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Learning and the monetary policy strategy of the European Central Bank

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Abstract

This paper examines the welfare implications of alternative inflation targeting proposals for the monetary policy of the European Central Bank. We assume that policy makers have to "learn" the laws of motion of inflation in an economy characterized by "stickiness" in domestic price setting behavior and subjected to recurring shocks to productivity, exports and foreign price. We find that a switch from an "asymmetric" inflation targeting strategy to an "symmetric" makes little difference in welfare payoffs, but it comes at a cost of much higher interest-rate variability. We also find that there are practically no welfare gains from switching from an inflation-targeting strategy based on the Harmonized Index of Consumer Prices (HICP) to a strategy based on the domestic price component of the HICP.
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1. Introduction

This paper examines alternative proposals for the inflation targeting program and the overall monetary strategy of the European Central Bank (ECB). In particular, we compare the current practice of asymmetric inflation targeting with the recent proposal by Svensson (2003a) for a fully symmetric inflation-targeting program. We also compare the current practice of targeting inflation in the Harmonized Index of Consumer Prices (HICP) with that of targeting inflation in just the domestic price component of the HICP.

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While the European Central Bank has indeed modified its asymmetric strategy to an inflation target of "below but close to 2%." Svensson (2003b) contends that while this is a "move in the right direction," it is "not good enough." Agreeing with de Grauwe (2003), he asserts that the ECB has missed an opportunity "to thoroughly modernize its strategy, remove the ambiguity, and explicitly and transparently adopt flexible inflation targeting" (Svensson, 2003b, p. 2).

As for the appropriate index for inflation targeting, Gali and Monacelli (2002) found, for a small open economy with sticky price setting behavior, that domestic inflation targeting dominates, from a welfare point of view, both aggregate CPI inflation targeting and an exchange-rate peg. They base their argument on the "excess smoothness" induced in the exchange rate by CPI targeting or an exchange rate peg. This smoothness, in combination with the assumed stickiness in nominal prices, prevents relative prices from adjusting "sufficiently fast," thus causing "a significant deviation from the first best allocation" (Gali and Monacelli, 2002, p. 2).

In contrast to this point, Svensson (2000) has pointed out that "all real-world inflation targeting economies are quite open economies" and "all inflation targeting economies have chosen to target the CPI inflation" (Svensson, 2000, p.155). More recently, Kara and Nelson (2002) found that for the United Kingdom, CPI inflation in the data "behaves much like domestic-goods price inflation" (Kara and Nelson, 2002, p. 22). They report that models which characterize all imported goods as intermediate goods "provides the most attractive alternatives" for understanding UK data, and argue that their evidence is "consistent with CPI inflation-targeting followed in the UK and other open economies" (Kara and Nelson, 2002, p. 22).

In this paper, these alternative targeting strategies are examined using the model put forward by Smets and Wouters (2002) which is calibrated for the Euro area data. In that model, all imported goods are intermediate goods and it has both domestic and import price stickiness. However, our analysis incorporates a learning mechanism for the central bank.

While there has been a wide discussion of alternative inflation targeting rules for open and closed economies, learning has, for the most part, been introduced in this literature in only one dimension, as private sector learning of the policy rule of the central bank.[1] In contrast, we assume, following Sargent (1999) and Cogley and Sargent (2003), that the learning process is on the side of the central bank. The monetary policy authority does not know the "true laws of motion" of inflation generated by the private sector whose behavior can be described by a stochastic dynamic, nonlinear general equilibrium model, with forward-looking rational expectations. Instead the central bank has to learn about the laws of motion of

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[1] For example, Bullard and Mitra (2002) incorporate private sector learning of the specific Taylor rules used by the central bank in the Rotemberg-Woodford closed economy framework. They argue for Taylor rules based on *expectations* of *current* inflation and output deviations from target levels, rather than rules based on lagged values or forecasts further into the future. Orphanides and Williams (2002) also assume private sector learning, but the learning is about the "true" inflation dynamics as they reformulate their expectations.