



# Monetary policy and the exchange rate: Evidence from a two-country model

G.M. Voss<sup>a,\*</sup>, L.B. Willard<sup>b</sup>

<sup>a</sup> University of Victoria, Department of Economics, P.O. Box 1700, STN CSC, Victoria BC, Canada V8W 2Y2

<sup>b</sup> OECD, Economics Department 2, rue Andre-Pascal, 75775 Paris, Cedex 16, France

## ARTICLE INFO

### Article history:

Received 17 April 2007

Accepted 9 September 2008

Available online 21 September 2008

### JEL classification:

E32

E52

F41

F42

### Keywords:

Monetary policy

International monetary transmission mechanism

Exchange rates

Exchange rate disconnect

## ABSTRACT

We present a two-country structural VAR model of monetary policy and the exchange rate for the US and Australia that allows us to identify both US and Australian monetary policy innovations. A key finding is the asymmetry in the effects of these innovations on the exchange rate, both the nature of the response and their relative importance. A second key finding is evidence of exchange rate disconnect: innovations to the real economy explain little of the variation in the exchange rate. We also consider the effects of exchange rate innovations and find evidence of slow but substantial pass through to domestic prices with evidence that the response of monetary policy is at least partially responsible for the slow adjustment.

© 2008 Elsevier Inc. All rights reserved.

## 1. Introduction

This paper examines the behaviour of monetary policy and the exchange rate for a small open economy operating under flexible exchange rates. The country of focus is Australia and we use a two-country structural VAR model of the US and Australian economies to consider the effects of monetary policy on the real and nominal exchange rate, and to consider the effects of exogenous exchange rate innovations on the Australian price level. A novel feature of the paper is that we identify monetary policy innovations for both countries, which allows us to examine the full role for monetary policy innovations as well as the relative importance of each of the two sources. Furthermore, the two country set-up we employ is well-suited to identifying exchange rate innovations and assessing their impact on domestic price levels while controlling for the effects of domestic monetary policy.

The first focus of our study is the effects of monetary policy innovations, and other innovations, on the nominal and real exchange rate. These effects are important for assessing theoretical models of exchange rates and motivate a number of recent studies, including Eichenbaum and Evans (1995), Cushman and Zha (1997), Rogers (1999), Kim and Roubini (2000), Kim (2001) and Faust and Rogers (2003). The last of these, which nicely summarizes the literature, identifies three principal

\* Corresponding author. Tel.: +1 250 721 8545; fax: +1 250 721 6214.

E-mail addresses: [gvoss@uvic.ca](mailto:gvoss@uvic.ca) (G.M. Voss), [luke.willard@oecd.org](mailto:luke.willard@oecd.org) (L.B. Willard).

issues. First, the nature of the response of the exchange rate to monetary policy innovations and whether there is evidence of exchange rate over-shooting. Overshooting is generally viewed as evidence in favour of sticky price models, such as [Dornbusch \(1976\)](#), as well as for equilibrium models with liquidity effects.<sup>1</sup> Second, whether monetary policy innovations are associated with departures from uncovered interest rate parity (UIP), which is a common feature of exchange rate models. And finally, whether monetary policy innovations are an important source of exchange rate variation.

The empirical literature typically finds support for the exchange rate overshooting hypothesis but with a delayed peak effect, which is not consistent with rational expectations models where the peak effect is immediate. In addition, studies typically find monetary policy innovations cause significant deviations from uncovered interest rate parity; see for example [Eichenbaum and Evans \(1995\)](#). There is less consensus in the literature though with respect to the relative importance of monetary policy innovations, with estimates of contributions to exchange rate variation ranging from zero to 50%.<sup>2</sup>

Our results directly address these three issues as well but unlike previous studies we consider separately identified domestic and foreign monetary policy innovations. A key aspect of our results is significant asymmetry between the effects of US and Australian monetary policy innovations and the importance of the response of Australian monetary policy to US monetary policy innovations.

We find that Australian monetary policy innovations give rise to a significant exchange rate response that is broadly consistent with [Dornbusch's \(1976\)](#) overshooting model: an immediate change in the exchange rate followed by a slow return toward its original level. And in contrast to previous empirical studies, we do not observe significant deviations from uncovered interest rate parity (UIP) throughout the adjustment. US monetary policy innovations, however, do not significantly affect the exchange rate, largely because Australian interest rates move in tandem with US interest rates in response to the shock. Not surprisingly, given the co-movement in interest rates, we also do not observe significant deviations from UIP. Finally, we also observe asymmetry concerning the relative importance of monetary policy innovations for variation in the exchange rate. US innovations make effectively no contribution while Australian monetary policy innovations make a substantive contribution to both the real and nominal exchange rate. This latter result suggests that previous studies, which typically only consider the effect and contribution of monetary policy innovations from one country, may underestimate the role of monetary policy innovations.

In addition to these results concerning monetary policy innovations, some additional results are available. First, we can examine the interdependence between monetary policies. As noted above, an important part of the adjustment to US monetary policy innovations is the tracking of US interest rates by Australian monetary policy. One expects this is likely to occur for other open economies as well, a point emphasised in [Faust and Rogers \(2003\)](#) assessment of open empirical models of money and the exchange rate. This is also consistent with [Frankel et al. \(2004\)](#), which finds small open economies have relatively rapid and complete interest rate pass through. Second, we can examine what effects other shocks to the two economies have on the real and nominal exchange rates. Here a key result is evidence of disconnect: exchange rate variation is largely unexplained by innovations to the real economy.<sup>3</sup> An implication of this result is that the flexible exchange rate does not play an obvious role in external adjustment for the Australian economy.

The second focus of our study is the effect of nominal exchange rate innovations on the real exchange rate. Such an examination relates to the literature on exchange rate pass through, which considers how nominal exchange rate fluctuations are reflected in aggregate price levels. A limitation of many existing pass through studies is the use of single equation models of prices to measure the extent of pass-through.<sup>4</sup> In effect, such an approach measures the response of prices to a permanent change in the exchange rate. Even if we accept that much variation in the exchange rate is driven by essentially exogenous innovations, this may not be the appropriate experiment as it ignores any subsequent variation in the exchange rate.

In our systems approach, we can first identify exogenous exchange rate innovations and then consider the endogenous response of the domestic (Australian) price level and the exchange rate. We find that in response to such innovations, there is a limited initial domestic price response but over time, through a combination of price and exchange rate adjustment, the effect on the real exchange rate is zero. The adjustment process takes about five years, which is roughly in line with the empirical literature on purchasing power parity.<sup>5</sup> The model also provides a description of how monetary policy responds and contributes to the adjustment process. [Taylor \(2000\)](#) argues that the focus of monetary policy in recent decades on inflation may have contributed to a reduction in exchange rate pass through. Consistent with Taylor's argument, we observe monetary policy responding in a way that would seem to be at least part of the explanation as to why the adjustment of the price level is quite slow.<sup>6</sup>

<sup>1</sup> For a recent survey of exchange rate models, see [Sarno and Taylor \(2002\)](#).

<sup>2</sup> As noted, [Faust and Rogers \(2003\)](#) provides a useful survey of the literature and these conclusions are drawn from their study. Their analysis, which looks at the robustness of these conclusions to identification assumptions, finds support for the overshooting but not the delayed response. They also find support for the result that monetary policy innovations cause deviations from UIP.

<sup>3</sup> The disconnect between the exchange rate and the real economy is well-documented, see [Obstfeld and Rogoff \(2000\)](#).

<sup>4</sup> For example, [Gagnon and Ihrig \(2004\)](#). Note that the focus here is on exchange rate pass through to aggregate price levels. There is a large related literature on pass through to import price levels, see [Campa and Goldberg \(2002\)](#).

<sup>5</sup> Half-lives for deviations from PPP are usually reported in the three to four year range, see [Obstfeld and Rogoff \(2000\)](#).

<sup>6</sup> Other reasons are also likely to be important, such as market structure and price setting behaviour, particularly with respect to the import sectors. See the discussion in [Campa and Goldberg \(2002\)](#).

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات