



The Determinants of Inflation

The forces that matter don't stand still

It may sometimes seem as if everybody, and yet nobody, is to blame for inflation. Prices can rise because supply chains run dry, government largess overheats the economy, consumers binge on borrowing and spending, workers ignite a spiral with wage demands, or the central bank debases money just by printing it. Perhaps most tragically, if enough people expect high inflation they may needlessly fulfill their own prophesy. These narratives are hard to prove. How can we bring more data to the question?

Inflation is a balancing act. Too high, too low, too fast, or too slow can all cause problems. And intuitively we should expect the dynamics of inflation to vary over time. Our challenge is to map inflation regimes to the drivers of regime change. We turn to some crafty statistical tools.

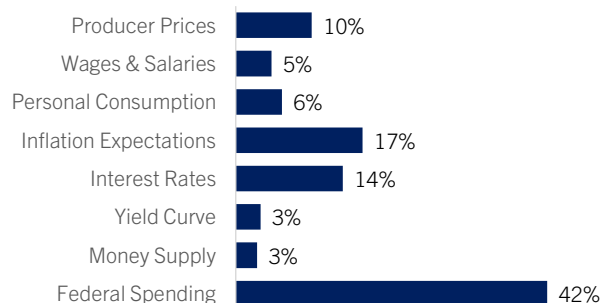
Our main object of interest is the U.S. Consumer Price Index, excluding food and energy, which we characterize as 1-year shifts away from the 3-year inflation average. First, we ask a statistical model called a Hidden Markov Model to define four regimes that best explain the trends in this series from 1960 to now. Each regime can occur for a while but they have to switch back and forth to explain the twists and turns in our sample. This simple yet powerful (and unbiased!) approach extracted four regimes that coincide with inflation being stable, rising steady, rising volatile, and disinflation.

Next, we observe eight economic variables that likely determine inflation outcomes, covering cost push, demand pull, inflation expectations, monetary policy, and fiscal policy. Their averages and co-movement differ across regimes, which leads to predictions for the probability of each regime based on the variables' unique patterns. Finally, we gauge the sensitivity of these regime assessments to a one-unit change in each economic variable. Those that have the most impact are the "swing votes"; they dominate the algorithm's assessment. We care because the algorithm knows the data well.

Our results lead to intuitive narratives of their own. The high inflation of the 1970s, for example, had many determinants. It began as a federal government spending driven bout in the late 1960s, but rising inflation expectations quickly took over in the mid-1970s, only to cede to faster wage growth as a key determinant latter in the decade. Troublingly there are echoes of this narrative in the post-Covid era. As of February 2022, one variable stands out: federal government spending (see Exhibit). Though it started out similar to the recovery after the Global Financial Crisis, our findings suggest that the Covid recovery now harkens back to the late 1960s when fiscal spending followed by inflation expectations created the narrative of high inflation throughout the 1970s. Factors that will need to be monitored in the coming months.

For more on this topic, see our 2022 working paper on SSRN: "The Determinants of Inflation" by William Kinlaw, Mark Kritzman, Michael Metcalfe and David Turkington.

Inflation Determinants as of February 2022




*Notes: Analysis spans Jan 1960 to Feb 2022. The relative importance of each variable is based on the statistical sensitivity of regime probabilities, as explained in the paper cited below.
Source: State Street Global Markets*

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