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What can we tell about monetary policy synchronization and interdependence over the 2007–2009 global financial crisis?

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ABSTRACT

We investigate the synchronization and nonlinear adjustment dynamics of short-term interest rates for France, the UK and the US using the bi-directional feedback measures proposed by Geweke (1982) and appropriate smooth transition error-correction models (STECM). We find evidence to support the increasing synchronization of these rates over the period 2005–2009 as well as of their lead–lag causal interactions. Moreover, short-term interest rates converge towards a common long-run equilibrium in a nonlinear manner and their time dynamics exhibit regime-switching behavior. As far as the underlying types of monetary policies conducted by the world's leading central banks are concerned, our empirical evidence thus reveals strong interdependence, but only some degree of synchronization.

1. Introduction

It is now common that financial stability constitutes a key factor for a healthy and successful economy since in such context depositors and investors have confidence that the financial system is safe and stable with a high degree of resilience to internal and external shocks. Further, failures in particular areas cannot spread to other sectors or to the whole economy.

Today, preserving financial stability is widely viewed as a primary role of central banks as monetary policy and the stability of financial systems are closely interlinked.[1] A large number of previous studies documented that changes in target interest rates have had a significant impact on financial market conditions and stability, through affecting equity prices and macroeconomic fundamentals such as inflation and exchange rate equilibriums (e.g., Rigobon and Sack, 2003; Bernanke and Kuttner, 2005; Chen, 2007; Ioannidis and Kontonikas, 2007; Di Giorgio and Rotondi, 2011). To the extent that the financial system performs the function of efficiently allocating available funds to the most productive investments for individuals and corporations, the rise of financial instability may lead stock markets to collapse and imply harmful repercussions on the performance of both financial and real sectors. Therefore, if central banks fail to control the growing financial instability, their policies may not be properly applied due to ineffective responses from financial markets and a pervasive lack of confidence by investors.

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[1] The issue of financial stability and central bank missions has been examined by, among others, Healey (2001), Cihák (2006), and Howitt (2012).

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Table 1
Timeliness of target interest rate changes by the US Fed, the Bank of England and the European Central Bank: September 2007 – March 2010.

US Federal Reserve System		Bank of England		European Central Bank	
Announcement dates	Size of change	Announcement dates	Size of change	Announcement dates	Size of change
September 18, 2007	−50				
October 31, 2007	−25				
December 11, 2007	−25	December 6, 2007	−25		
January 22, 2008	−75	January, 2008	−25		
January 30, 2008	−50				
March 18, 2008	−75				
April 30, 2008	−25	April 10, 2008	−25		
				July 9, 2008	+25
October 8, 2008	−50	October 8, 2008	−50	October 8, 2008	−50
October 29, 2008	−50			October 9, 2008	+50
		November 6, 2008	−150	November 12, 2008	−50
December 16, 2008	−75	December 4, 2008	−100	December 10, 2008	−75
		January 8, 2009	−50	January 21, 2009	−100
		February 5, 2009	−50		
		March 5, 2009	−50	March 11, 2009	−50
				April 8, 2009	−50

Notes: The target rate changes are expressed in basis points compared to the previous levels. For the US, the changes in federal funds rate (i.e., the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight) are specified and announced by the Federal Open Market Committee (FOMC) in its policy stance. For the UK, the official bank rate (i.e., interest rate paid on commercial bank reserves) is voted by the Bank of England's Monetary Policy Committee. The ECB key interest rate is set by its Governing Council and refers to its deposit rate published in the monthly bulletin.

The role of central banks in the regulation of global financial stability has been however under close scrutiny in the aftermath of the recent financial crisis that originated with the massive failures of the subprime mortgage markets in the US and quickly spilled over to other countries. Besides the efforts of other authorities such as governments and international regulatory institutions, it is generally believed that policy interventions by central banks are essential to regulate financial stability and to reduce the negative impact of the financial crisis. The majority of researchers and policymakers share a common view that more central bank coordination would help the global economy to recover from the financial crisis. Moreover, there are at least three factors underpinning their coordinated actions.

First, monetary policy coordination helps remedying an operational asymmetry. That is, the current financial crisis is a global matter as a result of financial liberalization and globalization of capital markets, while policy coordination of central banks at international level appears to be visibly weak. During the recent fifth central banking conference of the European Central Bank (ECB), the Chairman of the US Federal Reserve System (US Fed), Ben Bernanke, pointed out that although the merits of coordinated monetary policies among central banks have been discussed and approved for decades, such coordination has been quite rare in practice. The unique example over the last years concerns the joint announcement of interest rate cuts by the US Fed with five other leading central banks on October 8, 2008, in an effort to calm down the financial market turmoil and to combat the significant deterioration of the main economic performance indicators (Table 1). Second, the recent episode of financial instability and crisis indicate that the hypothesis of efficient capital markets, the purpose of self-regulated markets and the resilience of free markets appear implausible. More market discipline, developed in a coordinated framework by central banks, thus seems necessary to deal with global economic challenges. Finally, as noted by many economists and banking experts, the current architecture of the global financial system is subject to much criticism due to the significant deficiencies and illegal actions carried out by major international financial institutions. That is, during the global financial crisis of 2007–2009, the International Monetary Fund demonstrated major failures in fostering global monetary cooperation and securing global financial stability, while the Bank of International Settlement failed to provide a prudential framework for macroeconomic policies. With the principal aim of restoring investor confidence and reducing the crisis impact on the real economy, and on financial and banking sectors, the central banks have been emerging as key actors in global regulation tasks by actively assuming their role as liquidity providers of last resort for the financial markets. They are however aware of the difficulties in global crisis monitoring without effective coordination with other central banks elsewhere.

The context of the global financial crisis and economic meltdown has created a natural framework for investigating the issue of central bank policy coordination. We propose to draw inferences about the synchronization and interdependence of monetary policies conducted by leading central banks by analyzing the information content of short-term interest rates for France, the UK and the US over the recent periods.[2] Our choice is particularly motivated by the fact that short-term interest

[2] While monetary aggregates may affect the dynamics of interest rates especially via monetary models of exchange rates (e.g., Beckman et al. (2011) and references therein) assuming either the validity or the invalidity of the purchasing power parity, they are not included in our empirical analysis. The reason is that central banks may have different views about the role of monetary aggregates in the conduct of monetary policy. For instance, Kahn and Benolkin (2007) show that while the growth of money has no practical role in policy discussions at the US Fed, it is closely watched by the ECB for the inflation outlook and thus for the target interest rate over the medium term to long term. Moreover, interest rates may be set independently of the stock of money due to different economic conditions. For example, over the recent US subprime crisis the policy rate is held at a very low level even through the stock of money has been increased significantly in order to improve the liquidity in financial markets.