

Should Food Be Excluded from Core CPI?

The consumer price index (CPI) measures the prices urban consumers pay for a representative basket of goods and services. The CPI is one of the most important measures of inflation. The prices of many products and services are directly linked to changes in the CPI. For instance, when the CPI increases, Social Security benefits and wages stated in labor contracts may rise as well.

Forecasting future inflation rates is important because of these links, but which measure to use as a predictor of future inflation is widely debated. Some argue for headline CPI, which includes all items in the representative basket, and others for core CPI, which excludes food and energy prices. Proponents of the latter argue that core CPI inflation is a better predictor of future headline CPI inflation than headline CPI inflation itself because food and energy prices are both volatile and therefore contain little predictive information.

I revisit the issue of whether food and energy should be removed when forecasting headline CPI. Instead of focusing on volatility, we use the signal-to-noise ratio (SNR) as a measure of the relevant predictive significance of each component of CPI for 12-month-ahead year-over-year headline CPI. Taking this approach implies a tradeoff between a component's (i) degree of volatility and (ii) degree of correlation with future headline CPI. The greater a component's SNR, the more useful the component should be in forecasting headline CPI.

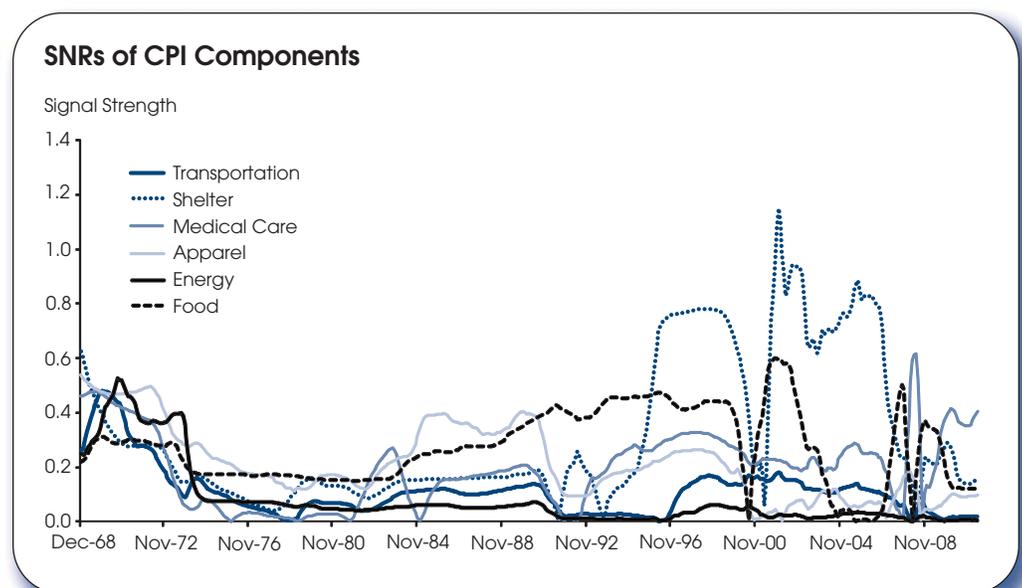
The chart shows estimates of the SNRs of some of the major components of headline CPI from December 1968 to May 2010 estimated over a 10-year rolling window. The solid black line shows the SNR of energy prices and the dashed black line the SNR of food prices. In the late 1960s, the SNRs of food prices

and energy prices were almost identical to those of other components. After the oil crisis of the mid-1970s, the SNR of energy prices dramatically declined and remained low across the entire sample. This low signal strength suggests energy prices will have little predictive content for future headline CPI inflation.

In contrast, the SNR of food prices was low throughout the early 1980s then trended upward before moderating in more recent years. Although this ratio initially had one of the two lowest values, it gradually surpassed the ratios of many other CPI components and in the late 1990s had the second-highest value of all components. Throughout the 2000s the SNR of food prices varied widely but often remained higher than the SNRs of many other components, including transportation and apparel.

The chart indicates that overall the energy component of headline CPI may not be useful for predicting future headline CPI inflation. It is not clear, however, whether food prices are a useful predictor and should be excluded or not.

—Michael W. McCracken



Views expressed do not necessarily reflect official positions of the Federal Reserve System.