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Follow the (shadow) money: Shadow banking and systemic risk in China, South Korea, and the United States

Topic and Research Question

In the years that have passed since the Global Financial Crisis (GFC) of 2007/08, scholars have increasingly engaged in the study of shadow banking markets, which were identified as the epicenter of the crisis. As a response to the crisis, the newly founded Financial Stability Board (FSB) was tasked with monitoring the international shadow banking sector and its future development as well as promoting supervision and enhanced international financial regulation.

The International Monetary Fund (IMF) has identified Emerging Markets and Developing Economies (EMDEs) as central in the growth of risks associated with shadow banking, singling out China as main contributor (IMF 2018:69). In addition, the issue of (a lack of) global dollar funding – and therefore, by the global nature of the world's current financial system, Foreign Exchange (FX) swap, Eurodollar and repo markets – has exposed vulnerabilities in several Asian funding markets (Pozsar and Sweeney 2020:2). Based on recent developments in shadow banking, especially with regard to the importance of emerging markets, the aim of this thesis is to trace the development of the sector's influence on systemic risk in East Asia, with a focus on real estate in emerging market and developing economies (EMDEs).

For this reason, the research interest is formulated as follows: *"What are the similarities and differences in the development of shadow banking in the real estate sectors of China, South Korea and the United States since the Global Financial Crisis in 2007/8 and their implications for systemic risk?"*

State of the Art

Several scholars have given a broader overview of the general structure of the shadow banking system - as shadow banking constituted a rather new topic, these focused almost exclusively on the US financial system (Adrian and Ashcraft 2012, Pozsar 2014, Pozsar et al. 2010). Similarly, the research on shadow money focused on the US repo markets as well (Gabor and Vestergaard 2016, Sunderam 2015). However, the scholarly interest in shadow credit intermediation in Emerging Markets and Developing Economies (EMDEs) grew increasingly in the last decade, as exemplified by the works of Borst (2014), Ghosh et al. (2012), and Hahm et al. (2012).

Tsai (2015), Yao and Hu (2015), Lai and Van Order (2019), and Gabrieli et al. (2018) made contributions to the research on the size, origin, buildup of leverage, and various risk implications of shadow banking to real estate volatility in China. Similar studies with a focus on the Korean country case were carried out by Jin and Kim (2017), Kim and Song (2018), Shyn (2019), and Al-Yahyaee et al. (2020).

While there are some cross-country studies that center on the (East) Asian region and include both China and Korea (Cumming et al. 2018, Yao and Hu 2015), the vast majority of the literature either focusses on China or India for more in-depth case analyses. While there are contributions to the literature on the recent status and potential risks of Korean shadow banking (Kim 2018), high-level mapping exercises similar to the Chinese (CBIRC 2020, Ehlers et al. 2018) or US case (Pozsar 2014, Pozsar et al. 2010) have not yet been facilitated.

Methodology and Approach

Past research has created a variety of different approaches that can be employed to measure fragility in financial assets respectively to identify systemic risks to the entire financial system. The literature has identified three main concepts of measuring the size of shadow banking, them being 1) the flow of funds measure (also known as Financial Accounts of the United States), 2) the FSB measure (narrow and broad), and 3) the size of non-core liabilities (IMF 2014:68-72). However, there are substantial shortcomings to these approaches, which in turn could lead to a distorted picture of the degree of systemic risk present in the respective financial system(s).

Category: Repo market	
Size of repo market in USD	
Major type of trade	Bilateral
	Tri-party
Types of repo markets and participants	Country-specific types of repo markets
	Major participants
Infrastructure	Trade platform
	Central Clearing Counterparty (CCP)
	Settlement system
Type of repo contracts	

Figure 1: Excerpt of analytical framework

Therefore, it was decided to employ an eclectic framework in order to measure the development of the shadow banking sector in the specified countries as well as possible indicators for systemic risks that (some parts of) shadow banking poses. To this end, the chosen framework puts special emphasis on the funding side of shadow banking in the form of repos (see Figure 1) because they are debt relationships that are organized via tradeable, highly liquid securities. This is insofar important as the GFC also had its roots in these markets, especially the repo markets.

Main Facts

Shadow banking growth in China increased tremendously within most of the chosen timeframe but started leveling off since 2017, while Korea's NFBI sector saw moderate but steady growth that is still continuing as of writing. The United States were able to reduce shadow banking in their jurisdiction considerably since the GFC, although deregulation in recent years has allowed NBFIs (mostly of the EF1 category) to start growing again.

With respect to the factor of recent innovations, there is one dominating trend that can be found in the fintech industries of China, Korea, and the United States: This development involves a handful of tech or e-commerce giants that are working on spreading their service offerings over various sector, ranging from inter alia finance to e-commerce, insurance, wealth management, and student loans.

Repo markets have become the most important source of funding for shadow banking in all three countries. The importance of repo is also underscored by it being utilized as a means for monetary policy by the PBoC, BOK, and Fed. Some differences can be attributed to the differing stage of maturity of the respective financial systems, best exemplified in the type of repo contract (pledged vs. outright/classic). However, there are also two (semi-)blind spots with *dai chi* market in China and the bilateral repo market in the US.

Results

Results of the research show that although China, South Korea, and the US are all on a differing level of financial maturity, there are over-arching principles in how shadow banking entities behave that are valid in all three country cases respectively degree of maturity:

Shadow banks will occupy market segments that banks are retreating from – either because they do not underlie the same regulatory principles or banks view the segments as too risky or not profitable enough.

Regular banks are often involved in shadow banking activities – either through supplying credit lines for the warehousing of loans, or the direct cooperation through off-balance sheet vehicles like WMPs or SIVs.

The government has a very large footprint within the respective real estate sectors, first and foremost in the pooling and subsequent selling of mortgage backed securities (MBS).

The results of the present thesis have brought several data gaps to light as well as pointed to some possible options future research could embark on. More reliable data is needed in several aspects of Korean shadow banking, especially with respect to the number of NBFIs that originate MBS via the KHFC as well as the factor that shadow banks play in the rapid growth of Korean household and consumer debt. Furthermore, more quantitative studies are needed for both the *dai chi* market in China and the bilateral repo market in the United States.

Figure 2: Profile of country-specific shadow banking sector

References

All references can be found in the full version of the MA thesis available at http://othes.univice.ac.at/.

About the Author

Benjamin holds a BA in Japanese Studies from the University of Vienna. His research interests lie in the fields of (unconventional) monetary policy and non-bank financial institutions.

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