



THE

LIVINGSTON SURVEY

Release Date: December 16, 2022

DECEMBER 2022

Forecasters Project Decreasing Real GDP Growth and Increasing Unemployment Rate for 2023

The 16 participants in the December *Livingston Survey* weakened their forecasts for real GDP growth, compared with their projections in the June 2022 survey. The forecasters, who are surveyed by the Federal Reserve Bank of Philadelphia twice a year, expect 2.0 percent annualized growth in real GDP during the second half of 2022. They project 0.4 percent annualized growth over the first half of 2023. The forecasters predict that real GDP will continue to decline and reach -1.0 percent annualized growth in the second half of 2023.

The forecasters also predict a higher unemployment rate compared with their expectations in the June 2022 survey. In the upcoming year, they see the unemployment rate steadily increasing from 3.7 percent in December 2022 to 4.9 percent in December 2023.

	<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>					
2022 Q2 to 2022 Q4	2.1	2.0	December 2022	3.4	3.7
2022 Q4 to 2023 Q2	2.3	0.4	June 2023	3.5	4.2
2023 Q2 to 2023 Q4	N.A.	-1.0	December 2023	N.A.	4.9

Forecasters Project Decreasing Year-over-Year Inflation from 2022 to 2024

The forecasters have revised slightly upward their year-over-year CPI inflation and PPI inflation projections for 2022 but predict falling inflation rates for the future. CPI inflation is projected to be 8.1 percent in 2022, an upward revision from 7.6 percent in the June 2022 survey. The forecasters see CPI inflation dropping to an average of 4.4 percent in 2023, up from 3.8 percent previously. They predict CPI inflation will continue to fall to 2.6 percent in 2024. The PPI inflation rate for finished goods is expected to reach 13.5 percent this year, a slight upward revision from 13.2 percent in the previous survey. The forecasters project PPI inflation will fall to an average of 2.4 percent in 2023, before falling further to 1.6 percent in 2024.

	<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>				
2021 to 2022	7.6	8.1	13.2	13.5
2022 to 2023	3.8	4.4	4.2	2.4
2023 to 2024	N.A.	2.6	N.A.	1.6

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Forecasters Raise Their Predictions for Short-Term Rates

The forecasters predict the rate on three-month Treasury bills will be 4.50 percent at the end of December 2022, 5.05 percent at the end of June 2023, and 4.90 percent at the end of December 2023. At the end of December 2024, the three-month Treasury bill rate is expected to be 3.20 percent. The forecasters raised 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 4.23 percent at the end of June 2023 and 3.82 percent at the end of December 2023.

	<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. 30, 2022	2.54	4.50	3.31	4.10
June 30, 2023	3.04	5.05	3.32	4.23
Dec. 29, 2023	3.00	4.90	3.23	3.82
Dec. 31, 2024	N.A.	3.20	N.A.	3.40

Downward Revisions to Long-Term Real GDP Growth but Unchanged Outlook for Long-Term Inflation

The forecasters expect real GDP to grow at an annual-average rate of 1.93 percent over the next 10 years, a downward revision from 2.10 percent in the June 2022 survey. Annual-average inflation over the next 10 years, measured by the CPI, is projected to be 2.50 percent, the same rate previously predicted.

Forecasters Lower Their Expectations for Stock Prices

The panel projects that stock prices, as measured by the S&P 500 index, will decrease over the first half of 2023, then increase steadily from the second half of 2023 to the end of 2024. The panel sees stock prices at 3970.0 at the end of December 2022, 3927.4 at the end of June 2023, and 4170.0 at the end of December 2023. These projections are lower than those of the previous survey of six months ago. In addition, the panel expects stock prices to reach 4321.8 by the end of 2024.

	<i>Stock Prices (end of period) S&P 500 Index</i>	
	<i>Previous</i>	<i>New</i>
Dec. 30, 2022	4130.0	3970.0
June 30, 2023	4186.1	3927.4
Dec. 29, 2023	4245.4	4170.0
Dec. 31, 2024	N.A.	4321.8

Technical Notes

This news release reports the median value across the 16 forecasters on the survey’s panel. All forecasts were submitted before the December 1, 2022, employment report and before the December 13, 2022, CPI 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.	A. Sinai/L. Yu	Decision Economics, Inc.
C. Chrappa	Independent Equipment Company	J. Smith	Parsec Financial Management, Inc.
R. Dhawan	Georgia State University	S. Snaith	Institute for Economic Forecasting
M. Englund	Action Economics, LLC	S. Stanley	Amherst Pierpont Securities
P. Hooper/B. Ryan	Deutsche Bank Securities	B. Wesbury/R. Stein	First Trust Advisors, L.P.
B. Horrigan	Loomis, Sayles & Co.	M. Zandi	Moody's Analytics
S. Kahan	Kahan Consulting Ltd.		

Livingston Survey Summary Table
MAJOR MACROECONOMIC INDICATORS, 2022-2024

QUARTERLY INDICATORS (percentage changes at annual rates)	Q2 2022 TO Q4 2022	Q4 2022 TO Q2 2023	Q2 2023 TO Q4 2023	2021 TO 2022	2022 TO 2023	2023 TO 2024
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Real Gross Domestic Product	2.0	0.4	-1.0	1.9	0.5	1.2
Nominal Gross Domestic Product	6.4	3.6	2.5	9.1	4.6	3.3
Nonresidential Fixed Investment	4.5	1.4	-2.9	3.6	1.6	0.8
Corporate Profits After Taxes	-0.8	-5.6	2.7	4.1	-0.5	1.7

MONTHLY INDICATORS (percentage changes at annual rates)	JUN 2022 TO DEC 2022	DEC 2022 TO JUN 2023	JUN 2023 TO DEC 2023	2021 TO 2022	2022 TO 2023	2023 TO 2024
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Industrial Production	2.1	-0.3	-2.1	4.3	0.5	2.2
Producer Prices - Finished Goods	-2.9	2.2	2.4	13.5	2.4	1.6
Consumer Price Index (CPI-U)	3.2	3.9	2.3	8.1	4.4	2.6
Average Weekly Earnings in Mfg.	7.0	2.8	4.7	4.2	4.1	3.3
Retail Trade	3.1	2.1	1.5	9.8	3.2	2.8

(levels of variables)	DEC 2022	JUN 2023	DEC 2023	2022	2023	2024
Total Private Housing Starts (annual rate, millions)	1.413	1.405	1.377	1.560	1.404	1.425
Unemployment Rate (percent)	3.7	4.2	4.9	3.7	4.4	5.0
Automobile Sales (incl. foreign) (annual rate, millions)	3.1	3.2	3.3	2.9	3.2	3.4

FINANCIAL INDICATORS (levels of variables at end of month)	DEC 2022	JUN 2023	DEC 2023	DEC 2024
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Prime Interest Rate	7.50	8.25	7.88	6.25
10-Year Treasury Note Yield	4.10	4.23	3.82	3.40
3-Month Treasury Bill Rate	4.50	5.05	4.90	3.20
Stock Prices (S&P500)	3970.0	3927.4	4170.0	4321.8

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

Real GDP	1.93
Consumer Price Index	2.50

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2022.

LIVINGSTON SURVEY

December 2022

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, 2022-2024
MEDIAN OF FORECASTER PREDICTIONS

QUARTERLY INDICATORS	NUMBER OF FORECASTERS	ACTUAL	FORECAST			ACTUAL	FORECAST		
		2022 Q2	2022 Q4	2023 Q2	2023 Q4	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL	2024 ANNUAL
1. Real Gross Domestic Product (billions, chain weighted)	15	19895.3	20094.5	20134.7	20029.8	19609.8	19983.8	20075.7	20311.6
2. Nominal Gross Domestic Product (\$ billions)	15	25248.5	26048.9	26510.2	26836.9	23315.1	25427.4	26592.6	27463.4
3. Nonresidential Fixed Investment (billions, chain weighted)	14	2915.5	2980.1	3001.4	2957.9	2835.4	2938.0	2984.9	3009.4
4. Corporate Profits After Taxes (\$ billions)	11	2522.6	2512.0	2441.1	2474.0	2382.9	2481.6	2468.0	2510.3
MONTHLY INDICATORS		2022 Jun	2022 Dec	2023 Jun	2023 Dec	2021 ANNUAL	2022 ANNUAL	2023 ANNUAL	2024 ANNUAL
5. Industrial Production (2017=100)	11	104.1	105.2	105.1	103.9	100.0	104.3	104.8	107.1
6. Total Private Housing Starts (annual rate, millions)	13	1.575	1.413	1.405	1.377	1.605	1.560	1.404	1.425
7. Producer Prices - Finished Goods (index level)	7	259.7	255.9	258.7	261.9	221.0	250.9	257.0	261.2
8. Consumer Price Index (CPI-U) (index level)	14	295.3	300.1	305.8	309.4	271.0	292.9	305.9	313.9
9. Unemployment Rate (percent)	15	3.6	3.7	4.2	4.9	5.4	3.7	4.4	5.0
10. Average Weekly Earnings in Mfg. (\$)	4	1018.0	1052.8	1067.3	1092.0	985.7	1027.4	1069.3	1105.0
11. Retail Trade (\$ billions)	10	684.1	694.8	701.9	707.0	619.6	680.0	702.1	721.5
12. Automobile Sales (incl. foreign) (annual rate, millions)	10	2.7	3.1	3.2	3.3	3.4	2.9	3.2	3.4
INTEREST RATES & STOCK PRICES (end of period)		2022 Jun	2022 Dec	2023 Jun	2023 Dec	2024 Dec			
13. Prime Interest Rate (percent)	14	4.75	7.50	8.25	7.88	6.25			
14. 10-Year Treasury Note Yield (percent)	14	2.98	4.10	4.23	3.82	3.40			
15. 3-Month Treasury Bill Rate (percent)	15	1.66	4.50	5.05	4.90	3.20			
16. Stock Prices (S&P500) (index level)	11	3785.4	3970.0	3927.4	4170.0	4321.8			

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2022.

TABLE TWO
 MAJOR MACROECONOMIC INDICATORS, 2022-2024
 PERCENTAGE CHANGES AT ANNUAL RATES

QUARTERLY INDICATORS	NUMBER OF FORECASTERS	Q2 2022	Q4 2022	Q2 2023	2021	2022	2023
		TO Q4 2022	TO Q2 2023	TO Q4 2023	TO 2022	TO 2023	TO 2024
1. Real Gross Domestic Product	15	2.0	0.4	-1.0	1.9	0.5	1.2
2. Nominal Gross Domestic Product	15	6.4	3.6	2.5	9.1	4.6	3.3
3. Nonresidential Fixed Investment	14	4.5	1.4	-2.9	3.6	1.6	0.8
4. Corporate Profits After Taxes	11	-0.8	-5.6	2.7	4.1	-0.5	1.7
		JUN 2022	DEC 2022	JUN 2023	2021	2022	2023
MONTHLY INDICATORS		TO DEC 2022	TO JUN 2023	TO DEC 2023	TO 2022	TO 2023	TO 2024
5. Industrial Production	11	2.1	-0.3	-2.1	4.3	0.5	2.2
6. Total Private Housing Starts	13	-0.162	-0.008	-0.028	-0.046	-0.156	0.021
7. Producer Prices - Finished Goods	7	-2.9	2.2	2.4	13.5	2.4	1.6
8. Consumer Price Index (CPI-U)	14	3.2	3.9	2.3	8.1	4.4	2.6
9. Unemployment Rate	15	0.1	0.5	0.7	-1.7	0.7	0.6
10. Average Weekly Earnings in Mfg.	4	7.0	2.8	4.7	4.2	4.1	3.3
11. Retail Trade	10	3.1	2.1	1.5	9.8	3.2	2.8
12. Automobile Sales (incl. foreign)	10	0.3	0.1	0.2	-0.5	0.3	0.2
		JUN 2022	DEC 2022	JUN 2023	DEC 2023		
INTEREST RATES & STOCK PRICES		TO DEC 2022	TO JUN 2023	TO DEC 2023	TO DEC 2024		
13. Prime Interest Rate	14	2.75	0.75	-0.38	-1.63		
14. 10-Year Treasury Note Yield	14	1.12	0.13	-0.40	-0.42		
15. 3-Month Treasury Bill Rate	15	2.84	0.55	-0.15	-1.70		
16. Stock Prices (S&P500)	11	10.0	-2.1	12.7	3.6		

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 2022.

TABLE THREE
LONG-TERM (10 YEAR) FORECASTS

SERIES: Real GDP

Statistic	
Minimum	1.40
Lower Quartile	1.70
Median	1.93
Upper Quartile	2.15
Maximum	2.80
Mean	1.97
Std. Deviation	0.36
N	16
Missing	0

SERIES: CPI Inflation Rate

Statistic	
Minimum	1.86
Lower Quartile	2.38
Median	2.50
Upper Quartile	2.80
Maximum	3.50
Mean	2.55
Std. Deviation	0.45
N	15
Missing	1

Source: Research Department, Federal Reserve Bank of Philadelphia, Livingston Survey, December 2022.