



THE

LIVINGSTON SURVEY

Release Date: December 17, 2021

DECEMBER 2021

Forecasters Revise Down Real GDP Growth for Second Half of 2021; Revise Up Growth for First Half of 2022

The 20 participants in the December *Livingston Survey* nearly halved their forecasts for real GDP growth in the second half of 2021 compared with their projections in the June 2021 survey. The forecasters, who are surveyed by the Federal Reserve Bank of Philadelphia twice a year, expect an increase of 3.8 percent (annualized) in real GDP during the second half of 2021. They project 3.9 percent growth (annualized) over the first half of 2022. The forecasters peg growth at an annual rate of 3.5 percent in the second half of 2022.

The forecasters predict a lower unemployment rate compared with their expectations in June 2021. In the upcoming year, they see the unemployment rate steadily decreasing from 4.4 percent in December 2021 to 3.8 percent in December 2022.

	<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>					
2021 Q2 to 2021 Q4	6.7	3.8	December 2021	4.7	4.4
2021 Q4 to 2022 Q2	3.7	3.9	June 2022	4.4	4.0
2022 Q2 to 2022 Q4	N.A.	3.5	December 2022	N.A.	3.8

Forecasters Raise Their Projections for Year-over-Year Inflation

The forecasters have revised upward their year-over-year CPI inflation and PPI inflation projections for 2021 and 2022. CPI inflation is projected to be 4.6 percent in 2021, an upward revision from 3.3 percent in the June 2021 survey. The forecasters see CPI inflation averaging 4.5 percent in 2022, up from 2.5 percent previously. They predict CPI inflation will drop to 2.5 percent in 2023. The PPI inflation rate for finished goods is expected to reach 8.7 percent this year, a notable upward revision from 6.0 percent in the previous survey. The forecasters project PPI inflation will fall to an average of 6.3 percent in 2022, up from 2.8 percent in the previous survey, before falling further, to 2.2 percent, in 2023.

	<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>				
2020 to 2021	3.3	4.6	6.0	8.7
2021 to 2022	2.5	4.5	2.8	6.3
2022 to 2023	N.A.	2.5	N.A.	2.2

RESEARCH DEPARTMENT FEDERAL RESERVE BANK OF PHILADELPHIA

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Forecasters See Short-Term Rates Ratcheting Up in the Second Half of 2022

The forecasters predict the rate on three-month Treasury bills will be 0.06 percent at the end of December 2021, 0.13 percent at the end of June 2022, and 0.53 percent at the end of December 2022. At the end of December 2023, the three-month Treasury bill rate is expected to be 1.10 percent. The forecasters cut their expectations for the rate on 10-year Treasury bonds over the next year, compared with their previous estimates. They now see the 10-year rate at 1.80 percent at the end of June 2022, down 20 basis points from the previous estimate, and 2.15 percent at the end of December 2022.

	<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, 2021	0.07	0.06	1.90	1.60
Jun. 30, 2022	0.08	0.13	2.00	1.80
Dec. 30, 2022	0.10	0.53	2.20	2.15
Dec. 29, 2023	N.A.	1.10	N.A.	2.47

Long-Term Output and Inflation Projections Weaken

The forecasters expect real GDP to grow at an annual-average rate of 2.10 percent over the next 10 years, a downward revision from 2.20 percent in the June 2021 survey. Inflation over the next 10 years, measured by the CPI, is projected to be slightly lower than that projected six months ago, decreasing from 2.50 percent in the previous survey to 2.40 percent in the current survey.

Forecasters Raise Their Expectations for Stock Prices

The panel projects that stock prices, as measured by the S&P 500 Index, will increase steadily from the end of 2021 to the end of 2023. The panel sees stock prices at 4694.6 at the end of December 2021, 4809.7 at the end of June 2022, and 4840.0 at the end of December 2022. These projections are higher than those of the previous survey of six months ago. In addition, the panel expects stock prices to reach 5000.0 by the end of 2023.

	<i>Stock Prices (end of period) S&P 500 Index</i>	
	<i>Previous</i>	<i>New</i>
Dec. 31, 2021	4292.2	4694.6
Jun. 30, 2022	4382.8	4809.7
Dec. 30, 2022	4474.3	4840.0
Dec. 29, 2023	N.A.	5000.0

Technical Notes

This news release reports the median value across the 20 forecasters on the survey’s panel. All forecasts were submitted before the December 3, 2021, employment report.

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>.

Livingston Survey Participants

S. Anderson	Bank of the West	T. Lam	Sim Kee Boon Institute, Singapore
B. Bovino/S.Panday	Standard & Poor's	D. Manaenkov	RSQE (University of Michigan)
M. Brown/W.West	Visa	G. Mokrzan	Huntington National Bank
J. Bryson	Wells Fargo Securities, LLC	M. Moran	Daiwa Capital Markets America
J. Butkiewicz	University of Delaware	F. Nothaft	CoreLogic
R. Chase	Economic & Policy Resources, Inc.	C. Rupkey	MUFG Union Bank, N.A.
C. Chrappa	Independent Equipment Company	A. Sinai/R. Kumar	Decision Economics, Inc.
R. Dhawan	Georgia State University	J. Smith	Parsec Financial Management, Inc.
M. Englund	Action Economics, LLC	S. Snaith	Institute for Economic Forecasting
P. Hooper/B. Ryan	Deutsche Bank Securities	S. Stanley	Amherst Pierpont Securities
B. Horrigan	Loomis, Sayles & Co.	B. Wesbury/R. Stein	First Trust Advisors, L.P.
S. Kahan	Kahan Consulting Ltd.	M. Zandi	Moody's Analytics
D. Knop	Independent Economist		

Livingston Survey Summary Table
MAJOR MACROECONOMIC INDICATORS, 2021-2023

QUARTERLY INDICATORS (percentage changes at annual rates)	Q2 2021 TO Q4 2021	Q4 2021 TO Q2 2022	Q2 2022 TO Q4 2022	2020 TO 2021	2021 TO 2022	2022 TO 2023
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Real Gross Domestic Product	3.8	3.9	3.5	5.5	4.1	2.9
Nominal Gross Domestic Product	8.9	7.3	5.5	9.7	8.0	5.3
Nonresidential Fixed Investment	4.2	6.8	5.7	7.6	6.1	4.6
Corporate Profits After Taxes	2.7	5.0	4.3	22.3	3.4	6.3

MONTHLY INDICATORS (percentage changes at annual rates)	JUN 2021 TO DEC 2021	DEC 2021 TO JUN 2022	JUN 2022 TO DEC 2022	2020 TO 2021	2021 TO 2022	2022 TO 2023
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Industrial Production	3.4	3.9	3.4	5.5	4.2	2.8
Producer Prices - Finished Goods	9.5	4.4	3.2	8.7	6.3	2.2
Consumer Price Index (CPI-U)	5.9	2.9	2.7	4.6	4.5	2.5
Average Weekly Earnings in Mfg.	5.8	3.1	6.0	6.1	5.1	4.0
Retail Trade	4.4	2.5	1.6	19.6	5.1	2.9

(levels of variables)	DEC 2021	JUN 2022	DEC 2022	2021	2022	2023
Total Private Housing Starts (annual rate, millions)	1.600	1.600	1.560	1.580	1.590	1.580
Unemployment Rate (percent)	4.4	4.0	3.8	5.4	4.0	3.7
Automobile Sales (incl. foreign) (annual rate, millions)	2.8	3.5	3.7	3.3	3.5	3.8

FINANCIAL INDICATORS (levels of variables at end of month)	DEC 2021	JUN 2022	DEC 2022	DEC 2023
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Prime Interest Rate	3.25	3.25	3.70	4.15
10-Year Treasury Note Yield	1.60	1.80	2.15	2.47
3-Month Treasury Bill Rate	0.06	0.13	0.53	1.10
Stock Prices (S&P500)	4694.6	4809.7	4840.0	5000.0

LONG-TERM OUTLOOK
Average Annual Growth Rate for the Next Ten Years

Real GDP	2.10
Consumer Price Index	2.40

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2021.

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December 2021

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 17; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before December 1.

TABLE ONE
 MAJOR MACROECONOMIC INDICATORS, 2021-2023
 MEDIANS OF FORECASTER PREDICTIONS

QUARTERLY INDICATORS	NUMBER OF FORECASTERS	ACTUAL	FORECAST		ACTUAL	FORECAST			
		2021 Q2	2021 Q4	2022 Q2	2022 Q4	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL
1. Real Gross Domestic Product (billions, chain weighted)	20	19368.3	19729.4	20110.8	20455.1	18384.7	19403.4	20204.7	20790.7
2. Nominal Gross Domestic Product (\$ billions)	20	22741.0	23730.8	24584.4	25251.6	20893.8	22921.0	24746.2	26066.9
3. Nonresidential Fixed Investment (billions, chain weighted)	19	2873.1	2932.9	3031.1	3115.7	2671.1	2875.1	3051.6	3192.7
4. Corporate Profits After Taxes (\$ billions)	16	2440.6	2473.8	2534.4	2588.1	1968.1	2407.3	2488.3	2644.5
MONTHLY INDICATORS		2021 Jun	2021 Dec	2022 Jun	2022 Dec	2020 ANNUAL	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL
5. Industrial Production (2017=100)	15	100.4	102.1	104.1	105.8	95.0	100.2	104.4	107.3
6. Total Private Housing Starts (annual rate, millions)	15	1.657	1.600	1.600	1.560	1.397	1.580	1.590	1.580
7. Producer Prices - Finished Goods (index level)	11	220.1	230.3	235.3	239.0	203.0	220.6	234.5	239.6
8. Consumer Price Index (CPI-U) (index level)	18	271.0	278.8	282.8	286.6	258.8	270.8	283.1	290.2
9. Unemployment Rate (percent)	18	5.9	4.4	4.0	3.8	8.1	5.4	4.0	3.7
10. Average Weekly Earnings in Mfg. (\$)	6	981.2	1009.2	1024.6	1054.7	927.7	984.2	1034.3	1075.2
11. Retail Trade (\$ billions)	11	625.4	639.0	647.0	652.0	516.8	618.1	649.7	668.3
12. Automobile Sales (incl. foreign) (annual rate, millions)	13	3.7	2.8	3.5	3.7	3.4	3.3	3.5	3.8
INTEREST RATES & STOCK PRICES (end of period)		2021 Jun	2021 Dec	2022 Jun	2022 Dec	2023 Dec			
13. Prime Interest Rate (percent)	17	3.25	3.25	3.25	3.70	4.15			
14. 10-Year Treasury Note Yield (percent)	17	1.45	1.60	1.80	2.15	2.47			
15. 3-Month Treasury Bill Rate (percent)	18	0.05	0.06	0.13	0.53	1.10			
16. Stock Prices (S&P500) (index level)	14	4297.5	4694.6	4809.7	4840.0	5000.0			

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2021.

TABLE TWO
 MAJOR MACROECONOMIC INDICATORS, 2021-2023
 PERCENTAGE CHANGES AT ANNUAL RATES

QUARTERLY INDICATORS	NUMBER OF FORECASTERS	Q2 2021 TO Q4 2021	Q4 2021 TO Q2 2022	Q2 2022 TO Q4 2022	2020 TO 2021	2021 TO 2022	2022 TO 2023
1. Real Gross Domestic Product	20	3.8	3.9	3.5	5.5	4.1	2.9
2. Nominal Gross Domestic Product	20	8.9	7.3	5.5	9.7	8.0	5.3
3. Nonresidential Fixed Investment	19	4.2	6.8	5.7	7.6	6.1	4.6
4. Corporate Profits After Taxes	16	2.7	5.0	4.3	22.3	3.4	6.3
MONTHLY INDICATORS		JUN 2021 TO DEC 2021	DEC 2021 TO JUN 2022	JUN 2022 TO DEC 2022	2020 TO 2021	2021 TO 2022	2022 TO 2023
5. Industrial Production	15	3.4	3.9	3.4	5.5	4.2	2.8
6. Total Private Housing Starts	15	-0.057	0.000	-0.040	0.183	0.010	-0.010
7. Producer Prices - Finished Goods	11	9.5	4.4	3.2	8.7	6.3	2.2
8. Consumer Price Index (CPI-U)	18	5.9	2.9	2.7	4.6	4.5	2.5
9. Unemployment Rate	18	-1.5	-0.4	-0.2	-2.7	-1.4	-0.3
10. Average Weekly Earnings in Mfg.	6	5.8	3.1	6.0	6.1	5.1	4.0
11. Retail Trade	11	4.4	2.5	1.6	19.6	5.1	2.9
12. Automobile Sales (incl. foreign)	13	-0.9	0.7	0.2	-0.1	0.1	0.4
INTEREST RATES & STOCK PRICES		JUN 2021 TO DEC 2021	DEC 2021 TO JUN 2022	JUN 2022 TO DEC 2022	DEC 2022 TO DEC 2023		
13. Prime Interest Rate	17	0.00	0.00	0.45	0.45		
14. 10-Year Treasury Note Yield	17	0.15	0.20	0.35	0.32		
15. 3-Month Treasury Bill Rate	18	0.01	0.08	0.40	0.57		
16. Stock Prices (S&P500)	14	19.3	5.0	1.3	3.3		

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 2021.

TABLE THREE
LONG-TERM (10 YEAR) FORECASTS

SERIES: Real GDP

Statistic	
Minimum	1.60
Lower Quartile	2.00
Median	2.10
Upper Quartile	2.50
Maximum	3.10
Mean	2.21
Std. Deviation	0.40
N	17
Missing	3

SERIES: CPI Inflation Rate

Statistic	
Minimum	1.80
Lower Quartile	2.30
Median	2.40
Upper Quartile	2.55
Maximum	3.20
Mean	2.44
Std. Deviation	0.36
N	17
Missing	3

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2021.