

Contents lists available at ScienceDirect

Journal of International Money and Finance

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



International financial shocks in emerging markets *



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ARTICLE INFO

Article history:
Available online 15 July 2015

JEL Classification: F34

F36 G21

Keywords: Emerging markets Financial crises International capital markets

ABSTRACT

The present paper investigates how an emerging market economy is affected when it suddenly faces a higher risk premium on international capital markets. We study this question empirically for five Latin American economies over the period 1994–2007 within a structural panel vector autoregression and analyze theoretically the transmission mechanism using a dynamic stochastic general equilibrium model (DSGE) of a small open economy. The financial shock is modeled by an unexpected increase in the risk premium of firms' foreign-currency debt. In response, the adverse shock is amplified by a feedback mechanism between currency depreciation, adverse balance sheet and risk premium effects. The theoretical model is used to study different monetary policy responses. We find that an exchange rate targeting rule that strikes a balance between exchange rate and inflation targeting allows the monetary authority to stabilize inflation and output more effectively than under a pure inflation targeting rule.

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^{*} We would like to thank Jean-Pierre Allegret, Anthony Birchwood, Patrice Borda, Jörg Breitung, Matthieu Charpe, Zeno Enders, Michael Evers, Michael Evers, Michael Levers, Michael Levers, Michael Evers, Michael Juillard, Alain Maurin, Gernot Müller, Alfredo Schclarek, Martín Uribe, Jürgen von Hagen, Tovonony Razafindrabe and Carlos Winograd for helpful comments. An earlier version of this paper circulated under the title "Matching International Financial Shocks in Emerging Markets". The views expressed herein are those of the authors and should not be attributed to the Bundesbank or the IMF, its Executive Board, or its management.

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1. Introduction

Over the last two decades a number of emerging market economies have experienced serious economic and financial crises. Some of these crises appear to have been triggered by financial turmoil on international capital markets. This is evidenced by the fact that the financial distress affected a broader range of emerging market economies at the same time. Fig. 1 shows the country risk premium of seven Latin American economies. Remarkably the country spreads appear to be highly correlated, particularly so during the region's major crisis periods of 1994–95, 1998 and 2001–02.

The turbulent times in the region seem to have gone by in more recent years. The country spreads have decreased significantly just as much as their implied volatility, resulting, as has been argued, from improvements in macroeconomic and prudential policies and a number of structural reforms (De Gregorio, 2013). As a consequence, the global financial crisis of 2008–09 that originated in the advanced economies had a rather moderate and temporary impact on Latin America (Batten and Szilagyi, 2011).

The observation that country risks have been adversely affected across borders motivates us to model the financial turmoil in these countries by an initially exogenous shock to country spreads. However, as can be seen in Fig. 1, the amplitude of the financial propagation varied significantly across countries, indicating that domestic factors are crucial in the transmission and amplification of the financial turbulence.

As has been pointed out by Calvo et al. (2006), the external shocks can be followed by a painful adjustment or become a minor recession. It appears that particular weaknesses such as currency mismatches on firms' and banks' balance sheets or excessive external borrowing have been at the center of many emerging market crises (Brei and Charpe, 2012; Calvo and Reinhart, 2002; Hausmann et al., 2001; Roubini and Setser, 2004). In countries where macroeconomic fundamentals have been solid, as in Chile, the financial amplification of the international shocks has been much less important (Calvo and Talvi, 2005).

The theoretical literature incorporates such amplification mechanisms through credit market frictions in the form of collateral constraints on borrowing or financing costs that depend on borrowers' balance sheets (Arellano and Mendoza, 2003; Bernanke and Gertler, 1989; Braggion et al., 2009; Céspedes et al., 2004; Christiano et al., 2004; Cook and Devereux, 2005; García-Cicco et al., 2010; Gertler et al., 2007; Kiyotaki and Moore, 1997; Mendoza, 2006, 2010; Uribe and Yue, 2006). In many of these models, an initial adverse shock sets in motion a circle of amplification between worsening financial conditions, financial deleveraging, decreases in (asset) prices and deterioration in borrowers' creditworthiness. Prominent examples of this include the debt-deflation mechanism on the interaction of unexpected drops in output prices and borrowers' balance sheets (Fisher, 1933), the financial accelerator mechanism on the interaction of agency costs, macroeconomic fluctuations and borrowers' balance sheets (Bernanke and Gertler, 1989), or the balance sheet mechanism associated with the interaction of liability dollarization and unexpected currency depreciation (Céspedes et al., 2004).²

Against these backdrops, we investigate in this paper the impact of external financial shocks on the emerging market economies of Latin America. Our contribution to the existing literature is twofold. On the one hand, we estimate the impact of adverse shocks to country risk premia on the real economy using a structural panel vector autoregression of GDP, investments, trade balance, domestic credits and country spreads. The results suggest that increases in country risk premia have been followed by persistent drops in investments, credits and GDP in these countries, while the trade balance

¹ Country risk is measured by the spread of JP Morgan's Emerging Markets Bond Index Plus (EMBI+) over 10-year US government bonds. The vertical text in Fig. 1 indicates the onset of the following crises: Mexico (MX), Thailand (TH), Russia (RU), Brazil (BR), Ecuador (EC), Argentina (AR) and United States (US). Dates are indicated, for example, 12/94 reads as December 1994.

² More recently, theoretical models also consider other types of financial shocks and transmission mechanisms, see among others Christiano et al. (2010); Gerali et al. (2010); Del Negro et al. (2011); Kollmann et al. (2011); Jermann and Quadrini (2012) and Gambacorta and Signoretti (2014).

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