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Contents lists available at ScienceDirect

Journal of International Money and Finance

journal homepage: www.elsevier.com/locate/jimf



Globalization and monetary policy comovement: International evidence



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ARTICLE INFO

Article history:

Available online 4 July 2016

JEL Classification:

C11

C38

F42

E52

Keywords:

Comovement in monetary policy

Globalization

Dynamic latent factor model

Bayesian estimation

ABSTRACT

This paper empirically characterizes the comovement in monetary policy of five advanced economies in the period 1980–2009. I estimate a Taylor rule for each country and use the residual of the Taylor rules to estimate a dynamic latent factor model with common and Europe-specific factors. I quantify the importance of the common factor in explaining comovement in the residual variation of monetary policy and show that the common factor is particularly important during a period of globalization (1988–2003). I estimate the dynamics of the importance of the common factor using rolling sub-samples and show that trade-openness increases the importance of the common factor in monetary policy in the US.

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1. Introduction

Globalization is increasing links between the world's economies, particularly through trade flows and capital markets. For example, the cumulative increase in the volume of world trade since 1960 is almost three times larger than that of world output during the same period. Also, there has been a striking increase in the volume of international financial flows during the past two decades, given that these flows have jumped from less than 5% to approximately 20% of GDP of industrialized countries.¹ Does such a dramatic increase in global interdependence mean that international policy coordination is now a necessity for effective policy making?

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¹ See Kose et al. (2008), Lane and Miles-Ferretti (2007) for reference.

This question has given rise to a lively debate among academic economists and policymakers.² The popular press joined the debate during the 2008 global financial crisis when all major central banks announced coordinated cuts in interest rates to halt the first global recession since the Great Depression.³ However, there is little systematic empirical evidence to quantify the importance of globalization in monetary policy coordination. The main contribution of this paper is to close this gap in the literature by identifying a global factor in the monetary policies of advanced economies. I also show that at least part of the global comovement in monetary policy reflects policy coordination, after controlling for misspecifications in open economy monetary policy rules. Lastly, I provide evidence in favor of increases in the global comovement of monetary policy due to the growing importance of global trade links.

I provide empirical evidence in favor of monetary policy comovement by estimating a Bayesian dynamic latent factor model and identifying a common component in the monetary policy of the US, UK, Canada, Japan and Germany from 1980 to 2009.⁴ I first estimate a country-by-country Taylor rule allowing for current output gap, inflation stabilization and interest rate smoothing. I then estimate a dynamic latent factor model on the residual of the Taylor rule using Bayesian posterior simulation. In the dynamic factor model, I allow for a common G-5 factor that affects all the countries in my sample and a Europe factor that affects only the UK and Germany. Clarida et al. (1998) provide evidence that the monetary policies of European countries (UK, France and Italy in their sample) are heavily influenced by Germany's monetary policy. The Europe factor here is meant to capture this influence of Germany on Bank of England monetary policy and isolate that influence from across G-5 influence of the common factor.

The common G-5 factor is very well-identified in the estimation. I consider fraction of variance of the residual of the Taylor rule that is attributable to the global factor as the relevant measure of importance of global comovement in monetary policy. The G-5 factor explains on average 24% of the residual variation in monetary policy. Kose et al. (2008) employ a Bayesian dynamic latent factor model to estimate common and country-specific components in macroeconomic aggregates of the G-7 countries, and document that the G-7 factor on average accounts for more than 26% of output variation and explains roughly 16% and 19% the volatility of consumption and investment. Thus, the G-5 factor exerts a similar influence on monetary policy comovement as the contribution of common factors in real macroeconomic variables.

The literature on the international dimensions of monetary policy is primarily theoretical and *normative* in nature. For example, Ball (1998), Duarte and Obstfeld (2008) and Sutherland (2004) build a two country dynamic, stochastic, general equilibrium model and analyze an open economy *optimal* monetary policy problem.⁵ In a related branch of literature, Rogoff (2006) and Taylor (2008) advise policymakers on how to conduct monetary policy in a global economy. These papers address normative questions such as whether central banks should pay any attention to exchange rate or asset price volatility in a globalized market, or whether global excess capacity should play a role in optimal monetary

² See Brooks et al. (2003), Taylor (2008), Bernanke (2007), and Rogoff (2006) for example.

³ See Dougherty and Andrews (2008), NY Times, and Buiters (2007), Financial Times.

⁴ In the famous trilemma result in international macroeconomics it is impossible to have independent monetary policy, fixed exchange rate and free capital movement at the same time (Obstfeld et al., 2005). However, all the countries in this study have flexible exchange rate and free capital market throughout the sample period (1980–2009). Thus, from the point of view of the trilemma result, these countries are free to pursue independent monetary policy. The question addressed in this paper is whether these countries pursue coordinated monetary policies in the face of rising global interdependence through trade and financial links.

⁵ Ball (1998) studies optimal monetary policy rules in the open economy and argues that inflation targeting can be dangerous in the open economy. Instead, he proposes to target long-run inflation, which is not influenced by the exchange-rate-to-import-price channel, and so targeting it does not induce large exchange rate movements. Sutherland (2004) analyzes the implications of financial market structure for the existence and size of welfare gains from international monetary policy coordination. Devereux and Engel (2003) develop a welfare-based model of monetary policy in an open economy. They show that, in the presence of local currency pricing, the optimal monetary policy leads to a fixed exchange rate, even in the presence of country-specific shocks. Duarte and Obstfeld (2008) show that this result hinges critically on the prediction that international consumption levels are perfectly synchronized under flexible prices and argue that realistic modifications of the model – such as, the presence of nontraded goods – upset the fixed exchange rate prescription even in the absence of an expenditure-switching role of exchange rate changes.

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