North American Journal of Economics and Finance 22 (2011) 102–117

Contents lists available at ScienceDirect

North American Journal of Economics and Finance

Monetary policy and asset prices in an open economy

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ARTICLE INFO

Article history:
Received 30 November 2009
Received in revised form 4 October 2010
Accepted 5 October 2010
Available online 2 November 2010

JEL classification:
E41
E52
E58

Keywords:
Asset prices
Monetary policy
Two-country model

ABSTRACT

This paper examines whether central banks should respond to asset price fluctuations in a two-country sticky price model. We compare a monetary policy rule that targets both domestic asset prices and foreign asset prices with several alternative monetary policy rules. This paper shows that this policy rule can produce preferable outcomes because the domestic central bank incorporates important information that both domestic and foreign asset prices possess into its monetary policy. Our model suggests that central banks should consider both domestic and foreign asset prices in a two country framework with asset price fluctuations.

1. Introduction

The canonical New Keynesian model, which has been used in recent monetary policy analysis, suggests that the achievement of low and stable inflation is a desirable objective for the central bank. On the other hand, in the real world, we often observe situations where the central bank can attain low inflation while an increase in asset prices leads to economic booms. In addition, the recent financial crisis, which originated in the United States, led to severe economic stagnation. The global financial crisis revealed that fluctuations in asset prices spill over into other countries, and therefore indicates that we need to construct models that include such a spill-over effect for asset prices. In other words, we require a model that can explain the effect of the international financial markets on the economy. In such a case it might be desirable for the central bank to take into account the effect of foreign asset price fluctuations on the domestic economy.

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doi:10.1016/j.najef.2010.10.001

Our main question is whether central banks should respond to asset price movements in a two large country model where both domestic and foreign asset prices fluctuate. For instance, does the European Central Bank (ECB) need to conduct its monetary policy according to foreign asset price fluctuations, such as the United States and Japan? To answer this question, we examine a two large country model in which asset price fluctuations spill over across countries. Our model extends the two-country sticky price model developed by Clarida, Galí, and Gertler (2002) to incorporate asset price fluctuations. We focus on the role of Tobin's Q introduced by Tobin (1969). As explained in Lim and McNelis (2008), this is because an increase in Tobin's Q creates a boom in the real economy both indirectly through the consumption decisions of households and directly through the investment decisions of firms. Thus, Tobin's Q plays an important role in the transmission mechanism of monetary policy.[1] Following Lim and McNelis (2008), we regard Tobin's Q as asset prices, and therefore consider the indirect effect of asset price fluctuations on the real economy. Importantly, in our model, an increase in foreign Tobin's Q induces a boom in the domestic economy through a risk-sharing condition between countries.

Several studies analyze monetary policy in a closed economy with asset price fluctuations. According to Carlstrom and Fuerst (2007) and Gilchrist and Leahy (2002), the central bank does not have to target movements in asset prices because monetary policy rules that react strongly to inflation already incorporate the stabilization of asset prices.[2] Bernanke and Gertler (1999, 2001) extend the financial accelerator model constructed by Bernanke, Gertler, and Gilchrist (1999) to incorporate asset price bubbles, and show that a monetary policy rule that stabilizes asset prices produces greater welfare losses than one that responds strongly to inflation. In contrast, Cecchetti, Genberg, and Wadhwani (2003) suggest that the central bank should consider the stabilization of asset prices even if asset prices fluctuate in response to a non-fundamental shock. Also, according to Chadha et al. (2004), Haugh (2008) and Kontonikas and Montagnoli (2006), the central bank might consider the effect of asset price fluctuations on the real economy when asset price misalignments, which deviate asset prices from their fundamental values, are present.[3]

The existing New Keynesian literature on asset price fluctuations prescribes how the central bank should implement its monetary policy when stock prices fluctuate. However, these studies do not focus on the case where asset price fluctuations in a country spill over into other countries. Recently, Gertler, Gilchrist, and Natalucci (2007) construct a small open economy model with the financial accelerator effect. Lim and McNelis (2008) also examine monetary policy when asset prices influence the investment decisions of firms in a small open economy, and show that it might be desirable for the central bank to react to movements in asset prices. Giorgio and Nistico (2007) explore monetary policy in a two country model where asset prices fluctuate in the foreign country.[4] According to their analysis, the domestic central bank should follow monetary policy rules that respond to foreign asset prices in order to attain the objective of inflation stabilization in the domestic economy. These studies do not investigate, however, whether the central bank should respond to both domestic and foreign asset price fluctuations.

The purpose of this paper is to examine whether the central bank should react to asset price movements in a two-country sticky price model where both domestic and foreign asset prices fluctuate. We focus on a comparison between a monetary policy rule that targets not only domestic asset prices but also foreign asset prices and several alternative monetary policy rules. This paper shows that this rule can produce a smaller welfare loss than the alternative monetary policy rules that we consider because the domestic central bank incorporates important information that both domestic and foreign asset prices possess when conducting its monetary policy. The contribution of this paper is to show

[1] See Mishkin (2007) for a detailed discussion of the Tobin's Q channel.

[2] See also Faia and Monacelli (2007).

[3] Bordo and Jeanne (2002) discuss the difficulty in explaining why a central bank which recognizes that asset price fluctuations have large impacts on the real economy does not react to movements in share prices.

[4] In particular, they focus on the direct wealth effect of asset prices. On the other hand, we analyze the case where asset prices induce booms both directly through the investment decision of firms and indirectly through households' consumption decisions in a two country framework. Hence, our model differs from Giorgio and Nistico (2007) in that we consider the indirect effect of asset prices on the real economy.