

Truflation BEA PCE Price Divergence Index (TruPCEDIV)

Methodology

April 27, 2026

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1. Executive Summary

While the Bureau of Economic Analysis Personal Consumption Expenditures Price Index remains the preferred Federal Reserve inflation measure, differences in methodology, data frequency, and category construction can cause it to diverge from real time inflation dynamics. These divergences can meaningfully influence market expectations, policy interpretation and investment decisions. The BEA PCE Price Index and the Truflation U.S PCE Inflation Index are constructed differently and exhibit varying behavior over time. While the magnitude of the index differs, the Truflation Index, on average, leads the PCE by approximately 80 days. This lead time reflects Truflation's methodology and the daily updates of its TruPCE-US inflation index.

The Truflation BEA PCE Divergence Index is designed to quantify and track the gap between Truflation's real time US PCE Index and the BEA PCE Price Index. It will identify potential reversals in market trends by examining discrepancies between real time inflation data and government published statistics. By highlighting periods where TruPCE Index deviates from the BEA PCE Price Index, this index will reflect shifts in inflation momentum and indicate emerging economic pressures.

Its purpose is to:

- Track the relationship between Truflation BEA PCE Price Index Inflation Rate and the BEA PCE Price Inflation Rate
- Identify periods of heightened or reduced inflationary pressures.
- Provide a timely measure for analysts, policymakers and market participants to assess economic trends in near real time.

2. Truflation BEA PCE Divergence Index Framework

Truflation has emerged as an alternative data provider, offering a real time perspective on inflation dynamics through high frequency price data. Drawing on more than 30 independent sources, Truflation tracks over 15 million prices for goods and services across the United States.

A detailed explanation of the methodologies underlying the two base indices used in the Truflation Divergence framework can be found in the TruPCE-US

Index methodology on the Truflation website, with the BEA PCE Price Index methodology found here:

<https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-05.pdf>

Primary Calculation

The Truflation BEA PCE Divergence Index is primarily calculated as the direct difference between Truflation's BEA PCE Price Index inflation rate and the BEA PCE Price Index inflation rate. The formula is:

$$\text{Divergence Index} = \text{TruPCE Annualized Inflation Rate} - \text{PCE Price Index Annualized Inflation Rate}$$

A positive value indicates that Truflation is signaling higher inflation than the PCE Price Index, suggesting elevated inflationary pressure. Conversely, a negative value indicates that the PCE measure exceeds Truflation's estimate, implying relatively lower real time inflation pressure.

Secondary Calculation

In addition to the direct measure, a secondary calculation is used to provide deeper analytical insight by capturing momentum, persistence, and potential regime shifts in inflation dynamics. The calculation framework is:

- *Step 1: Daily Differences:* For each period, the PCE Price Index inflation rate is subtracted from the TruPCE inflation rate:

$$\text{Difference} = \text{Truflation} - \text{BEA PCE}$$

- *Step 2: Apply a Rolling Window Standardization:* A three month rolling window is applied to compute both the average difference and the standard deviation of differences. This approach smooths short term noise while emphasizing statistically meaningful divergences.
- *Step 3: Normalized Divergence Index:* The standardized divergence is calculated as:

$$\text{Divergence Index} = \frac{(3\text{-month average difference})}{(3\text{-month standard deviation})}$$

This normalized measure tracks both the magnitude and persistence of divergence over time. Higher values indicate statistically significant deviations between the two inflation measures, often signaling emerging economic pressures or turning points. Values near zero suggest alignment and stability between real time and official inflation metrics.

3. The Output Metrics

The Truflation BEA PCE Divergence Index is updated on a daily basis and produces the following indexes:

1. Truflation BEA PCE Divergence Index percentage difference
2. Truflation BEA PCE Inflation Rate (year on year percentage change)
3. BEA PCE Inflation Rate (year on year percentage change)
4. Full historical time series

The TruPCEDIV index was officially launched on April 27, 2026 with historical data from January 1, 2012.

4. Truflation BEA PCE Divergence Index Benefits

By regularly calculating and monitoring the Truflation BEA PCE Divergence Index, stakeholders gain a more nuanced and timely understanding of inflation dynamics and underlying economic conditions. The index highlights gaps between reported inflation and real time price movements, enabling more informed interpretation of the Federal Reserve's preferred inflation data and improved decision making. The key benefits of the index are:

- **Early Signal of Inflation Shifts:** Identifies gaps between real time inflation and the Bureau of Economic Analysis PCE Price Index, providing advance warning of potential inflation surprises and turning points ahead of official releases.
- **Enhanced Economic Insight:** Reveals discrepancies between high frequency market based data and traditional inflation measures, offering a more nuanced view of underlying inflation dynamics and momentum.
- **Improved Investment and Risk Management:** Supports asset allocation, hedging, and macro positioning by highlighting real time deviations in inflation expectations that may not yet be reflected in official data.
- **Better Policy Interpretation:** Provides additional context for interpreting the Federal Reserve's preferred inflation gauge (PCE), helping policymakers and analysts assess whether official data may be lagging current conditions.
- **Market Sentiment and Volatility Indicator:** Acts as a proxy for uncertainty in inflation expectations; larger divergences can signal rising market volatility, shifting expectations, or regime changes in inflation.

5. Summary

The Truflation BEA PCE Divergence Index offers a quantitative measure of the gap between real time inflation and the preferred Federal Reserve measure of inflation, the BEA PCE Price Index, offering early insight into potential inflationary risks, complementing traditional BEA data with more frequent real time signals.

6. Version History

Version	Date Released	Notes
1.0	April 27, 2026	Genesis of the Truflation BEA PCE Divergence Index