

Abstract of Essays on Emerging Market Business Cycles

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In recent years, financial crises originating in emerging market economies (hereafter, EMEs) have shaken the global economy; financial crises were observed in Latin America in 1982, in Mexico from 1994 to 1995, in the Asian financial crisis countries from 1997 to 1998, in Russia in 1998, in Brazil from 1998 to 1999 and from 2001 to 2002, in Turkey from 2001 to 2002, and in Argentina from 2001 to 2002. Such crises in EMEs have occurred since the 1980s when EMEs dramatically increased international capital transactions following international financial integration policy. Generally, financial liberalization enables free capital transactions across borders and brings various benefits to EMEs. For example, countries with little domestic capital can achieve high economic growth by financing domestic investment from abroad. In addition, foreign capital transactions can also stabilize the economy by smoothing out consumption fluctuations caused by country-specific shocks. However, financial liberalization also has the adverse effect of making countries more vulnerable to external shocks.

Learning from past crises, EMEs and international economic institutions, such as the International Monetary Fund (IMF), the World Bank, and the Bank for International Settlements (BIS), have taken many steps to reduce their vulnerability to crises since the onset of financial crises. However, there are growing concerns about economic and financial crises in EMEs. The recent concern is the possibility of a debt crisis in EMEs due to the end of the low-interest rate policy in the U.S. since the global financial crisis and the fiscal deficits in EMEs accumulated during the COVID-19 pandemic. Natural but crucial questions are: Why does the EMEs' debt crisis occur, even if the EMEs have implemented policies to mitigate the vulnerability to external crises? What is the potential cost of financial integration to the EMEs?

As the first step to answering these questions, this dissertation analyzes financial integration in EMEs and the effects on business cycles in EMEs. Specifically, we focus on how financial integration changes the impact of the world real interest rate shock, one of the most influential global shocks, on the EMEs' business cycles.

Structure of Dissertation

Chapter 1. Introduction

After introducing our motivation, we review the related literature discussing the effect of FI on EMEs. First, we note the definition of FI. Then, we review the previous studies analyzing the impact of the FI on the economic stability of EMEs.

Chapter 2. Revisiting the source of emerging market business cycles: on empirical investigation

This dissertation first focuses on the EME business cycle. In Chapter 2, we re-estimate García-Cicco et al. (2010) (hereafter, GPU), a representative model of the EME business cycle; GPU does not identify the world real interest rate (WRI) shock and the country-specific risk premium shock. In the first half of Chapter 2, we re-estimate the model using data from the U.S. real interest rates as an approximation of the WRI. The results show that the WRI shock mainly explains investment and trade balance, while in the GPU model, the country-specific shock explains.

Furthermore, we find that the Kalman smoother of the preference shocks obtained from the estimation correlates with the U.S. real interest rate since 1975. In the second half of Chapter 2, we discuss our hypothesis of what this correlation implies. By construction, the preference shock can be referred to as a shock to the Euler equation residual. Then, a positive correlation between the U.S. real interest rate and the smoothed preference shock suggests the possibility that the Euler equation residual becomes correlated with the U.S. real interest rate after 1975. We consider that the Euler equation error can be the Lagrange multiplier associated with a model subject to borrowing constraints. If the Lagrange multiplier has become correlated with the U.S. real interest rate after 1975, it is consistent with our observation of a correlation between the smoothed preference shock and the U.S. real interest rate after 1975. In Chapter 3, we introduce the Interest Coverage Ratio (ICR)-based borrowing constraint that can be consistent with our observation.

Chapter 3. ICR-based borrowing constraint

Chapter 3 describes the basic model used in Chapters 4 and 5. The model can illustrate the ECV in EMEs and be consistent with our hypothesis described in Chapter 2. The key feature of the model is an occasionally binding borrowing constraint depending on the interest coverage ratio (ICR) by Yamada (2023). In this ICR-based borrowing

constraint, the WRI has a larger effect on the foreign debt ceiling than the standard flow collateral constraint (e.g., Bianchi, 2011; Cuba-Borda et al., 2019). In this chapter, we compare the models with the ICR-based borrowing constraint and the standard borrowing constraint that addresses the equilibrium characteristics of the two models. The ICR model explains the mechanism of how the EMEs suffer the ECV.

The mechanism proposed by the ICR model is as follows. During the low-WRI period, the ICR borrowing constraint does not bind; consumption-smoothing is possible, and foreign debt becomes larger. Once the WRI rises, the borrowing constraint binds, and the household must repay a large amount of foreign debt in the low-WRI period. Therefore, the household must reduce consumption sharply, resulting in high consumption volatility and the ECV.

Chapter 4. Financial integration and excess consumption volatility in emerging market economies

Chapters 4 and 5 are the extensions of the basic model in Chapter 3. In Chapter 4, we approach the ECV puzzle described in Section 1.2. We provide the mechanism that a deep FI increases the degree of ECV by solving the model investigated in Chapter 3 with various degrees of FI.

Surprisingly, we show that the ECV in EMEs is associated with the negative skewness of consumption. The ECV is high in the country with significant negative skewness of consumption but not real GDP. Our finding indicates the importance of examining higher-order moments, as shown by the extensive literature pointing out the business cycle asymmetry (Neftci, 1984; Hamilton, 1989; Sichel, 1993; Van Nieuwerburgh and Veldkamp, 2006; Morley and Piger, 2012; Jensen et al., 2017).

Our calibrated model successfully illustrates how the FI worsens the ECV; a deeper FI increases the average foreign debt, implying harder repayments in binding borrowing constraints. When the WRI rises and the borrowing constraint binds, the household must reduce consumption for repayments. This decline in consumption is more severe as the FI deepens. Thus, as FI deepens, the ECV and the negative consumption skewness become larger.

Chapter 5. Financial integration and emerging market crises

Chapter 5 considers the effect of market externality on the EMEs and illustrates how sudden stops of international capital inflows happen in EMEs. We extend the basic model to allow for the tradable and nontradable goods sectors and introduce the relative price of nontradable goods. We analyze how the FI affects the sudden stop by solving the model with various degrees of FI. In addition, we conduct a welfare analysis and show the opportunity of welfare improving policy interventions under different degrees of FI.

Our calibration exercises show that a deeper degree of the FI, represented by a looser borrowing constraint, reduces the probability of sudden stops. Meanwhile, the impact of sudden stops on the SOE becomes more severe. The FI makes a sudden stop less likely to occur, but once a crisis occurs, there would be a significant decline in consumption and welfare.

We also show an overborrowing problem behind rare but severe crises in high FI-level economies, especially during low WRI periods. Our model incorporates the market externality; private agents do not internalize the price effects on the tightness of the borrowing constraint. Consequently, the private agent borrows more than the first best allocation. In our calibration results, the overborrowing occurs in the states with a low probability of binding borrowing constraints due to the low WRIs. Once the borrowing constraint binds, consumption decreases greatly for repayment. The probability of the binding borrowing constraint and sudden stops is remarkably high in the high-WRI periods.

Moreover, our results infer that the welfare gain of internalizing the pecuniary externality increases in the FI because the impact of sudden stops is larger in the high-FI countries having large foreign debts. In addition, policies preventing overborrowing, for example, Tobin taxes on capital inflows, would be particularly effective under the low-WRI periods with active overborrowing. Under the high-WRI periods with the high risk of sudden stops, it is effective for reducing the probability of sudden stops by not only controlling capital flows with capital tax but also inducing low (high) supply or demand of nontradable (tradable) goods with fiscal policies.