



# Macroeconomic policy responses to financial crises in emerging European economies



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## ABSTRACT

This paper contributes to the literature on monetary policy responses in emerging economies to international financial crises. Such an issue is especially relevant for these countries insofar as they tend to be more unstable than developed countries. In addition, they suffer from larger cumulative output losses that have long-lasting negative effects on growth. If the earlier literature has suggested that emerging countries conduct pro-cyclical policies that exacerbate the impact of shocks, recent findings drawn from the experience of the global financial crisis show that they tend to more frequently adopt counter-cyclical monetary policies. However, even in the last crisis, all countries did not conduct expansionary monetary policies. Among the factors explaining such a behavior, the literature identifies the currency mismatch. This paper is related to this literature. It analyzes monetary policy responses to common financial shocks over the period 1995–2010 for a sample of ten emerging European countries. Emerging Europe has especially suffered from the global financial crisis. Three monetary instruments are analyzed: the nominal short-term interest rate, the real exchange rate, and the foreign exchange reserves. Our empirical methodology used structural Bayesian vector autoregressive (SBVAR) models over two crises periods (1995Q1–2001Q4 and 2002Q1–2010Q4). Our main findings are the following. First, common international financial shocks lead to different monetary policy responses. Second, countries with high currency mismatch ratios suffer from both fear of floating and fear of losing international reserves.

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## 1. Introduction

This paper investigates policy options available for emerging economies to cope with financial crises. Focusing on monetary policy, we provide some answers to the following question: how do emerging markets respond to financial crises? Such an issue is especially relevant for emerging countries. First, as stressed by the empirical literature on business cycles (see, for instance, [Kose and Prasad, 2010](#); [Claessens et al., 2011](#)), the volatility of macroeconomic variables tends to be higher in emerging economies relative to advanced countries. Second, [Kose and Prasad \(2010\)](#) show that the amplitude of recessions is three times larger in emerging markets in comparison to advanced economies. Emerging economies suffer from larger cumulative output losses while recessions associated with financial crises exert long-lasting negative effects on growth ([Balakrishnan et al., 2011](#); [Cerra and Saxena, 2008](#)).

An extensive literature suggests that emerging countries tend to adopt pro-cyclical policies that exacerbate the impact of negative shocks. For instance, [Calderón et al. \(2004\)](#) find, for a sample of 12 emerging economies with annual data covering the period 1996–2002 (except for Chile, 1991–2003), that countries suffering from lower credibility – proxied by the country risk spread on sovereign debt – are unable to conduct counter-cyclical macroeconomic policies. This finding is robust to different measures of fiscal and monetary policy stances. In a study based on a large sample of advanced and developing countries for the period 1960–2003, [Kaminsky et al. \(2005\)](#) show that developing and emerging countries exhibit pro-cyclical fiscal and monetary policies, amplifying the destabilizing effects of capital inflows. On the contrary, in OECD countries, authorities conduct counter-cyclical policies that mitigate the negative effects of capital flows on output. Several factors explain the adoption of pro-cyclical policies in developing and emerging countries: political distortions, weak institutions, and capital market imperfections.

The global financial crisis of 2008–09 has led to a renewed interest of the analysis concerning economic policy responses to financial crises in emerging countries (See, for instance, [Ghosh et al., 2009](#); [IMF, 2010](#)). A growing number of studies have provided new empirical evidences

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according to which emerging economies tend to more frequently adopt counter-cyclical monetary policies to face crises. Monetary authorities have three main instruments at their disposal to respond to crises: the interest rates, the exchange rates, and the foreign exchange reserves.

Vegh and Vuletin (2012) study the cyclical components of short-term interest rates and real GDP for 68 countries over the period 1960–2009. They find that from 1960 to 1999, 51% of developing countries pursued pro-cyclical monetary policy (i.e., a negative correlation between the short-term interest and the GDP cyclical components) while over the period 2000–2009, around 77% of these countries conducted counter-cyclical monetary policy (i.e., a positive correlation between the short-term interest and the GDP cyclical components). Coulibaly (2012) analyzes the behavior of monetary policy during financial and economic crises over a sample of 188 countries from 1970 to 2009. The monetary policy stance is measured with short-term interest rates. A decline in the interest rate in the year of the crisis relative to the previous year signals a counter-cyclical monetary policy. While in the 1990s, around 55% of emerging economies lowered their interest rate during crises episodes, this share increased to 70% during the 2000s, and reached 80% in 2008–2009. Coulibaly (2012) finds that the adoption of inflation targeting before the crisis is one of the main determinant of counter-cyclical monetary policy during the crisis. Indeed, inflation targeting is a proxy for central bank transparency and credibility. In a similar way, De Carvalho Filho (2011) considers a sample of 52 advanced and emerging economies during the global crisis. Using a panel data setting in which the real GDP is the dependent variable and controlling for macroeconomic variables correlated to GDP contractions<sup>1</sup> and to variables growth acceleration,<sup>2</sup> he finds that inflation targeters outperformed other countries both during the crisis and after. Relative to not-inflation targeting economies, he finds that inflation targeters cut nominal and real interest rates more sharply.

Considering the flexibility of the exchange rate as a smoother adjustment mechanism of output to real domestic and external shocks, the recent literature tends to show the advantages of floating exchange rates to respond to the financial crisis. On the one hand, emerging countries with fixed exchange rate regimes experienced weaker decreases in their interest rates relative to floaters (IMF, 2010). On the other hand, countries with more flexible exchange rates exhibited a slighter decline in output and experienced a faster recovery (Berkmen et al., 2012; IMF, 2010). These studies stress the advantages of faster adjustment in relative prices allowed with flexible exchange rates. Adler and Tovar (2012) offer a larger perspective by considering a sample of 40 emerging countries over the period 1990–2010. They focus their analysis on the “pure effect” of external financial shocks<sup>3</sup> on output performance.<sup>4</sup> Using a cross-sectional econometric approach, they show that flexible exchange rate regimes smooth international financial shocks, especially for a high degree of international financial integration. Tsangarides (2012) provides the most comprehensive analysis of the role of the exchange rate regimes during the global financial crisis. Considering a sample of 50 emerging countries, he addresses two main issues. First, do the exchange rate regimes explain output behavior during the crisis? Second, do the exchange rate regimes exert an influence on the speed of recovery? To investigate these questions, Tsangarides (2012) implements cross-country growth regressions identifying the conditional link<sup>5</sup> between growth and the exchange rate regimes. He finds, on the

one hand, that pegged regimes fare no better, yet no worse, than countries with floating exchange rate regimes, and, on the other hand, that peggers recover slower than floaters.

Since the Asian crisis of 1997–1998, many developing and emerging countries have considerably increased their foreign exchange holdings. Reserve accumulation responds to a self-insurance motive insofar as reserves may strengthen the ability to resist disturbances resulting from the recurrent capital flow instability. Analyzing the experience of a sample of emerging countries over the period 1970–2010, Aizenman and Hutchison (2012) find that the positive correlation between output volatility and the degree of financial openness does not hold in countries with high levels of international reserves. Using different measures of output performances during the financial crisis and different reserves coverage ratios, Llaudes et al. (2010) and Berkmen et al. (2012) find that the relationship between international reserves holding and reduced vulnerability is nonlinear. More precisely, if Berkmen et al. (2012) shows that countries with higher international reserves<sup>6</sup> experienced smaller growth revisions, the relationship is statistically insignificant. Llaudes et al. (2010) confirm that higher international reserves<sup>7</sup> can help to buffer the impact of the financial crisis, but international reserves holding exhibit diminishing returns.

As stressed above, all the countries do not conduct countercyclical monetary policies to respond to crises. From this perspective, an extensive literature suggests that a currency mismatch may prevent the adoption of expansionary monetary policy to face international financial shocks. Focusing on the experience of Latin American countries during the financial crises of 1997–1998, Cavallo and Izquierdo (2009) show that more liability dollarization triggers a fear of floating and then constrains the ability of monetary policy to respond to external shocks. Indeed, the fear of floating implies that policy makers are reluctant to let the nominal exchange rates depreciate after negative shocks. Izquierdo and Talvi (2009) suggest that the de-dollarization process experienced since 2000 in Latin American countries explains the difference in the policy reaction during the global financial crisis with the one enacted in the aftermath of the Russian crisis of 1998. In the former Latin American currencies have depreciated and policy interest rates have decreased; in the latter, pegged exchange rates have limited the magnitude of depreciation and interest rates have been dramatically increased. Using VAR models, Josifidis et al. (2013) analyze adjustment mechanisms and exchange rate regimes during the global financial crisis by focusing their attention on transition countries that acceded to the European Union in 2004, but remained outside the euro area. They find that a currency mismatch explains the lags in the responses of the monetary policy to the financial crisis. Hausmann and Panizza (2010) use a Taylor-type monetary policy rule in a panel data setting to assess the influence of a currency mismatch on the adoption of counter-cyclical monetary policy. They show that the decline in the currency mismatch favors the conduct of counter-cyclical monetary policy.

This paper extends the previous literature by analyzing monetary policy responses to common financial shocks over the period 1995–2010 for a sample of 10 emerging European countries. Two main motives lead us to focus on these countries. Firstly, relative to other emerging economies, emerging Europe experienced the largest output drops during the global financial crisis. Secondly, while many emerging countries have reduced their level of liability dollarization since 2000, emerging Europe as a whole has increased its level of a currency mismatch. Our empirical methodology used structural Bayesian vector autoregressive (SBVAR) models over two crises periods (1995Q1–2001Q4 and 2002Q1–2010Q4). Our main findings are the following. First, common international financial shocks lead to different monetary

<sup>1</sup> Pre-crisis determinants include growth in private credit, short-term debt to GDP, reserves to short-term debt, reserves to GDP, total capital inflows, trade openness, current account balance, exchange rate flexibility, and current account restrictions.

<sup>2</sup> Post-crisis drivers refer to growth performance of trading partners and changes in terms of trade.

<sup>3</sup> The international financial shock is represented by deviations of the VIX from its trend. The effects of the shock on output are estimated after controlling for trade shocks (such as deterioration in terms of trade and a drop in external demand).

<sup>4</sup> Output performance captures the depth and duration of each crisis episode.

<sup>5</sup> Conditional link means that the relationship is controlled by taking into account the potential determinants of growth performance.

<sup>6</sup> The result is robust to different coverage ratios: (i) reserves as a share of GDP; (ii) reserves as a share of exports; and (iii) reserves as a share of short-term external debt.

<sup>7</sup> Llaudes et al. (2010) considers the ratio reserves over external requirements (sum of the short-term external debt (at residual maturity) and the current account deficit).

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