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ScienceDirect
Journal of International Money and Finance 26 (2007) 1113–1150
Journal of International Money and Finance
www.elsevier.com/locate/jimf

Inflation targeting and exchange rate pass-through ☆

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Abstract

This paper analyzes how endogenous imperfect exchange rate pass-through affects inflation targeting optimal monetary policies in a New Keynesian small open economy. The paper shows that an inverse relation exists between the pass-through and the insulation of the economy from foreign and monetary policy shocks, and that imperfect pass-through tends to decrease the variability of the terms of trade. Furthermore, with *CPI inflation targeting*, in the short run, delayed pass-through constrains monetary policy more than incomplete pass-through and interest rate smoothing amplifies this effect. When the pass-through decreases, the variability in economic activity tends to rise and the trade-off between the stabilization of CPI inflation and output worsens in direct relation to how strictly the central bank is targeting CPI inflation. In contrast, with *domestic inflation targeting*, optimal monetary policy is not constrained and opposite results occur. Consequently, imperfect pass-through favors the choice of domestic to CPI inflation targeting.

JEL classification: E52; E58; F41

Keywords: Inflation targeting; Exchange rate pass-through; Small open-economy; Direct exchange rate channel; Optimal monetary policy

1. Introduction

A central empirical characteristic of open-economies is that a change in the exchange rate or in the price of the foreign goods passes through incompletely and with delay to the domestic

☆ Financial support from Ente 'Luigi Einaudi' and Princeton University is gratefully acknowledged.
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0261-5606/$ - see front matter
doi:10.1016/j.jimonfin.2007.06.003

price of the imports.[1] This phenomenon, known as imperfect pass-through, has received remarkable attention in the literature and central bank practice due to its relevance in the transmission of foreign and domestic shocks to the economy.

The pass-through of costs to import price is a complex mechanism, and several factors may play a role in its determination. The positive correlation between inflation and inflation persistence, and the positive impact of the expectations of inflation persistence on the pass-through (via the Taylor staggered price-setting behavior), establish a positive relation from inflation to the degree of pass-through (Taylor, 2000). Also, the firm's strategy of the pricing to market (PTM) based on international market segmentation and local currency pricing (LCP) leads to incomplete pass-through (Betts and Devereux, 2000).[2] Furthermore, the presence of shipping costs and non-traded distribution services as well as intermediary firms between the exporters and the consumers is likely to reduce the pass-through more (McCallum and Nelson, 1999; Obstfeld and Rogoff, 2000; Engel, 2002).

Taking these factors into account, it has been possible to obtain interesting results on the relation between the pass-through and the optimal monetary policy.[3]

In a New Keynesian perspective, considering an emerging market economy with nominal rigidities in both the non-traded goods and import sectors, Devereux et al. (2004a) show that in the case of complete pass-through, non-tradable inflation-targeting dominates CPI inflation-targeting and an exchange rate peg while, in the case of delayed pass-through, CPI inflation-targeting performs better. Devereux (2001) considers a small open-economy with sticky prices in the non-traded goods and import sectors and compares the Taylor rule, a rule that stabilizes non-traded goods inflation, strict CPI inflation-targeting and a rule which pegs the exchange rate. He finds that in general, with delayed pass-through, the trade-off between output and inflation variability is less pronounced; the best monetary policy stabilizes non-traded goods price inflation; and strict CPI inflation-targeting performs better with partial pass-through. Smets and Wouters (2002) present a small open-economy model calibrated to euro area data with nominal rigidities in the domestic and imported goods sectors. In this framework, they consider that the welfare costs determined by nominal rigidities in the imported goods sector depend positively on the exchange rate variability. Consequently, they make the point that with delayed pass-through, output-gap stabilization is constrained by the minimization of these welfare costs because it leads to larger exchange rate variability.

[1] For example, Krugman (1987) considering US import data in the period 1980–1983 finds that, in the machinery and transport sector, 35–40% of the appreciation of the dollar was not reflected in a decrease of the import prices. Knetter (1989) finds that for the period 1977–1985 US export prices in the destination market currency tend to be either insensitive to exchange rate fluctuations or tend to amplify their impact, while German export prices tend to stabilize the exchange rate fluctuations. Considering the sample period 1974–1987, Knetter (1993) shows that Japanese export price adjustments in the destination country currency offset 48% of the exchange rate fluctuations while for UK and German export prices this fraction reaches 36%. More recently, Campa and Goldberg's (2002) estimation for the period 1975–1999 and a sample of OECD countries supported the complete pass-through hypothesis for the long run but not for the short run.

[2] LCP, in turn, has been justified in two ways: by a low market share of the exporter country in the foreign market coupled with a low degree of differentiation of its goods (Bacchetta and Wincoop, 2002) and by a greater monetary policy stability of the importing country compared to that of the exporting country (Devereux and Engel, 2001 and Devereux et al., 2004a).

[3] See also Lane and Ganelli (2003) for a survey of the implications of different degrees of pass-through when the currency denomination of assets contracts is taken into account.