

Multivariate Core Trend Inflation

OVERVIEW

MCT INFLATION

FAQ

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What is the goal of the Multivariate Core Trend (MCT) analysis?

We aim to provide a measure of inflation’s trend, or “persistence,” and identify where the persistence is coming from.

What data are reported?

Our interactive charts report monthly MCT estimates from 1960 to the present. We also provide estimates of how much three broad sectors (core goods, core services excluding housing, and housing) are contributing to overall trend inflation over the same time span. We further distinguish whether the persistence owes to common or sector-specific components. Data are available for download.

What is the release schedule?

We update the estimate of inflation persistence and share sectoral insights following the release of PCE price data from the U.S. Bureau of Economic Analysis each month.

What is the modeling strategy?

A dynamic factor model with time-varying parameters is estimated on monthly data for the seventeen major sectors of the PCE price index. The model decomposes each sector’s inflation as the sum of a common trend, a sector-specific trend, a common transitory shock, and a sector-specific transitory shock. The trend in PCE inflation is constructed as the sum of the common and the sector-specific trends weighted by the expenditure shares.

We use data from all seventeen of the PCE’s sectors; however, in constructing the trend in PCE inflation, we exclude the volatile non-core sectors (that is, food and energy). The approach builds on Stock and Watson’s 2016 “Core Inflation and Trend Inflation.”

How does the MCT measure differ from the core personal consumption expenditures (PCE) inflation measure?

The core inflation measure simply removes the volatile food and energy components. The MCT model seeks to further remove the transitory variation from the core sectoral inflation rates. This has been key in understanding inflation developments in recent years because, during the pandemic, many core sectors (motor vehicles and furniture, for example) were hit by unusually large transitory shocks. An ideal measure of inflation persistence should filter those out.

PCE data are subject to revision by the Bureau of Economic Analysis (BEA). How does that affect MCT estimates?

BEA monthly revisions as well as other BEA periodic revisions to PCE price data do lead to reassessments of the estimated inflation persistence as measured by the MCT estimates. Larger revisions may lead to a more significant reassessment. A recent example of the latter case is described on *Liberty Street Economics* in “Inflation Persistence: Dissecting the News in January PCE Data.”

Historical estimates in our MCT data series back to 1960 are based on the latest vintage of data available and incorporate all prior revisions.

How does the MCT Inflation measure relate to other inflation measures?

The MCT model adds to the set of tools that aim at measuring the persistent component of PCE price inflation. Some approaches, such as the Cleveland Fed’s Median PCE and the Dallas Fed’s Trimmed Mean, rely on the cross-sectional distribution of price changes in each period. Other approaches, such as the New York Fed’s Underlying Inflation Gauge (UIG), rely on frequency-domain time series smoothing methods. The MCT approach shares some features with them, namely: exploiting the cross-sectional distribution of price changes and using time series smoothing techniques. But the MCT model also has some unique features that are relevant to inflation data. For example, it allows for outliers and for the

About MCT Inflation

The Multivariate Core Trend (MCT) model generates estimates of inflation persistence. We update the data and share sectoral insights at or shortly after 2 p.m. on the first Tuesday after the release of personal consumption expenditures (PCE) price index data from the Bureau of Economic Analysis.

MCT Inflation estimates are not official estimates of the Federal Reserve Bank of New York, its President, the Federal Reserve System, or the Federal Open Market Committee.

MCT Inflation is a product of the Applied Macroeconomics and Econometrics Center (AMEC).

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noisiness of the data and for the relation with the common component to change over time.

**How useful can MCT data be for policymakers?**

The MCT model provides a timely measure of inflationary pressure and provides insights on how much price changes comove across sectors.

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