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How likely is an inflation disaster?

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This paper develops methods to use inflation options data to back out market-perceived probabilities for tail events in inflation. We show that producing accurate estimates requires taking into account that: (i) inflation options' nominal payoffs need to be adjusted to get real Arrow-Debreu probabilities; (ii) disaster probabilities for forward horizons can differ from short or long horizons because of the sluggishness of inflation; and (iii) the risk premium for inflation is not the same at its two tails compared to the center of the distribution. We provide simple, but we hope robust, methods to make all of these adjustments. We show that the adjustments are quantitatively large relative to constructing probabilities using conventional methods.

We apply our methods to data from the US and the Eurozone between 2009 and April of 2024. Starting with the market perceptions of a deflation trap, contrary to previous wisdom, we find that they were low and short-lived in the US 2011-14, but have persisted in the EZ and unconventional monetary policies only provided temporary respite. Turning to high inflation, we find a significant deanchoring of inflation expectations that peaked in mid 2022, and then reanchored as monetary policy tightened. By the end of the sample, we find scars of the high-inflation episode in persistently elevated probabilities of a future inflation disaster. Finally, temporary shocks to inflation, either in the recent past or recent future, have a larger influence on the expectations anchor in the EZ than in the US.