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The case for inflation stability ☆

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Abstract

We evaluate the case for inflation stabilization in a New Keynesian (NNS) model that includes various frictions, capital accumulation and a variety of shocks. In such a model, price rigidity may provide the monetary authorities with an opportunity to improve upon the inefficient flexible price equilibrium via the suitable cyclical manipulation of real marginal costs. We find that such an opportunity is of limited value and that a strong case for perfect inflation stabilization remains. Policies that tolerate a small amount of inflation variability may outperform perfect inflation targeting when capital adjustment costs are low and the monetary distortion is substantial but only if prices are very flexible.

JEL classification: E32; E52

Keywords: Inflation stabilization; Investment; Price rigidity; Distortions

1. Introduction

The recent literature on optimal monetary policy has studied extensively the welfare properties of price (or inflation) targeting within the New Neoclassical Synthesis, NNS (or, new Keynesian, NK) model. This literature has established that in the absence of

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capital accumulation and money demand frictions, a policy of price stability is approximately optimal (Clarida et al., 1999; Goodfriend and King, 1997; Woodford, 2003).

Money demand frictions have well-known implications for the properties of optimal monetary policy. In addition to the standard Friedman zero nominal interest rate rule, their presence also induces a bias in favor of interest rate stabilization. Combined with rigid prices, they create a genuine tension between eliminating the relative price and the money demand distortion. Nonetheless, Khan et al. (2003) and Woodford (2003) show that, under some restrictions on preferences, production and the type of shocks, this tension is resolved overwhelmingly in favor of addressing the first distortion so that optimal deviations from price stability are likely to be small.

The implications of the presence of capital accumulation for the properties of optimal policy have received less attention and have also proved harder to assess. Observing that the markup acts as a tax on inputs and relying on optimal taxation principles, Goodfriend and King (2001) speculate that price stability would remain optimal in the NNS model even when capital were included.[1] Nonetheless, this conjecture has not yet been formally addressed.

Our objective is to examine the case for perfect *inflation* stabilization in a more realistic model that includes capital accumulation, shocks to technology, government expenditures and the demand for money and where the flexible price equilibrium is inefficient due to an imperfect competition distortion and a monetary friction. Most of the literature deals with price targeting and does not distinguish too carefully between that and inflation targeting. We have opted for studying the latter as it seems more relevant for economies which, like their real world counterparts, exhibit sustained nominal growth. Moreover, abstracting from the money demand friction, our formulation allows for long term money neutrality, a desirable feature in the analysis of monetary policy.

We solve the model using a second order approximation to the policy functions in order to compute accurate welfare measures (see Woodford, 2003). We do not attempt to characterize the globally optimal policy (a computationally demanding strategy) but instead restrict ourselves to a simpler but quite valuable task. Namely, to the investigation of whether commonly studied policies that entail substantial price variability, such as a Henderson–McKibbin–Taylor (see Henderson and McKibbin, 1993) rule with imperfect inflation targeting or money or interest rate targeting, outperform perfect inflation stabilization. Admittedly, such an approach has the weakness that the rules considered may not be close to the globally optimal rule. And that the parameters of the rule are taken for granted rather than chosen to optimize outcomes within these rules. Nonetheless, it still seems interesting to study this issue as we think that it is important to evaluate whether simple rules that have been the subject of much recent discussion among academics and central bank economists can produce welfare that is not too different from the heralded constant inflation (or perfect price stability) rule.

We search across a large set of model specifications, involving variation in several key features (the degree of risk aversion, capital adjustment costs, the degree of nominal rigidity, the size of the average mark up, and the size of money demand frictions). Our results

[1]Note, though, that there exists an important difference between the standard tax smoothing argument and that of markup constancy. In the former, both the average tax rate and its variation are optimally selected. In the latter, the steady state tax rate (markup) is exogenous and only its cyclical variation is selected.