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Money-based stabilization in a small open economy

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Abstract

We studied the effects of a credible money-based stabilization program under a flexible exchange rate regime in the context of New-Keynesian dynamic general equilibrium model for a small open economy. In this study, we successfully replicated the main stylized facts of money-based stabilization, a slow inflation convergence and an initial recession in domestic sector. In contrast with the previous results, however, a credible money-based disinflation in this model produces a sustained expansion in domestic sector after the initial contraction.

JEL classification: E31; E58; F41

Keywords: Flexible exchange rate; Growth rate of money supply; Inflation stabilization

1. Introduction

Money-based stabilization is an inflation stabilization policy based on reduction of the rate of growth of the money supply under a flexible exchange rate regime. Money-based stabilization programs have been widely used in chronic inflation countries.

However, money-based programs have been much less common than the use of an exchange rate in chronic inflation countries.[1] Robelo and Végh (1995), and Calvo and Végh (1999) provide a number of reasons for the exchange rate to be a preferred anchor.

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[1] According to Reinhart and Végh (1994), among 17 stabilization programs from 1964 to early 1990s, there are only 5 money-based programs.

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First, since the velocity of money may be unstable during the stabilization, it is difficult for a policymaker to determine the appropriate growth rate of the money supply in practice. Second, in the transition from high to low inflation, the economy may experience a period of deflation. Thus, policymaker will engineer a one-time increase in the money supply to avoid deflation, which weakens the policymaker's credibility.

However, there are several reasons for analyzing money-based stabilization in this paper. First, stabilization programs supported by the use of IMF resources have been usually money-based programs.[2] Because most exchange rate-based stabilizations end up in balance-of-payment crises,[3] there is a need to find possible policy instruments to bring down high inflation without triggering crises. It should be noted that many exchange rate-based stabilization programs have failed.[4] Therefore, for a country which experienced a series of failed exchange rate-based programs, it could be wise to switch the anchor.

In this study, we analyze the money-based stabilization program in the context of a New-Keynesian dynamic general equilibrium model for an open economy where the rate of inflation is sticky. Our model is based on Obstfeld and Rogoff's (1995) "Exchange Rate Dynamic Redux". We modify Obstfeld and Rogoff's model in several ways. We assume a small open economy with two sectors (tradable and non-tradable). Money is introduced by a cash-in-advance constraint, which generates the monetary wedge. We also incorporate backward-looking indexation into the model to explain the slow convergence of the rate of inflation.

From this study, we are able to replicate the stylized facts of the money-based stabilization programs, a slow inflation convergence and an initial recession in domestic sector. This result is consistent with empirical and theoretical regularities documented by Calvo and Végh (1999) and Fischer (1986). In contrast to previous results, however, the analysis shows that the credible reduction in the money growth rate produces the sustained expansion of the domestic sector after an initial recession. Another distinguishing feature of this study is that sometime over the adjustment period the rate of inflation is below the new growth rate of the money supply. Therefore, it is not necessary for a policy maker to increase the money supply to avoid deflation during the stabilization. However, the welfare implications of permanent reduction in inflation are ambiguous.

This paper proceeds as follows. In Section 2, we propose a standard dynamic general equilibrium model for a small open economy in the ways described above. Section 3 discusses the effects of a credible money-based disinflation policy, and the last section concludes.

2. The model

Consider a small open economy, that is perfectly integrated with the rest of the world in goods and capital markets. This economy consists of households that supply labor, purchase goods for consumption, and hold money and internationally tradable bonds and

[2] See Agénor and Montiel (1999).

[3] See Calvo and Végh (1999).

[4] For example, the stabilization plans implemented in the Southern-Cone countries, Argentina, Chile and Uruguay in the late 1970s and the recent stabilization plans, such as Mexico's 1987 and Argentina's 1991 convertibility plan.