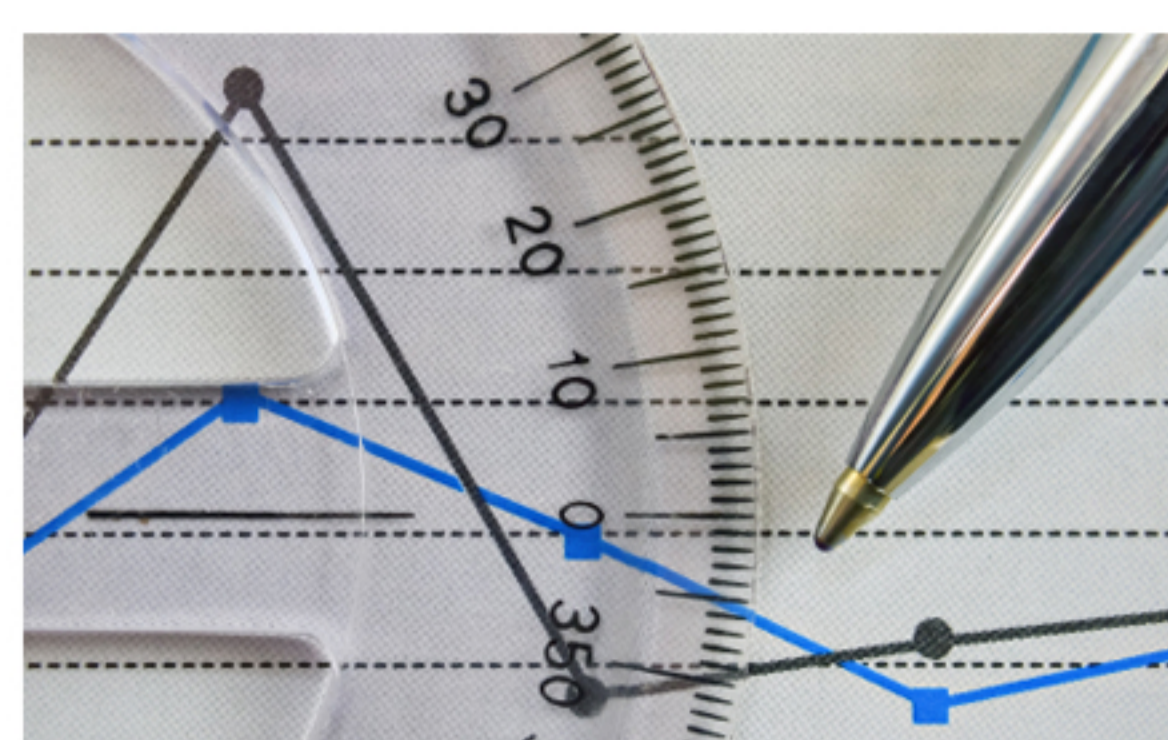


home > economic research > underlying inflation gauge >



## Underlying Inflation Gauge (UIG)

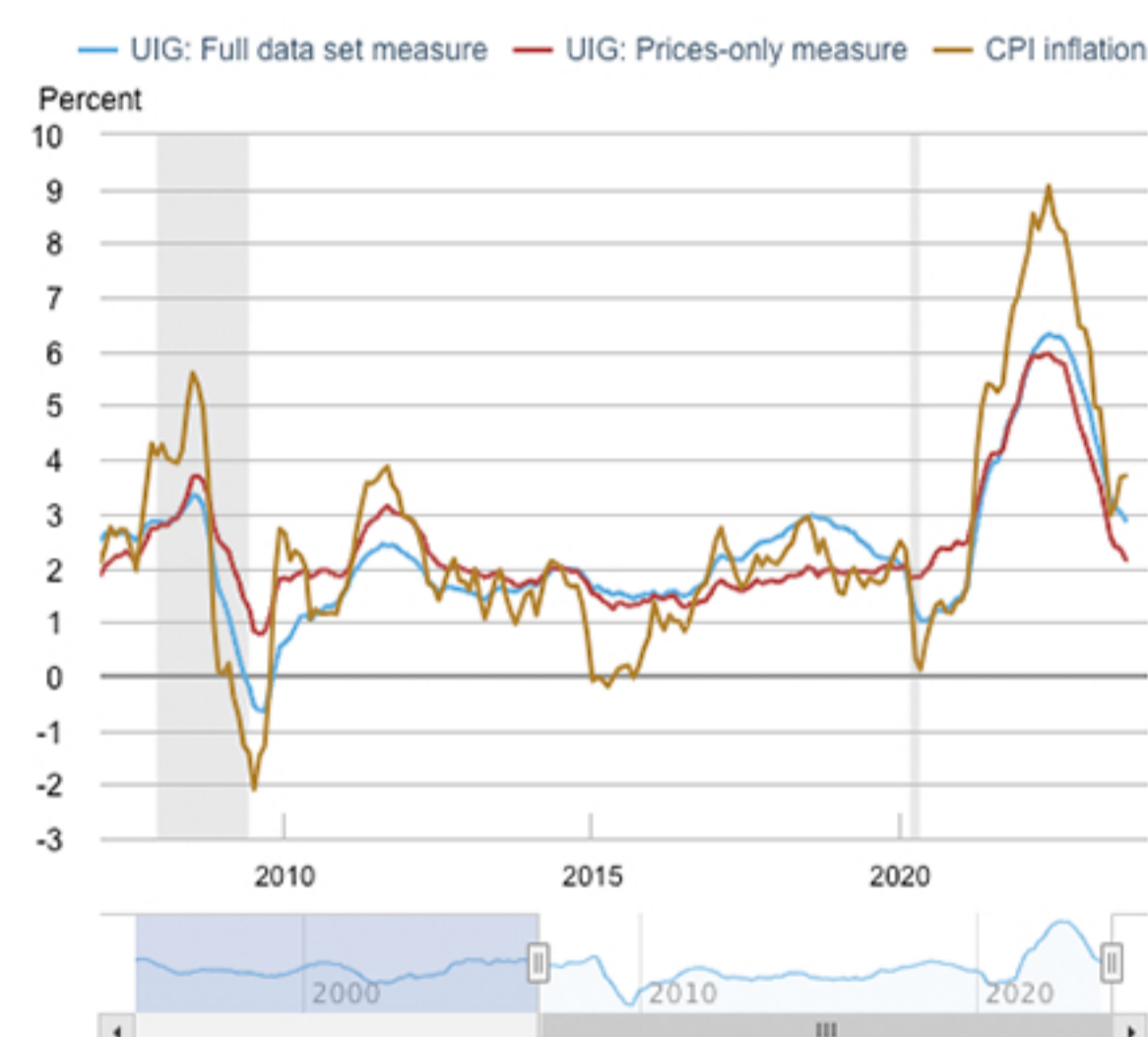
The UIG captures sustained movements in inflation from information contained in a broad set of price, real activity, and financial data.



### October 2023: The New York Fed Staff UIG Measures

- The UIG "full data set" measure for September is currently estimated at 2.9%, a 0.1 percentage point decrease from the current estimate of the previous month.
- The "prices-only" measure for September is currently estimated at 2.2%, a 0.2 percentage point decrease from the current estimate of the previous month.
- The twelve-month change in the September CPI was +3.7%, the same level as the previous month.
  - For September 2023, trend CPI inflation is estimated to be in the 2.2% to 2.9% range, a slightly larger range than July, with a 0.2 decrease on its lower bound and a 0.1 decrease on its upper bound.

### UIG Measures and 12-Month Change in the CPI



Source: Authors' calculations, based on data accessed through Haver Analytics. Note: The shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

### Data Series

The "prices-only" underlying inflation gauge (UIG) is derived from a large number of disaggregated price series in the consumer price index (CPI), while the "full data set" measure incorporates additional macroeconomic and financial variables. For a list of the series employed, see the [data appendix](#).

### FAQ

Please see this document for [frequently asked questions](#) and further details on the methodology behind the UIG. [PDF](#)

### Related Reading

For an introduction, check out Amstad, Potter, and Rich, "Measuring Trend Inflation with the Underlying Inflation Gauge," *Liberty Street Economics*, May 22, 2017.

For a more detailed account of our trend inflation measure, see Amstad, Potter, and Rich, "The New York Fed Staff Underlying Inflation Gauge (UIG)," Federal Reserve Bank of New York *Economic Policy Review* (September 2017).

An in-depth discussion of methodology is provided in Amstad, Potter, and Rich, "The New York Fed Staff Underlying Inflation Gauge (UIG)," Federal Reserve Bank of New York *Staff Reports*, no. 672 (April 2014) and Amstad and Potter, "Real Time Underlying Inflation Gauge for Monetary Policymakers," Federal Reserve Bank of New York *Staff Reports*, no. 420 (December 2009).

### 2023 Releases \*

- January 12 [EXCEL](#)
- February 14 [EXCEL](#)
- March 24 [EXCEL](#)
- April 12 [EXCEL](#)
- May 10 [EXCEL](#)
- June 16 [EXCEL](#)
- July 12 [EXCEL](#)
- August 10 [EXCEL](#)
- September 22 [EXCEL](#)
- October 12 [EXCEL](#)
- November 14
- December 15

\* We generally update and publish the UIG at or shortly after 2:30 p.m. on CPI release dates. If that date falls during a blackout period surrounding a Federal Open Market Committee meeting, we will publish at or shortly after 10 a.m. on the first morning following the blackout.

How to cite this report: Federal Reserve Bank of New York, Underlying Inflation Gauge, <https://www.newyorkfed.org/research/policy/underlying-inflation-gauge>.

[+ ARCHIVE](#)

### About the UIG

We share two monthly estimates of trend inflation. The first derives a measure from a large number of price series in the consumer price index (CPI) as well as macroeconomic and financial variables; the second employs the prices-only data set.

For more information, see our [FAQ](#). [PDF](#)

The New York Fed Staff UIG measures are not official estimates of the Federal Reserve Bank of New York, its president, the Federal Reserve System, or the Federal Open Market Committee.

The New York Fed Staff UIG is a product of the Applied Macroeconomics and Econometrics Center (AMEC).

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## Frequently Asked Questions

### 1. What is the UIG measure?

The UIG provides a measure of underlying inflation and is defined as the persistent part of the common component of monthly inflation.

### 2. What are the key features of the modeling strategy?

The design of the UIG is based on the idea that movements in underlying inflation are accompanied by related changes in the common persistent component of other economic and financial series. Consequently, we examine a large data set and apply modern statistical techniques, known as dynamic factor models, to extract a small number of variables that capture the common fluctuations in the series. These summary factors serve as the basis for constructing the UIG. We report:

- the “prices-only” measure, where the series only include the subcomponents of the consumer price index (CPI);
- the “full data set” measure, where the series include the CPI components as well as a wide range of nominal, real, and financial variables.

The prices-only data set includes 215 disaggregated price series in the CPI. The full data set includes those price series as well as macroeconomic and financial variables for a total of 330 series. A data appendix hosted on the New York Fed website contains a complete list of the data series employed.

The prices-only UIG permits comparisons with core inflation measures, which also restrict their scope to price data. The full data set measure reveals how additional nonprice information further impacts the estimated UIG.

### 3. What evidence suggests the model is useful?

Compared with core inflation measures, the UIG:

- can use information about subcomponent price changes from the cross-sectional and time-series dimensions;
- can consider data beyond subcomponent price changes and incorporate a large number of additional series;
- has outperformed core inflation measures in tests of forecast accuracy over different time horizons;
- provides a more timely and accurate signal of turning points in inflation.

### 4. How do we interpret the output of the UIG model?

The UIG provides a current estimate of trend inflation from 1995 through the latest monthly CPI data release.

### 5. What information do the monthly updates provide?

The model is re-estimated with each monthly CPI inflation data release.

Model re-estimation not only generates a new monthly value of the UIG, but may also result in revisions to previous monthly values of the measure.

The UIG can also be updated on a daily basis to closely monitor inflation dynamics, as has been done internally at the New York Fed since 2005. This capability is especially useful when sudden and large economic fluctuations might call for a policy response, as was the case during the 2007-09 global financial crisis.

**6. Can we obtain the underlying data or code?**

We're making the UIG output values available for download, but we are unable to share the code or data files used in our calculations. The analysis is based on a public methodology described in the *Economic Policy Review* article noted in the References section. The Data Appendix on our website at <https://www.newyorkfed.org/research/policy/underlying-inflation-gauge> contains a complete list of the variables employed in our analysis.

**7. Can I get the UIG measures on a daily basis?**

While this analysis is run on a daily basis internally at the New York Fed, we only share staff estimates on a monthly basis, according to the release schedule outlined on our website. The methodology is public, and described in our 2014 staff report "The FRBNY Staff Underlying Inflation Gauge: UIG" and our September 2017 *Economic Policy Review* article "The New York Fed Staff Underlying Inflation Gauge (UIG)."

**8. Do you calculate a UIG for price indexes other than the CPI? What are your plans to share that information?**

We calculate a measure of underlying inflation for the personal consumption expenditures (PCE) deflator internally for staff analysis. We have no plans to share it with the public.

**References**

Amstad, M., S. Potter, and R. Rich. 2017. "The New York Fed Staff Underlying Inflation Gauge (UIG)," *Federal Reserve Bank of New York Economic Policy Review* 23, no. 2 (December).

Amstad, M., S. Potter, and R. Rich. 2017. "Measuring Trend Inflation with the Underlying Inflation Gauge," *Liberty Street Economics*, May 22.

Amstad, M., S. Potter, and R. Rich. 2014. "The New York Fed Staff Underlying Inflation Gauge (UIG)," *Federal Reserve Bank of New York Staff Reports*, no. 672, April.

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