# UNDERLYING INFLATION GAUGE

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■ The UIG derived from the "full data set" increased slightly from a currently estimated 2.94% in December to 3.00% in January.

■ The "prices-only" measure decreased slightly from 2.18% in December to 2.17% in January.

■ The twelve-month change in the January CPI showed little difference from the December reading-the same pattern observed in the case of the UIG measures.

– **The UIG measures currently estimate trend CPI inflation to be approximately in the 2.2% to 3.0% range, with the prices-only measure close to the actual twelve-month change in the CPI. Recent analysis suggests the rise in the full-data-set UIG is being driven principally by survey measures of manufacturing and nonmanufacturing activity.**

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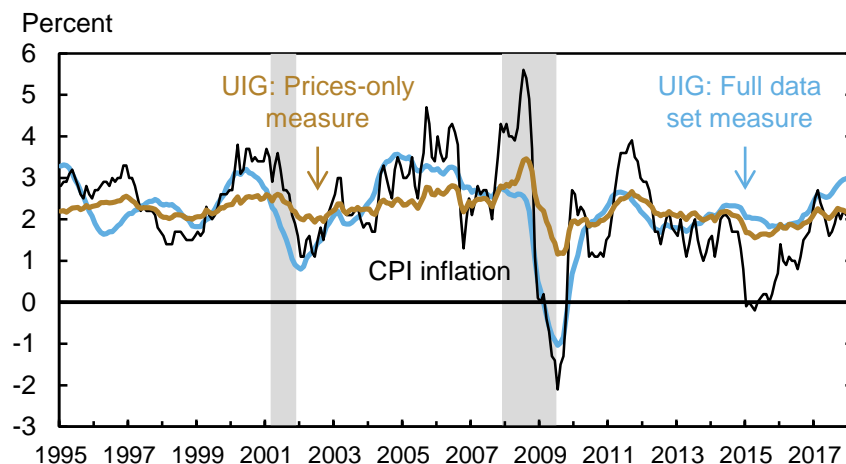


Source: Authors' calculations, based on data accessed through Haver Analytics.
Note: The shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

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

# Underlying Inflation Gauge (UIG) Q&A

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 223 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 346 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.

# Underlying Inflation Gauge (UIG) FAQs

1. **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 "The New York Fed Staff Underlying Inflation Gauge (UIG)" noted in the References section.

2. **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)." Find bibliographic detail in the References section on this page. See also the Data Appendix on our website, which contains a complete list of the variables employed in the construct of our reported measures.

3. **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* (September).

■ *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.

■ *Amstad, M., and S. Potter*. 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

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