



THE

# LIVINGSTON SURVEY

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## DECEMBER 2015

### **Forecasters Predict Steady Growth and Unemployment Rate Declines**

The 25 participants in the December *Livingston Survey* predict fairly persistent output growth through the end of 2016. 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 2.1 percent for the second half of 2015. They predict that the growth rate of economic output will be 2.5 percent (annual rate) in the first half of 2016 and 2.6 percent (annual rate) in the second half of 2016. The current projection for growth in the second half of 2015 is 1.0 percentage point lower than the projection from the survey of six months ago, while the forecast for the first half of 2016 is 0.4 percentage point lower.

The forecasters predict that the unemployment rate will decline even further than estimated in the June 2015 survey. The forecasters predict that the unemployment rate will be 4.9 percent in December 2015 and 4.8 percent in June 2016. The current projections for December 2015 and June 2016 are both down 0.2 percentage point from the last survey. The unemployment rate is projected to fall to 4.6 percent in December 2016.

	<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>					
2015 Q2 to 2015 Q4	3.1	2.1	December 2015	5.1	4.9
2015 Q4 to 2016 Q2	2.9	2.5	June 2016	5.0	4.8
2016 Q2 to 2016 Q4	N.A.	2.6	December 2016	N.A.	4.6

### **Forecasters See Lower CPI and PPI Inflation in 2016 Compared with Six Months Ago**

On an annual-average over annual-average basis, CPI inflation is expected to be 0.1 percent in 2015 and 1.8 percent in 2016. The 2015 projection remains unchanged from the June survey, while the 2016 projection is down 0.3 percentage point. CPI inflation is expected to rise to 2.2 percent in 2017. PPI inflation is expected to be -3.2 percent in 2015 and 0.7 percent in 2016. The 2015 projections for PPI inflation remain unchanged from six months ago, although the projection for 2016 is 1.2 percentage points lower. PPI inflation is expected to rise to 2.4 percent in 2017.

	<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>				
2014 to 2015	0.1	0.1	-3.2	-3.2
2015 to 2016	2.1	1.8	1.9	0.7
2016 to 2017	N.A.	2.2	N.A.	2.4

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***Short- and Long-Term Interest Rates Are Revised Downward yet Predicted to Steadily Rise***

The panelists have reduced their forecasts for the interest rates on three-month Treasury bills and 10-year Treasury bonds from six months ago. At the end of December 2015, the interest rate on three-month Treasury bills is predicted to be 0.23 percent, revised down from 0.59 percent in the survey six months ago. The forecasters predict that the three-month Treasury bill interest rate will be 0.68 percent at the end of June 2016 and 1.12 percent in December 2016. The rate is expected to rise to 2.03 percent in 2017. The interest rate on 10-year Treasury bonds is predicted to reach 2.30 percent at the end of December 2015, down from the previous estimate of 2.50 percent. Additionally, forecasters predict the 10-year rate will rise to 2.55 percent at the end of June 2016 and to 2.75 percent in December 2016, down from the previous projections of 2.84 percent and 3.00 percent, respectively. The forecasters expect the rate to rise to 3.09 percent in 2017.

	<i>3-Month Treasury Bill Interest Rate</i>		<i>10-Year Treasury Bond Interest Rate</i>	
	<i>Previous</i>	<i>New</i>	<i>Previous</i>	<i>New</i>
Dec. 31, 2015	0.59	0.23	2.50	2.30
June 30, 2016	1.11	0.68	2.84	2.55
Dec. 30, 2016	1.50	1.12	3.00	2.75
Dec. 29, 2017	N.A.	2.03	N.A.	3.09

***Steady Outlook for Long-Term Inflation Accompanies a Weaker Outlook for Long-Term Output Growth***

The forecasters now predict that inflation (measured by the CPI) will grow 2.25 percent annually over the next 10 years, which is slightly higher than the forecast of 2.20 percent in the survey of six months ago. Real GDP growth is expected to average 2.25 percent over the next 10 years, lower than the projection of 2.50 percent from the previous survey.

***Forecasters Soften Their Predictions for Rising Stock Prices***

The forecasters predict the S&P 500 index will finish 2015 at a level of 2090.0, a downward revision from the estimate of 2158.0 in the June 2015 survey. They also see stock prices increasing over the next two years, with the index rising to 2120.0 by the end of June 2016, to 2184.9 by the end of 2016, and then to 2298.0 by the end of 2017.

	<i>Stock Prices (end of period) S&amp;P 500 Index</i>	
	<i>Previous</i>	<i>New</i>
Dec. 31, 2015	2158.0	2090.0
June 30, 2016	2218.0	2120.0
Dec. 30, 2016	2243.0	2184.9
Dec. 29, 2017	N.A.	2298.0

The Philadelphia Fed's *Livingston Survey* is the oldest survey of economists' expectations. The survey was started in 1946 by the late columnist Joseph A. Livingston. It summarizes the forecast 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 <https://www.philadelphiafed.org/notifications>.

**December 2015 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/S. Panday</b>	<b>Standard &amp; Poor's</b>	<b>A. Markowska</b>	<b>Societe Generale</b>
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<b>C. Chrappa</b>	<b>Independent Equipment Company</b>	<b>M. Moran</b>	<b>Daiwa Capital Markets America</b>
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<b>K. Goldstein/B. Ark</b>	<b>Conference Board</b>	<b>J. Silvia</b>	<b>Wells Fargo Securities, LLC</b>
<b>B. Horrigan</b>	<b>Loomis, Sayles &amp; Co.</b>	<b>J. Smith</b>	<b>Parsec Financial Management, Inc.</b>
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<b>E. Leamer/D. Shulman</b>	<b>University of California, Los Angeles</b>		

LIVINGSTON SURVEY  
MAJOR MACROECONOMIC INDICATORS, 2015-2017

QUARTERLY INDICATORS (percentage changes at annual rates)	Q2 2015 TO Q4 2015	Q4 2015 TO Q2 2016	Q2 2016 TO Q4 2016	2014 TO 2015	2015 TO 2016	2016 TO 2017
Real Gross Domestic Product	2.1	2.5	2.6	2.5	2.5	2.6
Nominal Gross Domestic Product	3.5	4.4	4.6	3.5	4.4	4.6
Nonresidential Fixed Investment	3.5	4.3	4.9	3.2	4.3	4.6
Corporate Profits After Taxes	-0.6	4.0	5.3	-2.8	3.2	4.9
MONTHLY INDICATORS (percentage changes at annual rates)	JUN 2015 TO DEC 2015	DEC 2015 TO JUN 2016	JUN 2016 TO DEC 2016	2014 TO 2015	2015 TO 2016	2016 TO 2017
Industrial Production	1.4	2.1	3.2	1.5	1.5	2.7
Producer Prices - Finished Goods	-4.1	2.2	3.2	-3.2	0.7	2.4
Consumer Price Index (CPI-U)	0.4	1.9	2.5	0.1	1.8	2.2
Average Weekly Earnings in Mfg.	2.5	2.4	3.0	1.1	2.3	3.4
Retail Trade	2.5	3.8	4.5	2.2	3.6	4.4
(levels of variables)	DEC 2015	JUN 2016	DEC 2016	2015	2016	2017
Total Private Housing Starts (annual rate, millions)	1.160	1.250	1.320	1.107	1.248	1.375
Unemployment Rate (percent)	4.9	4.8	4.6	5.3	4.8	4.6
Automobile Sales (incl. foreign) (annual rate, millions)	7.8	7.6	7.7	7.6	7.7	7.7
FINANCIAL INDICATORS (levels of variables at end of month)	DEC 2015	JUN 2016	DEC 2016	DEC 2017		
Prime Interest Rate	3.50	3.75	4.25	5.25		
10-Year Treasury Note Yield	2.30	2.55	2.75	3.09		
3-Month Treasury Bill Rate	0.23	0.68	1.12	2.03		
Stock Prices (S&P500)	2090.0	2120.0	2184.9	2298.0		
LONG-TERM OUTLOOK Average Annual Growth Rate for the Next Ten Years						
Real GDP	2.25					
Consumer Price Index	2.25					

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2015

# **LIVINGSTON SURVEY**

**December 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 November 19; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before December 4.**

TABLE ONE  
MAJOR MACROECONOMIC INDICATORS, 2015-2017  
MEDIAN OF FORECASTER PREDICTIONS

QUARTERLY INDICATORS	NUMBER OF FORE- CASTERS	ACTUAL	FORECASTS				ACTUAL	FORECASTS		
		2015 Q2	2015 Q4	2016 Q2	2016 Q4	2014	2015	2016	2017	
1. Real Gross Domestic Product (billions, chain weighted)	25	16333.6	16504.0	16711.0	16926.4	15961.7	16356.9	16764.5	17197.6	
2. Nominal Gross Domestic Product (\$ billions)	25	17913.7	18221.0	18621.5	19043.9	17348.1	17959.9	18746.0	19601.0	
3. Nonresidential Fixed Investment (billions, chain weighted)	24	2210.6	2248.4	2296.7	2351.8	2148.3	2217.1	2311.7	2417.0	
4. Corporate Profits After Taxes (\$ billions)	17	1533.9	1529.0	1559.0	1600.0	1559.1	1515.7	1563.9	1640.8	
MONTHLY INDICATORS		ACTUAL JUN 2015	DEC 2015	FORECASTS JUN 2016	DEC 2016	ACTUAL 2014	2015	FORECASTS 2016	2017	
5. Industrial Production (2012=100)	23	106.7	107.4	108.6	110.3	105.7	107.3	108.9	111.9	
6. Total Private Housing Starts (annual rate, millions)	23	1.211	1.160	1.250	1.320	1.001	1.107	1.248	1.375	
7. Producer Prices - Finished Goods (index level)	17	196.9	192.8	194.9	198.0	200.4	194.0	195.3	200.0	
8. Consumer Price Index (CPI-U) (index level)	24	237.8	238.3	240.6	243.5	236.7	237.0	241.2	246.6	
9. Unemployment Rate (percent)	24	5.3	4.9	4.8	4.6	6.2	5.3	4.8	4.6	
10. Average Weekly Earnings in Mfg. (\$)	11	831.7	842.2	852.4	865.1	822.1	830.9	850.0	878.9	
11. Retail Trade (\$ billions)	12	443.7	449.2	457.6	467.7	433.7	443.1	458.9	479.3	
12. Automobile Sales (incl. foreign) (annual rate, millions)	14	7.4	7.8	7.6	7.7	7.7	7.6	7.7	7.7	

TABLE ONE (CONTINUED)

INTEREST RATES & STOCK PRICES (end of period)		FORECASTS				
		ACTUAL JUN 2015	DEC 2015	JUN 2016	DEC 2016	DEC 2017
13. Prime Interest Rate (percent)	24	3.25	3.50	3.75	4.25	5.25
14. 10-Year Treasury Note Yield (percent)	25	2.35	2.30	2.55	2.75	3.09
15. 3-Month Treasury Bill Rate (percent)	23	0.01	0.23	0.68	1.12	2.03
16. Stock Prices (S&P500) (index level)	15	2063.1	2090.0	2120.0	2184.9	2298.0

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2015

TABLE TWO  
MAJOR MACROECONOMIC INDICATORS, 2015-2017  
PERCENTAGE CHANGES AT ANNUAL RATES

QUARTERLY INDICATORS	NUMBER OF FORE- CASTERS	Q2 2015	Q4 2015	Q2 2016	2014	2015	2016
		TO Q4 2015	TO Q2 2016	TO Q4 2016	TO 2015	TO 2016	TO 2017
1. Real Gross Domestic Product	25	2.1	2.5	2.6	2.5	2.5	2.6
2. Nominal Gross Domestic Product	25	3.5	4.4	4.6	3.5	4.4	4.6
3. Nonresidential Fixed Investment	24	3.5	4.3	4.9	3.2	4.3	4.6
4. Corporate Profits After Taxes	17	-0.6	4.0	5.3	-2.8	3.2	4.9
MONTHLY INDICATORS		JUN 2015	DEC 2015	JUN 2016	2014	2015	2016
		TO DEC 2015	TO JUN 2016	TO DEC 2016	TO 2015	TO 2016	TO 2017
5. Industrial Production	23	1.4	2.1	3.2	1.5	1.5	2.7
6. Total Private Housing Starts	23	-0.051	0.090	0.070	0.106	0.142	0.127
7. Producer Prices - Finished Goods	17	-4.1	2.2	3.2	-3.2	0.7	2.4
8. Consumer Price Index (CPI-U)	24	0.4	1.9	2.5	0.1	1.8	2.2
9. Unemployment Rate	24	-0.4	-0.1	-0.2	-0.8	-0.5	-0.2
10. Average Weekly Earnings in Mfg.	11	2.5	2.4	3.0	1.1	2.3	3.4
11. Retail Trade	12	2.5	3.8	4.5	2.2	3.6	4.4
12. Automobile Sales (incl. foreign)	14	0.4	-0.2	0.1	-0.1	0.1	0.0

INTEREST RATES & STOCK PRICES		JUN 2015 TO DEC 2015	DEC 2015 TO JUN 2016	JUN 2016 TO DEC 2016	DEC 2016 TO DEC 2017
13. Prime Interest Rate	24	0.25	0.25	0.50	1.00
14. 10-Year Treasury Note Yield	25	-0.05	0.25	0.20	0.34
15. 3-Month Treasury Bill Rate	23	0.22	0.45	0.44	0.91
16. Stock Prices (S&P500)	15	2.6	2.9	6.2	5.2

Note: Figures for housing starts, unemployment rate, auto sales, prime interest rate, 30-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 2015

TABLE THREE  
LONG-TERM (10 YEAR) FORECASTS

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SERIES: CPI Inflation Rate

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STATISTIC	
Minimum	1.60
Lower Quartile	1.90
Median	2.25
Upper Quartile	2.50
Maximum	2.80
Mean	2.21
Std. Deviation	0.34
N	24
Missing	1

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SERIES: Real GDP

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STATISTIC	
Minimum	1.70
Lower Quartile	1.90
Median	2.25
Upper Quartile	2.50
Maximum	3.10
Mean	2.25
Std. Deviation	0.36
N	24
Missing	1

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