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The expenditure switching effect, welfare and monetary policy in a small open economy

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Abstract

This paper analyses the implications of the ‘expenditure switching effect’ for the role of the exchange rate in monetary policy in a small open economy. It is shown that, when the elasticity of substitution between home and foreign goods is not equal to unity, welfare depends on the variances of producer prices and the terms of trade. Producer-price targeting is compared to consumer-price targeting and a fixed exchange rate. It is found that a fixed exchange rate yields higher welfare than the other regimes only when the elasticity of substitution between home and foreign goods is very high.

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1. Introduction

This paper analyses the implications of the expenditure switching effect for welfare maximising monetary policy in a small open economy. Many previous contributions to the literature have not addressed this issue because they are based on models where the elasticity of substitution between home and foreign goods is restricted to

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unity.¹ The model presented in this paper² allows for a non-unit elasticity of substitution between home and foreign goods and uses second-order approximation techniques to derive an explicit expression for welfare.³ It is found that allowing for a non-unit elasticity of international substitution implies that terms-of-trade volatility becomes an important consideration for optimal monetary policy. Furthermore, welfare can be written as a weighted sum of two factors: the variance of producer prices and the variance of the terms of trade. The weight on terms-of-trade volatility is found to be increasing in the strength of the expenditure switching effect.

Previous literature on the welfare effects of monetary policy in closed economies has tended to suggest that strict targeting of consumer prices will maximise aggregate utility.⁴ Such a policy minimises relative price distortions when some prices are sticky and unable to respond to shocks in the short run. Open economy contributions to the recent literature suggest that a welfare maximising monetary policy should focus on stabilising internal relative prices. This is achieved by strict targeting of producer prices.⁵ Further analysis of open economy models, where there is less than perfect pass-through from exchange rate changes to local currency prices, has shown that optimal monetary policy should involve some consideration of exchange rate volatility.⁶ In this case the monetary authority should allow some flexibility in producer prices in order to achieve some desired degree of volatility in the nominal exchange rate. The results of this paper show that terms-of-trade volatility (and thus exchange-rate volatility) can become an important factor in welfare maximising monetary policy even when there is full pass-through.⁷

¹For example see Obstfeld and Rogoff (1998, 2000a, 2002), Devereux and Engel (2003), Devereux (2004), Corsetti and Pesenti (2002a,b), Clarida et al. (2001, 2002). These papers focus on the unit elasticity case because of technical problems in deriving a full solution to a stochastic model when the elasticity is not equal to unity. Tille (2001), using a deterministic model, does analyse the role of international substitutability and shows that the international elasticity can have a significant effect on the transmission of welfare effects across countries. In a stochastic model it is possible to obtain an expression for world welfare when the international elasticity is not equal to unity (see Benigno and Benigno, 2002, 2003a). The specific technical problems relate to obtaining an expression for the welfare of an individual country. Some authors have been able to obtain some insights into optimal monetary policy for an individual country without obtaining a specific welfare function (see Benigno and Benigno, 2003a).

²The model is in the “new open economy macroeconomics” tradition (which originates with Obstfeld and Rogoff, 1995) in that it assumes monopolistic competition and sticky prices. The new open economy literature has been surveyed by Lane (2001).

³The technique used follows Kim and Kim (2003) and Sutherland (2002).

⁴See Aoki (2001), Goodfriend and King (2001), King and Wolman (1999) and Woodford (2003).

⁵See Aoki (2001), Benigno and Benigno (2003a) and Clarida et al. (2001).

⁶See Bacchetta and van Wincoop (2000), Corsetti and Pesenti (2001a), Devereux and Engel (2003), Smets and Wouters (2002) and Sutherland (2005b).

⁷A further case where the basic price targeting result needs to be modified is where the economy is subject to non-optimal ‘cost-push’ shocks. In a closed economy context cost-push shocks imply that optimal policy allows for some flexibility in consumer prices in order to achieve some stabilisation of the output gap. This is often referred to as ‘flexible inflation targeting’ following the terminology suggested by Svensson (1999, 2000). Benigno and Benigno (2002) show that the same result holds in an open economy. Sutherland (2005a) also considers this issue and shows that nominal income targeting can be a good approximation for fully optimal policy when the variance of cost-push shocks is particularly high.

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