Disinflation with imperfect credibility

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Abstract

This paper presents a theory of the real effects of disinflation. As in New Keynesian models, price adjustment is staggered across firms. As in New Classical models, credibility is imperfect: the monetary authority may not complete a promised disinflation. The combination of imperfect credibility and staggering yields more plausible results than either of these assumptions alone. In particular, an announced disinflation reduces expected output if credibility is sufficiently low.

Key words: Business fluctuations; Disinflation

JEL classification: E32; E31

1. Introduction

Disinflations are an important cause of recessions in economies like the postwar United States. In explaining the effects of disinflation, New Classical economists stress the inability of the monetary authority to make credible policy announcements. New Keynesians emphasize rigidities in nominal wages and prices and especially the staggered timing of price adjustment. This paper argues that both schools are right. I present a model that explains the effects of disinflation through the interaction of imperfect credibility and staggering.

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This paper starts from the results in Ball (1994) on disinflation with staggering. That paper assumes full credibility: a disinflation is announced at its outset, and the announcement is believed. The surprising finding is that quick disinflations can cause booms rather than recessions. This result is empirically implausible, and thus suggests that staggering alone does not explain the effects of disinflation. The current paper shows that the results are more appealing if the assumption of full credibility is relaxed. Most important, combining imperfect credibility with staggering yields a better explanation for the effects of disinflation than credibility problems alone.

To clarify the role of staggering, I begin in Section 2 with a model that lacks it. Firms set prices each period before observing the current money stock. The monetary authority (hereafter, the 'Fed') announces a slowdown in money growth. However, credibility is imperfect: with a known probability, the Fed does not keep its promise. The results in this model are rather trivial. Firms base prices on the expected path of money growth given the likelihood that the Fed keeps its promise. A recession occurs if money growth falls more than expected, but a boom occurs if money growth falls less than expected. With rational expectations, the average output response is zero regardless of the level of credibility. I argue that this result is unrealistic. In actual economies, announcements of disinflation lead to recessions on average: output is more likely to fall than to rise.

Sections 3 and 4 consider a continuous-time model in which price adjustment is staggered. In this case, I focus on the following experiment, which is detailed in Section 3. As in Ball (1994), money growth is initially positive, but the Fed announces that it will decline linearly to zero. The Fed begins to carry out this promise. However, departing from the previous paper, there is a constant hazard at each instant that the Fed reneges. If it reneges, it stops disinflating and instead keeps money growth at the current level forever. I interpret a large hazard of reneging as a low level of credibility.

Section 4 derives the real effects of disinflation. With full credibility—a zero hazard that the Fed reneges—quick disinflations raise output, as in Ball (1994). With a positive hazard, output depends on whether and when the Fed reneges. However, if the hazard is sufficiently high, the expected output effect is negative. That is, in contrast to the model without staggering, credibility problems can reduce output on average. Indeed, the expected sacrifice ratio—the expected output loss divided by the expected fall in inflation—increases monotonically with the hazard of reneging. Finally, for a sufficiently large hazard there is a stronger result: output falls not only on average, but for all realizations of Fed behavior. There is a small recession if the Fed reneges quickly, and a large recession if it does not.

To gain some intuition for these results, consider first the case of full credibility. When money growth begins to fall, only a fraction of firms can adjust prices quickly, because of staggering. However, the firms that do adjust early in the
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