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International transmission of U.S. monetary policy shocks: Evidence from VAR's ☆

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Abstract

This paper documents data-oriented, detailed evidence on the international transmission of U.S. monetary policy shocks for the flexible exchange rate period using VAR models. First, U.S. expansionary monetary policy shocks lead to booms in the non-U.S., G-6 countries. In this transmission, changes in trade balance seem to play a minor role while a decrease in the world real interest rate seems important. Second, U.S. expansionary monetary policy shocks worsen the U.S. trade balance in about a year, but subsequently it improves. Overall, the basic versions of Mundell–Flemming–Dornbusch (MFD) and the sticky price (or sticky wage) intertemporal models do not seem to be consistent with the details of the transmission mechanism, and some extended versions seem to be necessary to fit the details.

JEL classificaion: C30; E52; F41

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1. Introduction

This paper examines the mechanism by which U.S. monetary policy shocks are internationally transmitted in the flexible exchange rate regime. Does a monetary expansion in the U.S. lead to recessions or booms in other countries? Does a monetary expansion improve or worsen the trade balance (or the current account)? These questions have long been discussed, but remain controversial.[1]

The ambiguity in the effects (predicted by theoretical models) comes from two sources. The first is ambiguous predictions by each model. For example, the traditional Mundell–Flemming–Dornbusch (MFD) model alone has ambiguous predictions on the effects.[2] The ambiguity in the international monetary transmission mechanism has been amplified by the development of a new framework. Applications of the intertemporal model (equipped with sticky price or/and sticky wage) to the international monetary transmission mechanism, for example, Svensson and Van Wijnbergen (1989) and Obstfeld and Rogoff (1995), provide a different perspective. Their basic predictions are sometimes different from those of the MFD model. Furthermore, even when both frameworks suggest similar predictions, the detailed transmission mechanism differs in some cases.[3]

To resolve the ambiguity of the two sources, this paper documents empirical evidence. First, I examine the effects of monetary policy shocks on the variables of the primary interests, such as trade balance and foreign output. Second, I infer the exact transmission mechanism by examining the effects on related variables such as terms of trade, real interest rates, and so on. The first type of evidence is directly related to policymaking. For example, if a monetary expansion leads to an improved trade balance, then a country with trade deficits may use a monetary expansion to improve it. The second type of evidence can shed a light on the recent extensive search for the correct theoretical model for international monetary policy analyses.[4]

[1] I focus on the effects of U.S. monetary policy shocks in order to study the international monetary policy transmission mechanism. First, monetary policy shocks in a non-U.S. country are likely to have minor effects on other countries. Second, there has been relatively more extensive research on the identification of the U.S. monetary policy. I hope to obtain more robust results by exploiting past studies.

[2] Refer to Dornbusch (1980), Chapter 9 of Obstfeld and Rogoff (1996), and Stockman and Obstfeld (1985) for the basic exposition of the MFD model.

[3] The liquidity model, for example, Grilli and Roubini (1992) and Schlagenhauf and Wrase (1995), is another microfoundation model on which the discussion on the international monetary transmission can be based. In Section 4, the liquidity model is briefly discussed.

[4] See Christiano et al. (1998) for the importance of this type of evidence in searching for the plausible theoretical models.