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The impact of monetary policy shocks on stock prices: Evidence from Canada and the United States

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A B S T R A C T

Using structural VAR models with short-run restrictions appropriate for Canada and the United States, we empirically examine whether trade and financial market openness matter for the impact on and transmission to stock prices of monetary policy shocks. We find that, in Canada, the immediate response of stock prices to a domestic contractionary monetary policy shock is small and the dynamic response is brief, whereas in the United States, the immediate response of stock prices to a similar shock is relatively large and the dynamic response is relatively prolonged. We find that these differences are largely driven by differences in financial market openness and hence different dynamic responses of monetary policy shocks between the two countries that we model in this paper.

1. Introduction

Stock markets are notoriously sensitive to unexpected changes in monetary policy. But this sensitivity may vary across different economies. In this paper we investigate whether the response of stock markets to changes in monetary policy differ significantly between a small open economy (Canada) and a large and relatively closed economy (the United States).

There are two reasons to hypothesize that in small open economies a contractionary domestic monetary policy shock would have a smaller negative influence on stock prices and that domestic monetary policy shocks have a relatively smaller contribution to overall stock price volatility. First, in

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small open economies domestic monetary policy takes the world interest rate as given, and as such has a relatively limited influence on this discount rate that matters for domestic stock prices. At the same time, shocks originating from the rest of the world have a larger impact on stock prices in small open economies. This is in part due to the fact that small open economies operate in international financial markets and unexpected capital inflows and outflows tend to be a larger share of their GDPs, and in part because small open economies tend to have less diversified economic structures than large and relatively closed economies do.[1]

Second, in small open economies the exchange rate is an important component of propagation mechanisms, especially compared to in large economies. International trade is typically a larger share of GDP in small economies than in large and relatively closed economies. Thus, the degree of trade openness may influence the impact and transmission of *domestic* monetary policy shocks on domestic asset prices to the extent that monetary policy affects the exchange rate.[2]

Given the above considerations and the fact that Canada is a quintessential small open economy, and the United States is a large and relatively closed economy, in this paper we address two important and related empirical issues in the context of Canada and the United States: whether trade openness and financial market openness matter for the monetary policy shocks' *impact* on and *transmission* to stock prices.

Our empirical results based on the comparison between Canada and the United States suggest that indeed openness matters significantly in terms of the overall response of stock prices to unanticipated changes in monetary policy. Using structural VAR models with short-run restrictions, we find that in Canada the immediate response of stock prices to a domestic contractionary monetary policy shock is small and that the dynamic response is brief. By contrast, in the United States, the immediate response of stock prices to a domestic contractionary monetary policy shock is relatively large and the dynamic response is relatively prolonged. We also provide an economic explanation of these differences, which are largely driven by differences in financial market openness and hence different dynamic responses of monetary policy shocks between the two countries that we model in this paper.

Our findings underscore for Canada the relative importance of financial market openness for stock prices. We find that unanticipated changes in the U.S. federal funds rate significantly affect the forecast error variance of the Canadian stock prices. On the other hand, we find that the overall impact of external demand shocks on Canadian stock prices is relatively small. One interpretation of this finding is that the floating exchange rate regime provides a cushion for the transmission of the external demand shocks to the real sector in Canada.

While monetary policy primarily influences aggregate demand, the stock market serves as an important channel of the monetary transmission mechanism. Stock prices influence financial wealth, and hence affect consumption, investment and labor supply decisions (Poterba, 2000; Lettau and Ludvigson, 2004). Moreover, in both Canada and the United States, the share of financial assets in household wealth grew rapidly during the time period we examine in this paper.[3] Thus, it is increasingly important to understand whether, and how, monetary policy affects stock prices over time in the context of trade and financial market openness.

Despite the growing prominence of the link between asset prices and aggregate demand, most empirical open economy models continue to rely on the conventional Mundell–Fleming framework. In this framework, given that households divide a fixed amount of wealth between a bond portfolio and domestic money holdings, one can write down the equilibrium conditions for either the bond market

[1] For instance, Johnson and Schembri (1990) and Souki (2008) find that shocks originating from the United States are more important in explaining fluctuations in Canadian macroeconomic variables than domestic shocks.

[2] A separate issue is whether monetary policy should target asset price volatility. In this regard, economists are still debating the pros and cons of interventions in 2008 by the U.S. Federal Reserve in order to stave off a financial crisis largely prompted by the collapse in housing prices. See, Bernanke and Gertler (2001), Geithner (2006), and Roubini (2006), for the recent debate relevant to the U.S. There appears to be fewer compelling reasons to target asset price volatility in small open economies. See Hördahl and Packer (2007) for a succinct review.

[3] In the United States, either directly or indirectly, more than two thirds of the households own financial securities (Wolff, 2006: Table 5). In Canada, about one-third of the households own financial securities as part of their overall wealth (Pichette, 2004).