Inflation targeting, learning and Q volatility in small open economies

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Abstract

This paper examines the welfare implications of managing asset-price with consumer-price inflation targeting by monetary authorities who have to learn the laws of motion for both inflation rates. The central bank can reduce the volatility of consumption as well as improve welfare more effectively if it adopts state-contingent Taylor rules aimed at inflation and Q-growth targets in this learning environment. However, under perfect model certainty, pure inflation targeting dominates combined consumer and asset-price inflation targeting.
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1. Introduction

Many countries now practice inflation targeting, but that has not immunized economies from experiencing asset-price volatility (for example, in the form of exchange rate instability in Australia or share-market bubbles in the United States).

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The practice of controlling changes in goods prices is taken for granted by many central banks, but there is no consensus about the management of asset-price inflation, except in the sense that it is not desirable for asset prices to be too high or too volatile. At the World Economic Forum in Davos in 2003, Lawrence Summers suggested that policy makers should use other tools, such as margin lending requirements or public jawboning, to combat asset-price inflation. He compared raising interest rates to combat asset-price inflation to a preemptive attack, and stated 'it takes enormous hubris to think you know when the right moment has come to start a war (Summers, 2003, p. 1).'

Recent research shows that central bankers should not target asset prices (e.g., Bernanke and Gertler 1999, 2001; Gilchrist and Leahy, 2002) for a closed economy study. However, Cecchetti et al. (2002) have argued that central banks should 'react to asset price misalignments'. In essence, they show that when disturbances are nominal, reacting to close misalignment gaps significantly improves macroeconomic performance. Smets (1997) has also stressed that the proper response of monetary policy to asset-price inflation depends on the source of the asset-price movements. If productivity changes are the driving force, accommodation is called for, and real interest rates should remain unchanged. However, if the source is due to non-fundamental shocks in the equity market, in the form of bullish predictions about productivity, then monetary policy should raise interest rates.

In contrast to previous studies we evaluate monetary policy in a small open-economy framework, and in particular we are concerned with investment in a resource-rich small open economy subjected to the vagaries of international terms-of-trade shocks. Detken and Smets (2004) have shown that high cost asset-price booms are as common in small open economies subject to fundamental terms-of-trade shocks as they are in relatively closed economies driven by fundamental productivity shocks.

We also highlight learning on the part of the central bank. For a small open economy subject to terms-of-trade movements, learning behavior on the part of the policy authority is an appropriate assumption, since movements of the terms-of-trade are determined in international markets far removed from the influence of domestic policy actions. In this context, central banks are more likely to be engaged in learning behavior.[1]

The economy we study has an export sector and an imported manufactured goods sector. The terms-of-trade are driven by movements in the commodity export price relative to the price of manufactured goods. The volatility of this relative price in turn affects share prices and investment in the booming (or declining) export sector.

In this paper, we consider the rate of growth of Tobin's Q, first introduced by Tobin (1969), as a potential target variable for monetary policy. Our reasoning is that Q-growth would be small when the growth in the market valuation of capital

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[1]See Bullard and Mitra (2002) for a study with private sector learning and see Evans and Honkapohja (2003) for a study with central bank learning where the learning relates to obtaining structural parameters needed in the policy rule. See also Honkapohja and Mitra (2005) for a study where the central bank generates forecasts (but that paper did not explore the issue of asset-price targeting in an open economy).