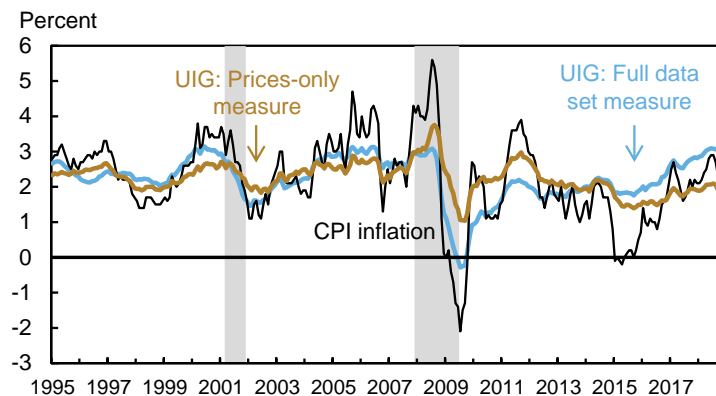


# UNDERLYING INFLATION GAUGE

Updated and released on January 11, 2019

- The UIG “full data set” measure decreased from a currently estimated 2.92% in November to 2.80% in December.
- The “prices-only” measure increased from 1.99% in November to 2.01% in December.
- The twelve-month change in the December CPI was +1.9%, a 0.3 percentage point decline from November.
- **The UIG measures currently estimate trend CPI inflation to be approximately in the 2.0% to 2.8% range. Both measures have declined in the second half of the year reflecting the softening of the CPI.**

## 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 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.

## **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**

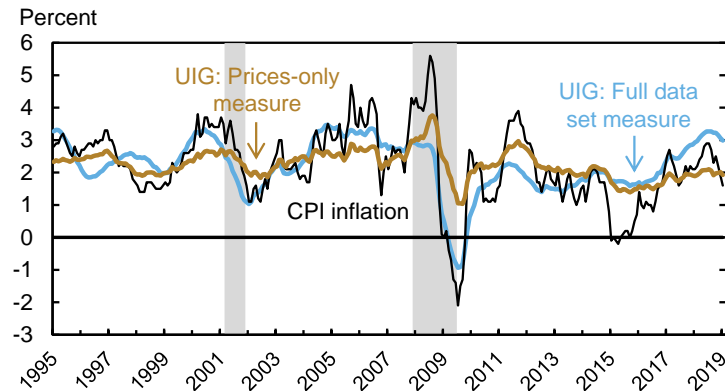
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- *Amstad, M., and S. Potter.* 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

# UNDERLYING INFLATION GAUGE

Updated and released on February 13, 2019

- The UIG “full data set” measure decreased from a currently estimated 3.06% in December to 2.99% in January.
- The “prices-only” measure decreased from 2.01% in December to 1.92% in January.
- The twelve-month change in the January CPI was +1.6%, a 0.3 percentage point decline from December.
- **The UIG measures currently estimate trend CPI inflation to be approximately in the 1.9% to 3.0% range. Both measures have declined since last summer, reflecting the softening of the CPI.**

## 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 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.

## **Underlying Inflation Gauge (UIG) FAQs**

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### **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.

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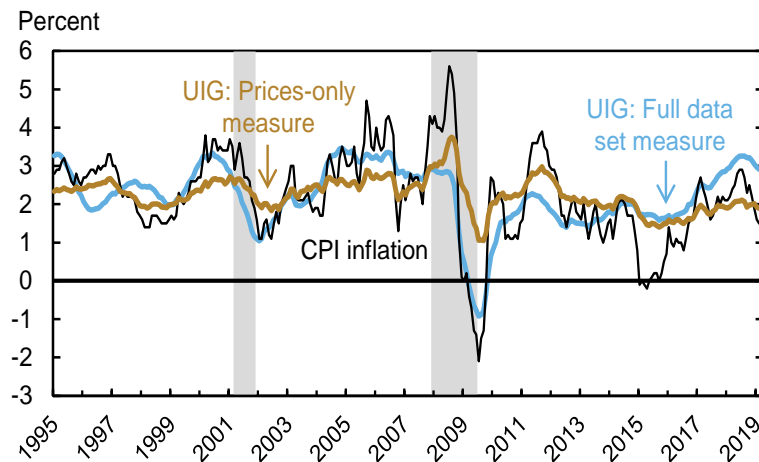
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- *Amstad, M., and S. Potter.* 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

# UNDERLYING INFLATION GAUGE

Updated on March 12, 2019, and released on March 22, 2019

- The UIG “full data set” measure decreased from a currently estimated 2.97% in January to 2.91% in February.
- The “prices-only” measure decreased from 1.93% in January to 1.89% in February.
- The twelve-month change in the February CPI was +1.5%, a 0.1 percentage point decline from January.
- **The UIG measures currently estimate trend CPI inflation to be approximately in the 1.9% to 2.9% range. Both measures have declined since last summer, reflecting the softening of the CPI.**

## 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.

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## **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 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.



## **Underlying Inflation Gauge (UIG) FAQs**

### **1. Can we obtain the underlying data or code?**

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### **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**

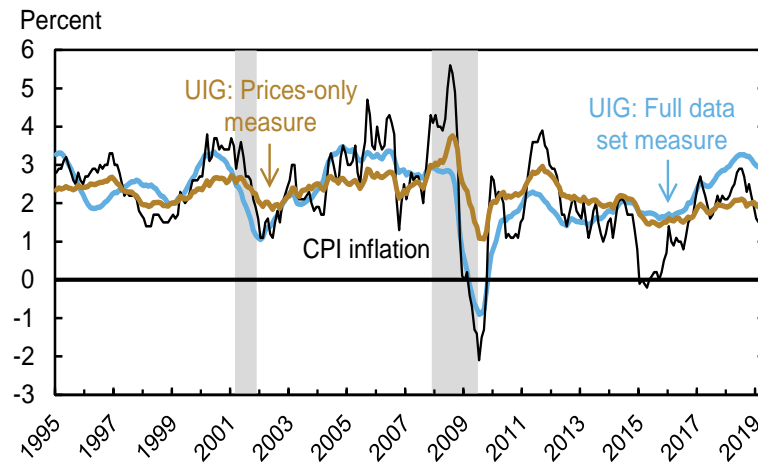
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- *Amstad, M., and S. Potter.* 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

# UNDERLYING INFLATION GAUGE

Updated and released on April 10, 2019

- The UIG “full data set” measure decreased from a currently estimated 2.94% in February to 2.91% in March.
- The “prices-only” measure increased from 1.90% in February to 1.95% in March.
- The twelve-month change in the February CPI was +1.9%, a 0.4 percentage point increase from February.
- **The UIG measures currently estimate trend CPI inflation to be approximately in the 2.0% to 2.9% range. Both measures have declined since last summer, reflecting the softening of the CPI.**

## 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.

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## **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:

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- 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.

## Underlying Inflation Gauge (UIG) FAQs

### **1. Can we obtain the underlying data or code?**

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### **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.

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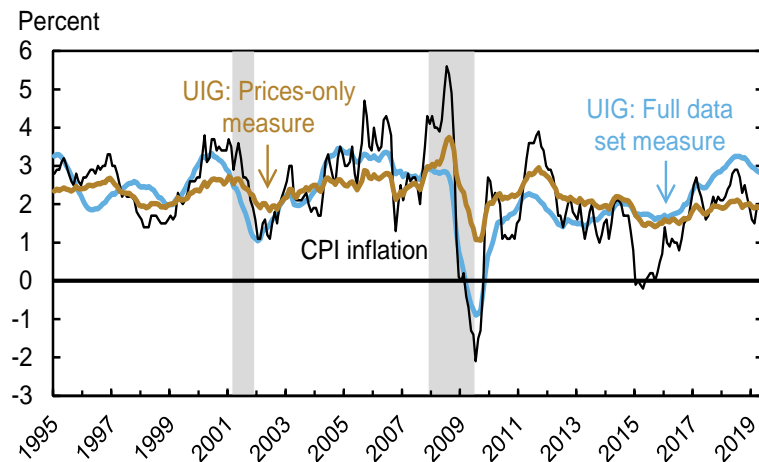
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# UNDERLYING INFLATION GAUGE

Updated and released on May 10, 2019

- The UIG “full data set” measure decreased from a currently estimated 2.88% in March to 2.84% in April.
- The “prices-only” measure decreased from a currently estimated 1.94% in March to 1.92% in April.
- The twelve-month change in the April CPI was +2.0%, a 0.1 percentage point increase from March.
- **The UIG measures currently estimate trend CPI inflation to be approximately in the 1.9% to 2.8% range. Both measures have declined since last summer, reflecting the softening of the CPI.**

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



Source: Authors' calculations, based on data accessed through Haver Analytics.  
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## **Underlying Inflation Gauge (UIG) Q&A**

### **1. What is the UIG measure?**

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

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

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

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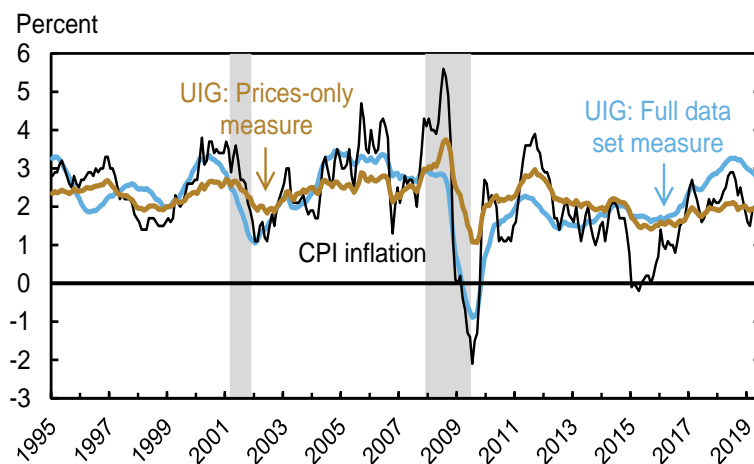
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# UNDERLYING INFLATION GAUGE

Updated on June 12, 2019, and released on June 21, 2019

- The UIG “full data set” measure decreased from a currently estimated 2.85% in April to 2.71% in May.
- The “prices-only” measure increased from a currently estimated 1.92% in April to 1.96% in May.
- The twelve-month change in the May CPI was +1.8%, a 0.2 percentage point decrease from April.
- **The UIG measures continue to estimate trend CPI inflation to be approximately in the 2.0% to 2.7% range.**

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



Source: Authors' calculations, based on data accessed through Haver Analytics.  
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## **Underlying Inflation Gauge (UIG) Q&A**

### **1. What is the UIG measure?**

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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**

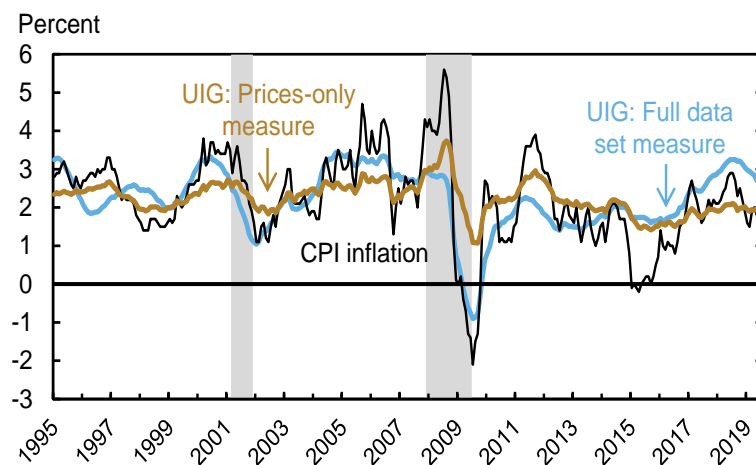
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- *Amstad, M., S. Potter, and R. Rich.* 2017. "Measuring Trend Inflation with the Underlying Inflation Gauge," *Liberty Street Economics*, May 22.
- *Amstad, M., S. Potter, and R. Rich.* 2014. "The New York Fed Staff Underlying Inflation Gauge (UIG)," *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.

# UNDERLYING INFLATION GAUGE

Updated and released on July 11, 2019

- The UIG “full data set” measure decreased from a currently estimated 2.71% in May to 2.64% in June.
- The “prices-only” measure decreased from a currently estimated 1.96% in May to 1.91% in June.
- The twelve-month change in the June CPI was +1.6%, a 0.2 percentage point decrease from May.
- **The UIG measures estimate trend CPI inflation to be approximately in the 1.9% to 2.6% range.**

## 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 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.

## Underlying Inflation Gauge (UIG) FAQs

### **1. Can we obtain the underlying data or code?**

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### **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.

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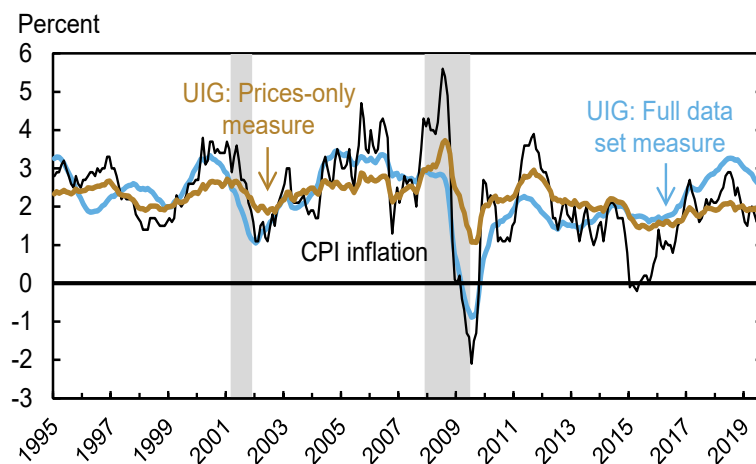
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- *Amstad, M., and S. Potter.* 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

# UNDERLYING INFLATION GAUGE

Updated and released on August 13, 2019

- The UIG “full data set” measure remains virtually unchanged from the previous month, at a currently estimated 2.6% in July.
- The “prices-only” measure remains virtually unchanged from the previous month, at a currently estimated 1.9% in July.
- The twelve-month change in the July CPI was +1.8%, a 0.2 percentage point increase from June.
- **The UIG measures continue to estimate trend CPI inflation to be approximately in the 1.9% to 2.6% range.**

## 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 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.

## **Underlying Inflation Gauge (UIG) FAQs**

### **1. Can we obtain the underlying data or code?**

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

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### **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**

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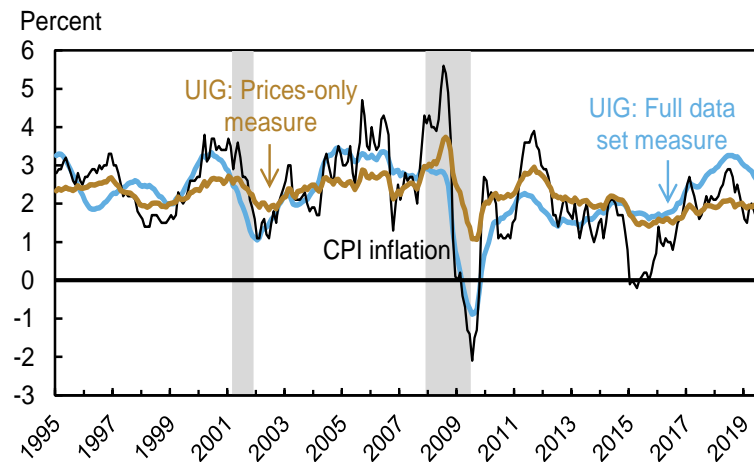


# UNDERLYING INFLATION GAUGE

Updated on September 12, 2019, and released on September 20, 2019

- The UIG “full data set” measure decreased by 0.1 percentage point from the previous month, at a currently estimated 2.5% in August.
- The “prices-only” measure remains virtually unchanged from the previous month, at a currently estimated 1.9% in August.
- The twelve-month change in the August CPI was +1.7%, a 0.1 percentage point decrease from July.
- **The UIG measures continue to estimate trend CPI inflation to be approximately in the 1.9% to 2.5% range.**

## 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 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.

## 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**

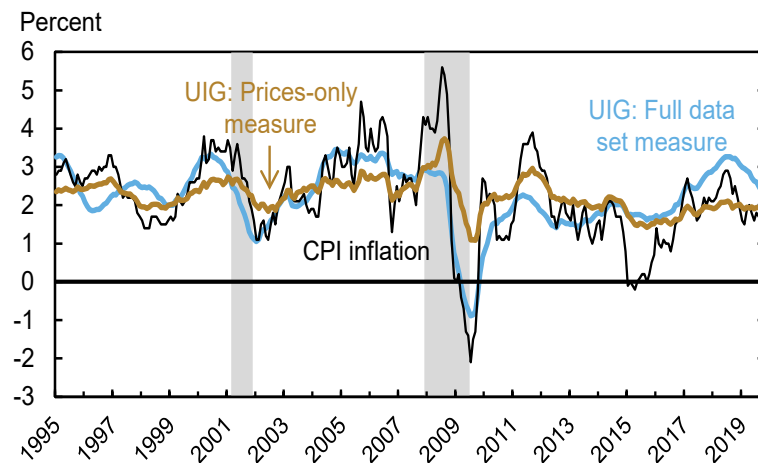
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- *Amstad, M., and S. Potter.* 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

# UNDERLYING INFLATION GAUGE

Updated and released on October 10, 2019

- The UIG “full data set” measure for September decreased by 0.1 percentage point from the previous month to a currently estimated 2.4%.
- The “prices-only” measure for September increased by 0.1 percentage point from the previous month to a currently estimated 2.0%.
- The twelve-month change in the September CPI was +1.7%, unchanged from August.
- **The gap between the two UIG measures continues to narrow. Trend CPI inflation is estimated to be approximately in the 2.0% to 2.4% range.**

## 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 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.

## **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**

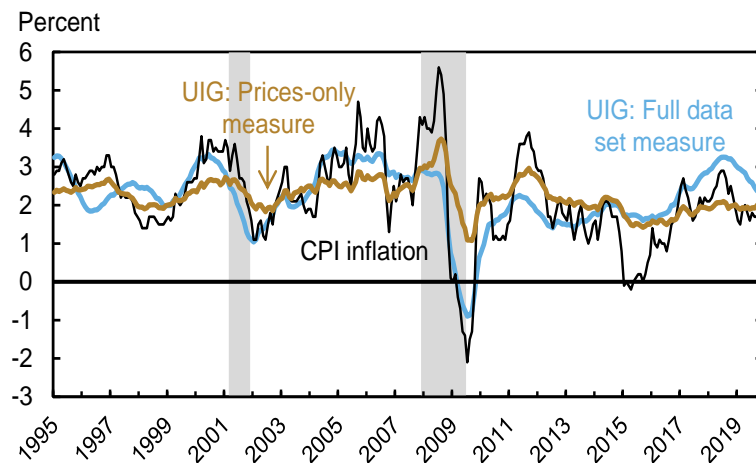
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- *Amstad, M., and S. Potter.* 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

# UNDERLYING INFLATION GAUGE

Updated and released on November 13, 2019

- The UIG “full data set” measure for October decreased by 0.1 percentage point from the previous month to a currently estimated 2.3%.
- The “prices-only” measure for October increased by 0.1 percentage point from the previous month to a currently estimated 2.1%.
- The twelve-month change in the October CPI was +1.8%, a 0.1 percentage point increase from the previous month.
- **The gap between the two UIG measures continues to narrow. Trend CPI inflation is estimated to be approximately in the 2.1% to 2.3% range.**

## 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.

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## **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?**

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

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- 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?**

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### **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**

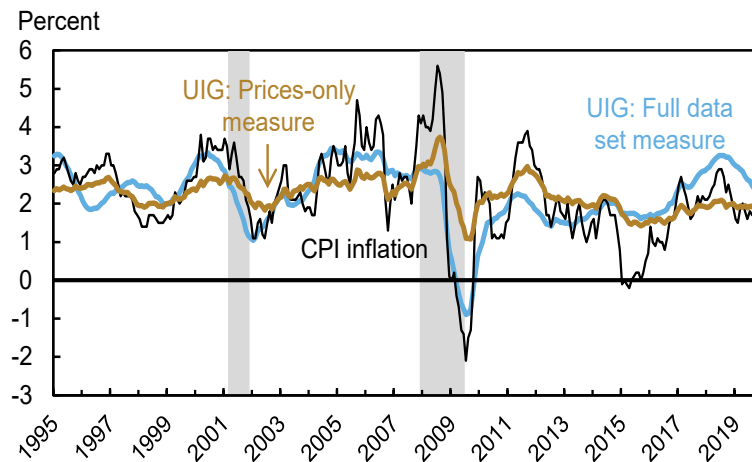
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- *Amstad, M., and S. Potter.* 2009. "Real Time Underlying Inflation Gauge for Monetary Policymakers," *Federal Reserve Bank of New York Staff Reports*, no. 420, December.

# UNDERLYING INFLATION GAUGE

Updated on December 11, 2019, and released on December 13, 2019

- The UIG “full data set” measure for November is unchanged from the previous month at a currently estimated 2.3%.
- The “prices-only” measure for November is unchanged from the previous month at a currently estimated 2.1%.
- The twelve-month change in the November CPI was +2.1%, a 0.3 percentage point increase from the previous month.
- **The gap between the two UIG measures is narrow. Trend CPI inflation is estimated to be approximately in the 2.1% to 2.3% range.**

## 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 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.

## **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* (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.
- *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.