Available online at www.sciencedirect.com
ScienceDirect
Journal of International Money and Finance 26 (2007) 1095−1112
Journal of International Money and Finance
www.elsevier.com/locate/jimf

# Exchange-rate-based stabilization: Imperfect competition and supply-side effects

Hyuk Jae Rhee*

*Department of Economics, University of Windsor, Windsor, Ontario, Canada N9B 3P4*

**Abstract**

This paper studies exchange-rate-based stabilization programs in the context of a dynamic general equilibrium model for a small open economy that incorporates imperfect competition, a backward-looking wage setting, and an endogenous labor supply. In contrast to previous results, the analysis shows that a permanent disinflation leads to a sustained expansion in the domestic sector and a slow inflation convergence. This study also shows that a temporary stabilization replicates a ''boom-recession cycle''. These results suggest that a backward-looking wage setting and an endogenous labor supply are the key ingredients for reproducing the stylized facts of exchange-rate-based stabilization.


*JEL classification:* E31; E58; F41

*Keywords:* Backward-looking contract; Imperfect competition; Inflation stabilization

## 1. Introduction

Since the mid-1970s, many Latin American countries have launched exchange-rate-based inflation stabilization programs. These programs include 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. All these programs attempted to reduce the rate of inflation by pegging the exchange rate to a foreign currency.

* Tel.: +1 519 253 3000x2385; fax: +1 519 973 7096.
*E-mail address:* jayrhee@uwindsor.ca

0261-5606/$ - see front matter 
doi:10.1016/j.jimonfin.2007.06.004

The common stylized facts of the Southern-Cone exchange-rate-based stabilizations are (a) a slow convergence of the inflation rate, (b) a "boom-recession cycle" in the domestic sector, and (c) real appreciation of the domestic currency. These stylized facts have been explained using either sticky inflation caused by backward-looking indexation in a price-wage setting (Rodriguez, 1982; Dornbusch, 1982) or a lack of credibility of the programs (Calvo and Végh, 1993, 1994a).

In recent programs, such as the Mexico's 1987 and the convertibility plan of Argentina in 1991, the initial boom in domestic economic activity was not followed by a later contraction, and the labor supply expanded during these programs. Thus, it was argued that inflation stabilization may have played an important role in unleashing supply-side responses in labor and investment (Lahiri, 2001; Roldos, 1997).

In this paper, we study exchange-rate-based stabilization programs in the context of a dynamic general equilibrium model for a small open economy that incorporates imperfect competition, a backward-looking wage setting, and an endogenous labor supply. We modified Obstfeld and Rogoff's model (1995) by assuming a small open economy with a cash-in-advance constraint. We also introduced a Calvo-type staggered price-wage setting.

We used this model to study the effects of an exchange-rate-based disinflation policy. Two possible stabilization scenarios are considered: a credible disinflation and a temporary stabilization. From the credible stabilization experiment, we are able to replicate the typical pattern of inflation persistence and a sustained expansion in the domestic sector. This is consistent with the stylized facts of the stabilization programs of Argentina (1991–1994) and Mexico (1988–1992). In this regard, the model is successful. Furthermore, our results stand in sharp contrast with those of previous models. Sticky inflation models cannot reproduce sustained expansion. In our model, however, sticky inflation combined with supply-side effects can mimic the sustained expansion of the domestic sector regardless of the features of preference. In the temporary disinflation case, the model replicates the "boom-recession cycle" as well as inflation persistence. Contrary to previous results of Calvo and Végh (1993, 1994a), however, the nontradable sector experiences a persistent expansion for substantial periods in our model.

The most important aspect of this paper is that the addition of a variable labor supply helps overcome the counterfactual results of sticky inflation models. Another distinguishing feature is that disinflation produces a sustained expansion with slow inflation convergence. These results can also be compared with those of Lahiri (2001) and Roldos (1997). The key ingredients for reproducing the stylized facts of disinflation are a backward-looking wage setting and an endogenous supply side. This contrasts with Calvo and Végh's (1993, 1994a) emphasis on forward-looking staggered pricing and a demand-determined output. It also helps explain the failure of the Robelo and Végh (1995) simulations.

This paper is organized as follows. In Section 2, we propose a standard dynamic general equilibrium model for a small open economy as described above. In Section 3, we discuss the effects of credible and temporary disinflation policies, and in the last section we conclude.

## 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 contains a continuum of differentiated nontradable goods that are indexed by $z$ and distributed uniformly on [0, 1].