003. For further information, see [www.federalreserve.gov/boarddocs/press/bcreg/2002/200210312/default.htm](http://www.federalreserve.gov/boarddocs/press/bcreg/2002/200210312/default.htm). The rate reported is that for the Federal Reserve Bank of New York. Historical series for the rate on adjustment credit as well as the rate on primary credit are available at [www.federalreserve.gov/releases/h15/data.htm](http://www.federalreserve.gov/releases/h15/data.htm).
10. Yields on actively traded non-inflation-indexed issues adjusted to constant maturities. The 30-year Treasury constant maturity series was discontinued on February 18, 2002, and reintroduced on February 9, 2006. From February 18, 2002, to February 9, 2006, the U.S. Treasury published a factor for adjusting the daily nominal 20-year constant maturity in order to estimate a 30-year nominal rate. The historical adjustment factor can be found at [www.treasury.gov/resource-center/data-chart-center/interest-rates/](http://www.treasury.gov/resource-center/data-chart-center/interest-rates/). Source: U.S. Treasury.
11. Yields on Treasury inflation protected securities (TIPS) adjusted to constant maturities. Source: U.S. Treasury. Additional information on both nominal and inflation-indexed yields may be found at [www.treasury.gov/resource-center/data-chart-center/interest-rates/](http://www.treasury.gov/resource-center/data-chart-center/interest-rates/).
12. Based on the unweighted average bid yields for all TIPS with remaining terms to maturity of more than 10 years.
13. International Swaps and Derivatives Association (ISDA®) mid-market par swap rates. Rates are for a Fixed Rate Payer in return for receiving three month LIBOR, and are based on rates collected at 11:00 a.m. Eastern time by Thomson Reuters and published on Thomson Reuters Page ISDAFIX®1. ISDAFIX is a registered service mark of ISDA®. Source: Thomson Reuters.
14. Moody's Aaa rates through December 6, 2001, are averages of Aaa utility and Aaa industrial bond rates. As of December 7, 2001, these rates are averages of Aaa industrial bonds only. Data obtained from Bloomberg Finance L.P.
15. Bond Buyer Index, general obligation, 20 years to maturity, mixed quality; Thursday quotations. Data obtained from Bloomberg Finance L.P.
16. Contract interest rates on commitments for 30-year fixed-rate first mortgages. Source: Primary Mortgage Market Survey® data provided by Freddie Mac.

Note: Weekly and monthly figures on this release, as well as annual figures available on the Board's historical H.15 web site (see below), are averages of business days unless otherwise noted.

Current and historical H.15 data are available on the Federal Reserve Board's web site ([www.federalreserve.gov/](http://www.federalreserve.gov/)). For information about individual copies or subscriptions, contact Publications Services at the Federal Reserve Board (phone 202-452-3244, fax 202-728-5886).

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## Description of the Treasury Nominal and Inflation-Indexed Constant Maturity Series

Yields on Treasury nominal securities at "constant maturity" are interpolated by the U.S. Treasury from the daily yield curve for non-inflation-indexed Treasury securities. This curve, which relates the yield on a security to its time to maturity, is based on the closing market bid yields on actively traded Treasury securities in the over-the-counter market. These market yields are calculated from composites of quotations obtained by the Federal Reserve Bank of New York. The constant maturity yield values are read from the yield curve at fixed maturities, currently 1, 3, and 6 months and 1, 2, 3, 5, 7, 10, 20, and 30 years. This method provides a yield for a 10-year maturity, for example, even if no outstanding security has exactly 10 years remaining to maturity. Similarly, yields on inflation-indexed securities at "constant maturity" are interpolated from the daily yield curve for Treasury inflation protected securities in the over-the-counter market. The inflation-indexed constant maturity yields are read from this yield curve at fixed maturities, currently 5, 7, 10, 20, and 30 years.

[Download Page](#)

H.15 Selected Interest Rates for Feb 04, 2015

Series Description Market yield on U.S. Treasury securities at 20-year constant maturity, quoted on investment basis, inflation-indexed  
 Unit: Percent.. Per Year  
 Multiplier: 1  
 Currency: NA

Unique Identifier:	H15/H15/RIF		H15/H15/RIFLG		H15/H15/RI		H15/H15/RIFLGFCY		H15/H15/RIFLGFCY2		Inflation on 10 year	Inflation on 20 year	Used in 3 stage growth Model
	H15/H15/RIF	H15/H15/RIFLG	H15/H15/RI	H15/H15/RIFLGFCY	H15/H15/RIFLGFCY	H15/H15/RIFLGFCY2	Average	Average					
Time Period	RIFLGFCY01_N.WF	RIFLGFCY05_N.WF	RIFLGFCY05_XII_N.WF	RIFLGFCY10_N.WF	RIFLGFCY10_N.WF	RIFLGFCY10_N.WF	RIFLGFCY20_N.WF	RIFLGFCY20_N.WF	RIFLGFCY20_N.WF	RIFLGFCY20_N.WF	Average	Average	
2014-01-03	0.13	1.73	0.05	3.01	0.76	3.69	1.32	2.25	2.37	2.1025	2.214615		
2014-01-10	0.13	1.71	-0.07	2.96	0.68	3.63	1.22	2.28	2.41				
2014-01-17	0.11	1.65	-0.08	2.86	0.6	3.53	1.15	2.26	2.38				
2014-01-24	0.11	1.65	-0.08	2.82	0.62	3.47	1.14	2.2	2.33				
2014-01-31	0.11	1.55	-0.17	2.73	0.58	3.39	1.11	2.15	2.28				
2014-02-07	0.12	1.48	-0.29	2.68	0.53	3.37	1.1	2.15	2.27				
2014-02-14	0.12	1.53	-0.24	2.75	0.56	3.41	1.14	2.19	2.27				
2014-02-21	0.12	1.54	-0.23	2.73	0.6	3.42	1.16	2.13	2.26				
2014-02-28	0.11	1.52	-0.26	2.69	0.53	3.35	1.08	2.16	2.27				
2014-03-07	0.12	1.55	-0.26	2.71	0.52	3.37	1.04	2.19	2.33			Average of 10 & 20 year	
2014-03-14	0.12	1.59	-0.22	2.72	0.53	3.37	1.06	2.19	2.31			2.158558	
2014-03-21	0.14	1.67	-0.1	2.74	0.58	3.36	1.08	2.16	2.28				
2014-03-28	0.13	1.73	-0.01	2.72	0.59	3.29	1.03	2.13	2.26				
2014-04-04	0.12	1.75	0.05	2.77	0.64	3.35	1.07	2.13	2.28				
2014-04-11	0.1	1.63	-0.04	2.68	0.55	3.27	1	2.13	2.27				
2014-04-18	0.11	1.67	-0.1	2.67	0.51	3.23	0.95	2.16	2.28				
2014-04-25	0.11	1.74	-0.24	2.71	0.5	3.23	0.92	2.21	2.31				
2014-05-02	0.1	1.7	-0.26	2.66	0.48	3.2	0.9	2.18	2.3				
2014-05-09	0.1	1.65	-0.27	2.62	0.44	3.15	0.84	2.18	2.31				
2014-05-16	0.09	1.59	-0.33	2.57	0.39	3.12	0.84	2.18	2.28				
2014-05-23	0.09	1.55	-0.4	2.54	0.35	3.12	0.83	2.19	2.29				
2014-05-30	0.1	1.53	-0.42	2.47	0.25	3.05	0.73	2.22	2.32				
2014-06-06	0.1	1.64	-0.28	2.59	0.4	3.16	0.87	2.19	2.29				
2014-06-13	0.11	1.69	-0.25	2.62	0.41	3.17	0.89	2.21	2.28				
2014-06-20	0.1	1.72	-0.26	2.63	0.39	3.17	0.86	2.24	2.31				
2014-06-27	0.11	1.68	-0.36	2.57	0.3	3.12	0.77	2.27	2.35				
2014-07-04	0.11	1.68	-0.33	2.6	0.34	3.16	0.81	2.26	2.35				
2014-07-11	0.11	1.69	-0.31	2.57	0.29	3.11	0.75	2.28	2.36				
2014-07-18	0.11	1.69	-0.28	2.53	0.28	3.06	0.72	2.25	2.34				
2014-07-25	0.11	1.69	-0.25	2.49	0.24	3.01	0.65	2.25	2.36				
2014-08-01	0.12	1.73	-0.22	2.53	0.25	3.03	0.67	2.28	2.36				
2014-08-08	0.11	1.64	-0.25	2.47	0.23	3	0.66	2.24	2.34				
2014-08-15	0.1	1.59	-0.26	2.41	0.19	2.95	0.64	2.22	2.31				
2014-08-22	0.11	1.63	-0.19	2.41	0.24	2.93	0.65	2.17	2.28				
2014-08-29	0.11	1.66	-0.13	2.37	0.23	2.85	0.6	2.14	2.25				
2014-09-05	0.1	1.7	-0.07	2.44	0.28	2.93	0.64	2.16	2.29				
2014-09-12	0.11	1.78	0.05	2.54	0.42	3.01	0.77	2.12	2.24				
2014-09-19	0.12	1.82	0.17	2.61	0.54	3.1	0.89	2.07	2.21				
2014-09-26	0.1	1.79	0.17	2.55	0.54	3.01	0.89	2.01	2.12				
2014-10-03	0.11	1.73	0.15	2.47	0.51	2.92	0.85	1.96	2.07				
2014-10-10	0.1	1.61	0.08	2.36	0.41	2.82	0.77	1.95	2.05				
2014-10-17	0.1	1.41	0.02	2.19	0.29	2.67	0.64	1.9	2.03				
2014-10-24	0.11	1.47	0.02	2.25	0.35	2.73	0.7	1.9	2.03				
2014-10-31	0.11	1.57	0.09	2.32	0.41	2.78	0.76	1.91	2.02				
2014-11-07	0.12	1.63	0.08	2.36	0.42	2.79	0.77	1.94	2.02				
2014-11-14	0.14	1.64	0.13	2.36	0.45	2.8	0.78	1.91	2.02				
2014-11-21	0.14	1.64	0.22	2.33	0.49	2.78	0.79	1.84	1.99				
2014-11-28	0.14	1.56	0.13	2.25	0.42	2.68	0.74	1.83	1.94				
2014-12-05	0.15	1.6	0.23	2.27	0.5	2.69	0.8	1.77	1.89				
2014-12-12	0.2	1.61	0.34	2.19	0.49	2.55	0.73	1.7	1.82				
2014-12-19	0.23	1.61	0.4	2.14	0.49	2.47	0.69	1.65	1.78				
2014-12-26	0.27	1.74	0.46	2.24	0.55	2.54	0.74	1.69	1.8				

**ASWATH DAMODARAN'S WACC - AS OF JANUARY 2015**

For Tax Year 2015

Industry Name	Number of Firms	Beta	Cost of Equity	E/(D+E)	Std Dev in Stock	Cost of Debt	Tax Rate	After-tax Cost of Debt	D/(D+E)	Pre-Tax Cost of Capital	Cost of Capital
Advertising	52	1.18	8.96%	66.39%	51.52%	3.67%	4.13%	2.20%	33.61%	7.18%	6.69%
Aerospace/Defense	93	1.16	8.84%	84.07%	50.15%	3.67%	14.87%	2.20%	15.93%	8.02%	7.78%
Air Transport	22	0.98	7.80%	55.09%	53.32%	3.67%	18.71%	2.20%	44.91%	5.94%	5.28%
Apparel	64	0.99	7.88%	82.83%	56.24%	3.67%	11.16%	2.20%	17.17%	7.16%	6.90%
Auto & Truck	22	1.09	8.47%	48.56%	43.52%	3.17%	4.45%	1.90%	51.44%	5.74%	5.09%
Auto Parts	75	1.35	9.92%	77.73%	53.89%	3.67%	11.05%	2.20%	22.27%	8.53%	8.20%
Bank (Money Center)	13	0.81	6.81%	31.38%	39.98%	3.17%	26.43%	1.90%	68.62%	4.31%	3.44%
Banks (Regional)	676	0.53	5.20%	56.28%	37.41%	3.17%	20.66%	1.90%	43.72%	4.31%	3.76%
Beverage (Alcoholic)	22	1.06	8.24%	82.05%	55.14%	3.67%	8.54%	2.20%	17.95%	7.42%	7.16%
Beverage (Soft)	46	1.14	8.71%	81.27%	61.94%	3.67%	5.55%	2.20%	18.73%	7.77%	7.49%
Broadcasting	28	1.30	9.62%	58.46%	62.12%	3.67%	18.34%	2.20%	41.54%	7.15%	6.54%
Brokerage & Investment Banking	46	1.16	8.84%	24.78%	44.77%	3.17%	13.99%	1.90%	75.22%	4.57%	3.62%
Building Materials	39	1.12	8.59%	75.62%	43.52%	3.17%	17.45%	1.90%	24.38%	7.27%	6.96%
Business & Consumer Services	177	1.19	9.03%	76.68%	52.77%	3.67%	13.30%	2.20%	23.32%	7.78%	7.44%
Cable TV	18	0.91	7.42%	69.06%	52.83%	3.67%	21.18%	2.20%	30.94%	6.26%	5.81%
Chemical (Basic)	46	0.94	7.55%	71.27%	50.32%	3.67%	10.88%	2.20%	28.73%	6.43%	6.01%
Chemical (Diversified)	10	1.17	8.91%	75.08%	41.14%	3.17%	22.47%	1.90%	24.92%	7.48%	7.17%
Chemical (Specialty)	103	1.03	8.07%	82.40%	51.80%	3.67%	11.16%	2.20%	17.60%	7.29%	7.04%
Coal & Related Energy	42	1.64	11.61%	47.53%	74.62%	4.17%	0.99%	2.50%	52.47%	7.71%	6.83%
Computer Services	119	1.16	8.84%	78.39%	59.41%	3.67%	10.48%	2.20%	21.61%	7.72%	7.40%
Computers/Peripherals	64	1.21	9.13%	91.35%	66.35%	4.17%	7.35%	2.50%	8.65%	8.70%	8.56%
Construction Supplies	55	1.60	11.37%	68.78%	47.26%	3.17%	16.28%	1.90%	31.22%	8.81%	8.42%
Diversified	23	1.00	7.91%	62.16%	32.85%	3.17%	13.96%	1.90%	37.84%	6.12%	5.64%
Drugs (Biotechnology)	400	1.10	8.52%	92.18%	93.06%	5.17%	1.48%	3.10%	7.82%	8.26%	8.10%
Drugs (Pharmaceutical)	151	1.03	8.08%	88.17%	75.04%	4.17%	4.58%	2.50%	11.83%	7.61%	7.42%
Education	42	1.13	8.65%	71.72%	70.19%	4.17%	12.18%	2.50%	28.28%	7.39%	6.91%
Electrical Equipment	126	1.24	9.29%	85.57%	65.34%	4.17%	5.99%	2.50%	14.43%	8.55%	8.31%
Electronics (Consumer & Office)	28	1.37	10.06%	95.76%	56.16%	3.67%	4.50%	2.20%	4.24%	9.79%	9.73%
Electronics (General)	189	1.03	8.08%	87.19%	69.01%	4.17%	8.64%	2.50%	12.81%	7.58%	7.37%
Engineering/Construction	56	1.31	9.69%	78.55%	47.91%	3.17%	14.18%	1.90%	21.45%	8.29%	8.02%
Entertainment	84	1.21	9.10%	78.42%	58.48%	3.67%	4.11%	2.20%	21.58%	7.93%	7.61%
Environmental & Waste Services	103	1.28	9.56%	71.14%	65.61%	4.17%	6.31%	2.50%	28.86%	8.00%	7.52%
Farming/Agriculture	37	0.84	7.02%	62.32%	41.59%	3.17%	9.36%	1.90%	37.68%	5.57%	5.09%
Financial Svcs. (Non-bank & Insurance)	288	0.67	6.01%	7.65%	38.80%	3.17%	18.49%	1.90%	92.35%	3.39%	2.22%
Food Processing	96	0.99	7.88%	78.61%	42.05%	3.17%	13.70%	1.90%	21.39%	6.88%	6.60%
Food Wholesalers	14	1.41	10.29%	85.40%	35.73%	3.17%	13.47%	1.90%	14.60%	9.25%	9.07%
Furn/Home Furnishings	27	1.09	8.44%	78.98%	54.24%	3.67%	14.48%	2.20%	21.02%	7.43%	7.13%
Green & Renewable Energy	26	1.32	9.76%	47.63%	53.18%	3.67%	1.94%	2.20%	52.37%	6.57%	5.80%
Healthcare Products	261	0.99	7.86%	86.46%	64.48%	3.67%	6.73%	2.20%	13.54%	7.29%	7.09%
Healthcare Support Services	138	1.05	8.23%	78.95%	46.72%	3.17%	13.27%	1.90%	21.05%	7.16%	6.90%
Healthcare Information and Technology	127	0.95	7.63%	83.51%	70.49%	4.17%	6.35%	2.50%	16.49%	7.06%	6.79%
Homebuilding	35	1.29	9.57%	62.20%	53.78%	3.67%	18.11%	2.20%	37.80%	7.34%	6.78%
Hospitals/Healthcare Facilities	56	0.97	7.76%	56.95%	43.11%	3.17%	10.93%	1.90%	43.05%	5.79%	5.24%
Hotel/Gaming	80	1.18	8.96%	64.67%	49.55%	3.17%	11.41%	1.90%	35.33%	6.91%	6.47%
Household Products	135	1.03	8.08%	84.11%	61.63%	3.67%	10.46%	2.20%	15.89%	7.38%	7.15%
Information Services	67	1.11	8.58%	88.25%	42.71%	3.17%	17.93%	1.90%	11.75%	7.95%	7.80%
Insurance (General)	24	1.03	8.09%	69.91%	35.35%	3.17%	19.21%	1.90%	30.09%	6.61%	6.23%
Insurance (Life)	25	1.04	8.16%	58.40%	34.48%	3.17%	24.30%	1.90%	41.60%	6.08%	5.56%
Insurance (Prop/Cas.)	52	0.83	6.94%	75.24%	36.73%	3.17%	22.18%	1.90%	24.76%	6.00%	5.69%
Investments & Asset Management	148	1.10	8.48%	57.45%	41.63%	3.17%	6.84%	1.90%	42.55%	6.22%	5.68%
Machinery	137	1.23	9.22%	83.03%	46.22%	3.17%	15.64%	1.90%	16.97%	8.20%	7.98%
Metals & Mining	124	1.28	9.54%	66.36%	74.49%	4.17%	1.80%	2.50%	33.64%	7.73%	7.17%
Office Equipment & Services	25	1.34	9.89%	65.84%	49.87%	3.17%	18.65%	1.90%	34.16%	7.59%	7.16%
Oil/Gas (Integrated)	8	0.81	6.81%	90.04%	33.56%	3.17%	14.56%	1.90%	9.96%	6.45%	6.33%
Oil/Gas (Production and Exploration)	392	1.27	9.45%	67.49%	71.93%	4.17%	7.04%	2.50%	32.51%	7.74%	7.19%
Oil/Gas Distribution	85	0.96	7.71%	67.68%	43.15%	3.17%	4.68%	1.90%	32.32%	6.25%	5.84%
Oilfield Svcs/Equip.	161	1.54	11.04%	78.35%	65.23%	4.17%	10.99%	2.50%	21.65%	9.56%	9.19%
Packaging & Container	26	0.95	7.62%	67.30%	31.06%	3.17%	18.18%	1.90%	32.70%	6.16%	5.75%
Paper/Forest Products	22	0.84	6.97%	66.22%	44.94%	3.17%	11.54%	1.90%	33.78%	5.69%	5.26%
Power	82	0.83	6.94%	56.90%	29.70%	3.17%	20.77%	1.90%	43.10%	5.31%	4.77%

**ASWATH DAMODARAN'S WACC - AS OF JANUARY 2015**

For Tax Year 2015

Industry Name	Number of Firms	Beta	Cost of Equity	E/(D+E)	Std Dev in Stock	Cost of Debt	Tax Rate	After-tax Cost of Debt	D/(D+E)	Pre-Tax Cost of Capital	Cost of Capital
Precious Metals	147	1.29	9.61%	71.02%	93.69%	5.17%	1.33%	3.10%	28.98%	8.32%	7.72%
Publishing & Newspapers	43	1.15	8.77%	67.85%	50.42%	3.67%	14.93%	2.20%	32.15%	7.13%	6.66%
R.E.I.T.	213	0.79	6.69%	53.05%	31.55%	3.17%	1.24%	1.90%	46.95%	5.04%	4.44%
Real Estate (Development)	18	1.02	8.04%	68.77%	43.65%	3.17%	7.21%	1.90%	31.23%	6.52%	6.13%
Real Estate (General/Diversified)	11	1.82	12.63%	78.39%	45.97%	3.17%	9.39%	1.90%	21.61%	10.59%	10.31%
Real Estate (Operations & Services)	52	1.30	9.66%	63.56%	50.05%	3.67%	8.63%	2.20%	36.44%	7.48%	6.94%
Recreation	68	1.21	9.14%	75.97%	50.41%	3.67%	11.25%	2.20%	24.03%	7.82%	7.47%
Reinsurance	4	1.35	9.91%	72.68%	21.20%	2.67%	15.53%	1.60%	27.32%	7.93%	7.64%
Restaurant/Dining	79	0.89	7.30%	78.20%	44.43%	3.17%	15.14%	1.90%	21.80%	6.40%	6.13%
Retail (Automotive)	30	1.18	8.93%	66.58%	48.06%	3.17%	18.76%	1.90%	33.42%	7.00%	6.58%
Retail (Building Supply)	5	1.44	10.46%	83.71%	50.71%	3.67%	30.64%	2.20%	16.29%	9.36%	9.12%
Retail (Distributors)	90	1.12	8.58%	67.57%	52.06%	3.67%	16.84%	2.20%	32.43%	6.99%	6.51%
Retail (General)	23	1.03	8.10%	76.12%	46.36%	3.17%	21.36%	1.90%	23.88%	6.93%	6.62%
Retail (Grocery and Food)	21	1.05	8.20%	64.05%	51.83%	3.67%	22.94%	2.20%	35.95%	6.57%	6.04%
Retail (Online)	46	1.40	10.19%	93.01%	70.16%	4.17%	9.38%	2.50%	6.99%	9.77%	9.65%
Retail (Special Lines)	128	1.07	8.35%	70.70%	51.42%	3.67%	20.44%	2.20%	29.30%	6.98%	6.55%
Rubber & Tires	4	1.02	8.04%	53.26%	49.54%	3.17%	13.58%	1.90%	46.74%	5.76%	5.17%
Semiconductor	100	1.21	9.15%	90.29%	57.12%	3.67%	10.11%	2.20%	9.71%	8.62%	8.48%
Semiconductor Equip	47	1.23	9.26%	85.01%	60.18%	3.67%	6.88%	2.20%	14.99%	8.42%	8.20%
Shipbuilding & Marine	14	1.36	10.00%	65.10%	71.45%	4.17%	6.75%	2.50%	34.90%	7.97%	7.38%
Shoe	13	0.84	7.01%	93.16%	40.80%	3.17%	20.15%	1.90%	6.84%	6.75%	6.66%
Software (Entertainment)	20	1.12	8.58%	85.25%	69.84%	4.17%	1.46%	2.50%	14.75%	7.93%	7.68%
Software (Internet)	327	1.29	9.57%	94.71%	72.48%	4.17%	5.07%	2.50%	5.29%	9.28%	9.19%
Software (System & Application)	259	1.10	8.52%	91.16%	61.85%	3.67%	6.86%	2.20%	8.84%	8.09%	7.96%
Steel	40	1.31	9.72%	60.96%	52.45%	3.67%	13.99%	2.20%	39.04%	7.36%	6.78%
Telecom (Wireless)	21	1.15	8.78%	39.31%	53.05%	3.67%	5.76%	2.20%	60.69%	5.68%	4.79%
Telecom. Equipment	126	1.24	9.32%	89.51%	62.74%	3.67%	8.70%	2.20%	10.49%	8.72%	8.57%
Telecom. Services	77	1.07	8.31%	60.45%	55.60%	3.67%	11.83%	2.20%	39.55%	6.48%	5.90%
Tobacco	20	1.09	8.41%	83.51%	41.74%	3.17%	12.39%	1.90%	16.49%	7.55%	7.34%
Transportation	21	0.86	7.10%	82.62%	42.36%	3.17%	20.08%	1.90%	17.38%	6.42%	6.20%
Transportation (Railroads)	10	1.05	8.19%	83.19%	30.73%	3.17%	21.30%	1.90%	16.81%	7.35%	7.14%
Trucking	30	1.32	9.78%	60.00%	48.49%	3.17%	27.38%	1.90%	40.00%	7.14%	6.63%
Unclassified	8	0.10	2.77%	79.20%	NA	#N/A	3.93%	#N/A	20.80%	#N/A	#N/A
Utility (General)	21	0.59	5.58%	62.00%	23.02%	2.67%	30.59%	1.60%	38.00%	4.47%	4.07%
Utility (Water)	19	1.09	8.41%	66.59%	38.21%	3.17%	15.10%	1.90%	33.41%	6.66%	6.24%
<b>Total Market</b>	<b>7887</b>	<b>1.06</b>	<b>8.29%</b>	<b>60.19%</b>	<b>53.60%</b>	<b>3.67%</b>	<b>10.76%</b>	<b>2.20%</b>	<b>39.81%</b>	<b>6.45%</b>	<b>5.87%</b>

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Prices							
Date	Open	High	Low	Close	Volume	Adj Close*	
Dec 31, 2014	2,082.11	2,085.58	2,057.94	2,058.90	2,606,070,000	2,058.90	
Dec 30, 2014	2,088.49	2,088.49	2,079.53	2,080.35	2,440,280,000	2,080.35	
Dec 29, 2014	2,087.63	2,093.55	2,085.75	2,090.57	2,452,360,000	2,090.57	

\* Close price adjusted for dividends and splits.

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Currency in USD.

REV. RUL. 2014-31 TABLE 2  
Adjusted AFR for December 2014  
*Period for Compounding*

	<i>Annual</i>	<i>Semiannual</i>	<i>Quarterly</i>	<i>Monthly</i>
Short-term adjusted AFR	.34%	.34%	.34%	.34%
Mid-term adjusted AFR	1.28%	1.28%	1.28%	1.28%
Long-term adjusted AFR	2.68%	2.66%	2.65%	2.65%

REV. RUL. 2014-31 TABLE 3  
Rates Under Section 382 for December 2014

Adjusted federal long-term rate for the current month	2.68%
Long-term tax-exempt rate for ownership changes during the current month (the highest of the adjusted federal long-term rates for the current month and the prior two months.)	2.80%

REV. RUL. 2014-31 TABLE 4  
Appropriate Percentages Under Section 42(b)(1) for December 2014

Note: Under section 42(b)(2), the applicable percentage for non-federally subsidized new buildings placed in service after July 30, 2008, with respect to housing credit dollar amount allocations made before January 1, 2014, shall not be less than 9%.

Appropriate percentage for the 70% present value low-income housing credit	7.51%
Appropriate percentage for the 30% present value low-income housing credit	3.22%

REV. RUL. 2014-31 TABLE 5  
Rate Under Section 7520 for December 2014

Applicable federal rate for determining the present value of an annuity, an interest for life or a term of years, or a remainder or reversionary interest	2.0%
---	------

REV. RUL. 2014-31 TABLE 6  
Rates Under Sections 846 and 807

Applicable rate of interest for 2015 for purposes of sections 846 and 807	1.68%
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### Section 1288.—Treatment of Original Issue Discount on Tax-Exempt Obligations

The adjusted applicable federal short-term, mid-term, and long-term rates are set forth for the month of December 2014. See Rev. Rul. 2014-31, page 935.

### Section 7520.—Valuation Tables

The adjusted applicable federal short-term, mid-term, and long-term rates are set forth for the month of December 2014. See Rev. Rul. 2014-31, page 935.

### Section 7872.—Treatment of Loans With Below-Market Interest Rates

The adjusted applicable federal short-term, mid-term, and long-term rates are set forth for the month of December 2014. See Rev. Rul. 2014-31, page 935.

**S&P GICS Composite 1500 Valuations as of 12/31/14**

	Earnings		P/E Ratios			P/Es Rel. to the S&P 1500			Proj.	2015e	Div'd Yield
	% Change								5-Yr %	P/E to	
	2014e	2015e	2014e	2015e	5 Yr Avg	2014e	2015e	5 Yr Avg	G. Rate	G. Rate	
<b>S&amp;P GICS Composite 1500</b>	<b>8.8</b>	<b>13.8</b>	<b>18.1</b>	<b>15.9</b>	<b>18.9</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>11.9</b>	<b>1.3</b>	<b>1.9</b>
S&P 500	8.8	12.2	17.6	15.7	18.4	1.0	1.0	1.0	11.7	1.3	2.0
S&P 400	5.5	29.8	22.9	17.7	22.2	1.3	1.1	1.2	12.5	1.4	1.5
S&P 600	13.0	30.9	24.3	18.6	24.7	1.3	1.2	1.3	14.3	1.3	1.4
<b>Consumer Discretionary</b>	<b>8.7</b>	<b>18.9</b>	<b>21.3</b>	<b>17.9</b>	<b>21.9</b>	<b>1.2</b>	<b>1.1</b>	<b>1.2</b>	<b>15.5</b>	<b>1.2</b>	<b>1.4</b>
Advertising	11.6	20.9	20.7	17.1	20.9	1.1	1.1	1.1	8.3	2.1	2.9
Apparel Retail	6.5	13.4	20.9	18.4	20.8	1.2	1.2	1.1	12.0	1.5	1.3
Apparel, Accessories & Luxury Goods	6.1	12.2	22.3	19.9	22.6	1.2	1.2	1.2	17.7	1.1	1.0
Auto Parts & Equipment	5.9	20.0	15.8	13.2	16.9	0.9	0.8	0.9	14.4	0.9	1.7
Automobile Manufacturers	(15.4)	73.9	12.0	6.9	8.9	0.7	0.4	0.5	13.2	0.5	3.3
Automotive Retail	15.9	12.4	21.8	19.4	24.2	1.2	1.2	1.3	15.6	1.2	0.1
Broadcasting	10.9	23.2	17.5	14.2	18.2	1.0	0.9	1.0	16.8	0.8	0.8
Cable & Satellite	16.9	7.5	18.4	17.1	20.6	1.0	1.1	1.1	11.9	1.4	1.3
Casinos & Gaming	1.2	7.4	21.8	20.3	23.9	1.2	1.3	1.3	12.3	1.7	3.5
Computer & Electronics Retail	17.8	14.5	14.3	12.4	14.4	0.8	0.8	0.8	14.0	0.9	2.5
Consumer Electronics	22.5	10.8	19.2	17.3	21.6	1.1	1.1	1.1	12.6	1.4	2.2
Department Stores	13.5	22.9	21.9	17.8	21.7	1.2	1.1	1.2	9.7	1.8	1.9
Distributors	16.0	12.8	22.0	19.5	23.7	1.2	1.2	1.3	13.1	1.5	1.4
Education Services	NM	NM	NM	NM	14.3	NM	NM	0.8	10.4	NM	0.7
Footwear	16.1	10.6	25.9	23.5	27.7	1.4	1.5	1.5	14.2	1.6	1.0
General Merchandise Stores	4.1	15.7	22.4	19.4	20.7	1.2	1.2	1.1	11.8	1.6	1.6
Home Furnishings	19.3	20.9	20.9	17.3	23.1	1.2	1.1	1.2	13.3	1.3	0.9
Home Improvement Retail	20.4	17.8	24.1	20.5	27.0	1.3	1.3	1.4	16.4	1.3	1.6
Homebuilding	11.9	NM	15.3	NM	24.2	0.8	NM	1.3	12.0	NM	0.7
Homefurnishing Retail	0.6	10.7	17.5	15.8	17.4	1.0	1.0	0.9	10.2	1.6	0.5
Hotels, Resorts & Cruise Lines	17.6	31.2	24.9	19.0	25.0	1.4	1.2	1.3	18.6	1.0	1.6
Household Appliances	(7.5)	22.9	16.7	13.6	17.1	0.9	0.9	0.9	24.9	0.5	1.3
Housewares & Specialties	7.9	12.8	17.9	15.9	18.4	1.0	1.0	1.0	11.2	1.4	1.5
Internet Retail	9.3	51.0	70.5	46.7	68.8	3.9	2.9	3.6	31.9	1.5	0.0
Leisure Facilities	4.7	12.9	19.8	17.5	19.8	1.1	1.1	1.1	12.5	1.4	0.2
Leisure Products	(6.3)	8.8	18.2	16.8	17.7	1.0	1.1	0.9	12.6	1.3	2.9
Motorcycle Manufacturers	17.7	13.3	17.0	15.0	18.8	0.9	0.9	1.0	13.4	1.1	1.7
Movies & Entertainment	15.1	12.3	20.5	18.2	22.4	1.1	1.1	1.2	15.6	1.2	1.2
Publishing	(19.0)	(2.4)	18.3	18.7	17.4	1.0	1.2	0.9	9.9	1.9	1.6
Restaurants	1.4	10.2	23.6	21.4	23.4	1.3	1.3	1.2	12.4	1.7	2.3
Specialized Consumer Services	66.7	7.3	19.4	18.1	24.0	1.1	1.1	1.3	12.0	1.5	1.8
Specialty Stores	10.6	24.6	23.3	18.7	23.1	1.3	1.2	1.2	13.5	1.4	1.1
Tires & Rubber	9.4	2.0	9.4	9.2	10.9	0.5	0.6	0.6	12.0	0.8	0.8
<b>Consumer Staples</b>	<b>4.0</b>	<b>9.5</b>	<b>20.3</b>	<b>18.6</b>	<b>20.6</b>	<b>1.1</b>	<b>1.2</b>	<b>1.1</b>	<b>9.0</b>	<b>2.1</b>	<b>2.5</b>
Agricultural Products	29.2	13.0	16.1	14.2	17.9	0.9	0.9	1.0	12.4	1.2	1.7
Brewers	4.5	7.6	20.5	19.0	21.2	1.1	1.2	1.1	6.2	3.1	1.6
Distillers & Vintners	NM	NM	NM	22.6	29.0	NM	1.4	1.5	12.2	1.9	0.7
Drug Retail	9.5	19.0	23.0	19.3	24.1	1.3	1.2	1.3	14.0	1.4	1.6
Food Distributors	8.8	8.8	21.8	20.0	21.9	1.2	1.3	1.2	8.8	2.3	2.5
Food Retail	22.6	11.4	23.4	21.0	24.8	1.3	1.3	1.3	10.3	2.0	1.3
Household Products	6.5	5.2	20.7	19.7	21.4	1.1	1.2	1.1	7.6	2.6	2.7
Hypermarkets & Super Centers	(1.3)	5.3	19.6	18.7	19.4	1.1	1.2	1.0	7.4	2.5	1.8
Packaged Foods & Meats	(0.9)	12.5	21.2	18.9	20.9	1.2	1.2	1.1	10.7	1.8	2.1
Personal Products	0.4	4.2	20.3	19.5	20.8	1.1	1.2	1.1	11.3	1.7	1.5
Soft Drinks	4.9	13.7	20.7	18.2	20.5	1.1	1.1	1.1	8.7	2.1	2.7
Tobacco	(2.7)	4.9	17.5	16.7	17.4	1.0	1.0	0.9	6.4	2.6	4.5
<b>Energy</b>	<b>6.7</b>	<b>(6.9)</b>	<b>13.2</b>	<b>14.2</b>	<b>13.9</b>	<b>0.7</b>	<b>0.9</b>	<b>0.7</b>	<b>12.7</b>	<b>1.1</b>	<b>2.8</b>
Coal & Consumable Fuels	NM	NM	NM	NM	NM	NM	NM	NM	11.7	NM	1.4
Integrated Oil & Gas	(5.5)	(26.3)	12.1	16.4	12.1	0.7	1.0	0.6	8.0	2.0	3.3
Oil & Gas Drilling	(6.0)	(7.1)	7.5	8.1	7.7	0.4	0.5	0.4	3.2	2.5	7.3
Oil & Gas Equipment & Services	20.2	(0.2)	13.5	13.5	15.5	0.7	0.8	0.8	17.3	0.8	1.6
Oil & Gas Exploration & Production	34.9	26.2	14.6	11.6	18.1	0.8	0.7	1.0	12.5	0.9	1.8
Oil & Gas Refining & Marketing	20.9	5.9	10.3	9.7	10.5	0.6	0.6	0.6	15.9	0.6	2.7
Oil & Gas Storage & Transport	4.9	12.0	37.7	33.6	35.7	2.1	2.1	1.9	27.2	1.2	4.4
<b>Financials</b>	<b>7.4</b>	<b>9.4</b>	<b>15.4</b>	<b>14.1</b>	<b>16.7</b>	<b>0.8</b>	<b>0.9</b>	<b>0.9</b>	<b>10.2</b>	<b>1.4</b>	<b>2.0</b>
Asset Management & Custody Banks	8.1	14.5	17.5	15.3	18.3	1.0	1.0	1.0	13.6	1.1	1.8
Consumer Finance	5.0	NM	13.3	NM	15.2	0.7	NM	0.8	9.8	NM	1.4
Diversified Banks	14.1	10.0	12.0	10.9	13.0	0.7	0.7	0.7	10.1	1.1	1.8
Diversified REITs	150.1	19.3	57.1	47.9	77.2	3.2	3.0	4.1	8.3	5.8	3.2
Industrial REITs	(6.4)	(25.4)	58.1	77.9	102.5	3.2	4.9	5.4	8.4	9.2	3.1

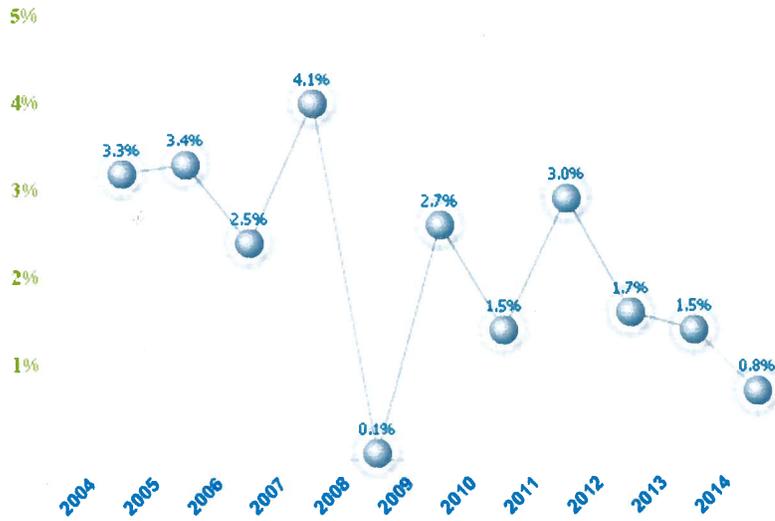
# Current US Inflation Rates: 2004-2015

The latest inflation rate for the United States is 0.8% through the 12 months ended December 2014, as published by the US government on January 16, 2015. The next update is scheduled for release on February 26, 2015 at 8:30 a.m. ET. It will offer the rate of inflation over the 12 months ended January 2015.

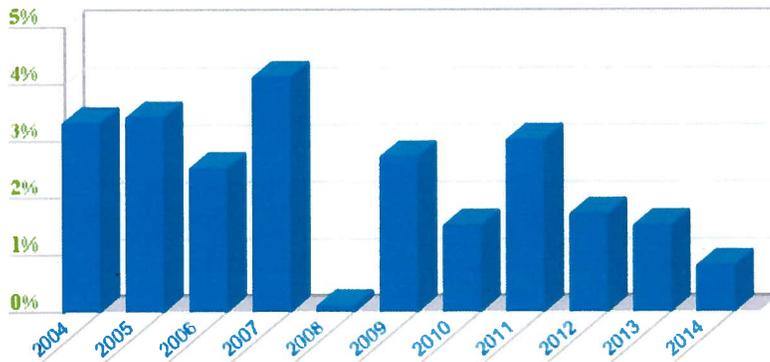
The chart, graph and table below displays **annual US inflation rates** for calendar years 2004-2014. Rates of inflation are calculated using the current [Consumer Price Index](#) published **monthly** by the Bureau of Labor Statistics ([BLS](#)). For 2015, when available, the most recent monthly data (12-month based) will be used in the chart and graph.

[Historical inflation rates](#) are available from 1914-2014. If you would like to calculate accumulated rates between different dates, the [US Inflation Calculator](#) will do that quickly.

## Inflation Rates Graph (2004-2014)



**Annual Inflation Rates Chart (2004-2014)**



**Table of Inflation Rates (%) by Month and Year (1999-2015)**

Since figures below are 12-month periods, look to the December column to find inflation rates by calendar year. These also appear in the graph and chart above. For example, the rate of inflation in 2014 was 0.8%. The last column, "Ave," shows the average inflation rate for each

year. They are published by the BLS but are rarely discussed in news media, taking a back seat to a calendar year's actual rate of inflation.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave
<b>2015</b>													
<b>2014</b>	1.6	1.1	1.5	2.0	2.1	2.1	2.0	1.7	1.7	1.7	1.3	0.8	1.6
<b>2013</b>	1.6	2.0	1.5	1.1	1.4	1.8	2.0	1.5	1.2	1.0	1.2	1.5	1.5
<b>2012</b>	2.9	2.9	2.7	2.3	1.7	1.7	1.4	1.7	2.0	2.2	1.8	1.7	2.1
<b>2011</b>	1.6	2.1	2.7	3.2	3.6	3.6	3.6	3.8	3.9	3.5	3.4	3.0	3.2
<b>2010</b>	2.6	2.1	2.3	2.2	2.0	1.1	1.2	1.1	1.1	1.2	1.1	1.5	1.6
<b>2009</b>	0	0.2	-0.4	-0.7	-1.3	-1.4	-2.1	-1.5	-1.3	-0.2	1.8	2.7	-0.4
<b>2008</b>	4.3	4	4	3.9	4.2	5.0	5.6	5.4	4.9	3.7	1.1	0.1	3.8
<b>2007</b>	2.1	2.4	2.8	2.6	2.7	2.7	2.4	2	2.8	3.5	4.3	4.1	2.8
<b>2006</b>	4	3.6	3.4	3.5	4.2	4.3	4.1	3.8	2.1	1.3	2	2.5	3.2
<b>2005</b>	3	3	3.1	3.5	2.8	2.5	3.2	3.6	4.7	4.3	3.5	3.4	3.4
<b>2004</b>	1.9	1.7	1.7	2.3	3.1	3.3	3	2.7	2.5	3.2	3.5	3.3	2.7
<b>2003</b>	2.6	3	3	2.2	2.1	2.1	2.1	2.2	2.3	2	1.8	1.9	2.3
<b>2002</b>	1.1	1.1	1.5	1.6	1.2	1.1	1.5	1.8	1.5	2	2.2	2.4	1.6
<b>2001</b>	3.7	3.5	2.9	3.3	3.6	3.2	2.7	2.7	2.6	2.1	1.9	1.6	2.8
<b>2000</b>	2.7	3.2	3.8	3.1	3.2	3.7	3.7	3.4	3.5	3.4	3.4	3.4	3.4
<b>1999</b>	1.7	1.6	1.7	2.3	2.1	2	2.1	2.3	2.6	2.6	2.6	2.7	2.2

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