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Balance sheet effects, foreign reserves and public policies [☆]



Gong Cheng ^{*}

European Stability Mechanism, 6a, Circuit de la Foire Internationale, L-1347 Luxembourg

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ABSTRACT

This paper shows that countries can use foreign reserves to enhance their domestic economies' resilience to potential risks from balance sheet effects. Based on a theoretical model, this paper demonstrates that the government can either deploy its foreign reserves to lend in foreign currency to the private sector or increase fiscal spending on domestic goods. Both these policy tools can remedy the bad equilibrium characterized by large-scale domestic currency depreciation and very low aggregate investment, but they differ in how they stabilize the domestic economy and require different minimum amounts of foreign reserves. Targeted lending works by altering investors' expectations of the domestic exchange rate and of firms' net worth. As long as foreign reserves are sufficient to cover the private sector's external debt, this approach eliminates the bad equilibrium without an actual depletion of reserves. In contrast, fiscal spending increases the demand for domestic goods and affects the relative price, leading to domestic exchange rate appreciation that subsequently increases firms' net worth and facilitates investment.

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1. Introduction

Global economic turmoil, which started with a local crisis in 2007 in the United States, quickly became a widespread global financial crisis (GFC) of a magnitude never seen since the Great Depression. One impressive phenomenon in this crisis is that emerging market economies (EMEs), which had seemed

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^{*} Tel.: +352621187208.

E-mail address: g.cheng@esm.europa.eu

most vulnerable during the last waves of financial crises in the 1990s, fared much better than advanced economies.

First, EMEs on average performed better during the crisis in terms of output growth. Moreover, as Fig. A1 illustrates, some EMEs, such as Argentina, Indonesia and Thailand,¹ which had experienced large currency depreciation in previous crisis periods, demonstrated remarkable exchange rate stability during the GFC. The recent literature on the GFC and its impact on EMEs² has largely documented these features. Against this background, one can observe that EMEs accumulated massive foreign reserve assets between the early 2000s and the onset of the GFC. Moreover, they seem to have slowly '[graduated] from fiscal procyclicality' (Frankel et al., 2013) and adopted bold fiscal policy measures during the crisis period. According to Obstfeld (2014), it seems that these fast-growing economies used the tranquil time after the emerging market crises of the 1990s to reform their policy framework, making them more resilient to external shocks of the 21st century.

Based on these observations, my work provides a stylized theoretical framework to understand the channels through which EMEs better protected themselves against the GFC. The mechanism of the model is based on the third-generation crisis model à la Krugman (1999). Namely, due to financial imperfections and currency mismatches in the private sector, an (expected) local currency depreciation would exacerbate debt service difficulties, wreck the balance sheets of domestic banks and firms, and magnify economic downturns.

There is in fact an extensive literature on third-generation crisis models and the policy solutions needed. In the aftermath of the Asian financial crisis, Krugman (1999) was among the pioneers to identify the feedback loop from financial imperfections to debt service difficulties and exchange rate problems. He extends the framework of Bernanke and Gertler (1989)³ to an open economy setting, combining domestic credit constraints with exposure to foreign-currency liabilities. Although very simple, the model generates multiple equilibria and provides sufficient insight into how exchange rate depreciation would trigger balance sheet effects. Aghion et al. (2000), Aghion et al. (2004) and Céspedes (2004) extend Krugman's framework to a dynamic open economy setting with a micro-foundation. Among policy solutions to alleviate balance sheet effects, the existing papers focus on the choice of exchange rate regimes (e.g. Céspedes et al., 2004), optimal monetary policy (e.g. Aghion et al., 2000, 2001), or both (e.g. Chang and Velasco, 2001; Céspedes et al., 2002).

However, not much attention has been paid to the role of foreign reserves and fiscal policy in dealing with balance sheet effects. This is to some extent understandable, as EMEs did not have a large stock of foreign reserves or enough fiscal space to deal with external shocks back in the early 2000s. To my knowledge, only Céspedes et al. (2012) have provided a recent theoretical framework examining the role of foreign reserves in an economy facing strong depreciation pressures and constrained access to external financing. They argue that 'a 'threat' to intervene in the foreign exchange market to prevent exchange rate depreciation can prevent self fulfilling pessimism.' Notwithstanding its originality, the analysis on foreign reserves is only at the margin in Céspedes et al. (2012) and the authors do not distinguish the different ways to use reserves. My paper aims to fill the gap in the literature and to show how holding international reserves can eliminate the bad equilibrium, associated with negative expectations for a country's (real) exchange rate. This is a relevant question in the context of the GFC, as a gloomy world economic outlook may trigger investors to adjust downward their expectations of a country's exchange rate, especially when this country has a large export sector and is more likely to be affected by the 'global trade collapse' (Baldwin, 2009). A negative perspective on a country's currency would then increase entrepreneurs' foreign debt service costs, lower their net worth or even make them temporarily insolvent. I argue in this paper that the government can use foreign reserves to restore lenders' confidence in the country's currency. There are, however, several ways in

¹ As for Korea, although still very volatile, the exchange rate depreciated less during the GFC than during the Asian financial crisis.

² For a detailed review, please refer to Crowe et al. (2009), Eichengreen (2010), Llaudes et al. (2010), Didier et al. (2012), Gourinchas and Obstfeld (2012), Ceballos et al. (2013), Catao and Milesi-Ferretti (2014), Obstfeld (2014) and Bussière et al. (2015).

³ It is worth noting that there are also recent papers that look at feedback loops involving asset prices and borrowing capacity of financially constrained agents in a closed economy, e.g. Philippon and Schnabl (2013).

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