# Neglected part of shadow banking in China ${ }^{\omega}$ 

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#### Abstract

Guaranteed off-balance sheet (consists of banker's acceptance, letter of credit and letter of guarantee), is an essential part of China's shadow banking, but neglected by current research because no data available. This paper fills the research gap, by investigate the mechanism behinds its cyclical behavior through a novel dataset. Different from developed economies, guaranteed OBS in China has long-run substitute relation with commercial loan. Therefore, any policy impacts on commercial loan growth will has a converse effect on guaranteed OBS growth indirectly. Furthermore, contrary to existing research about China's shadow banking, we find the Desirability lending policy conducted by People's Bank of China during 2011-2014 is the unique fundamental driving force, rather than traditional regulatory constraints, such as reserve requirement ratio and loan-to-deposit ratio. It's an example of macroprudential policy induces shadow banking activity. Moreover, guaranteed OBS growth is also influenced by macroeconomy, risk and return factors of itself, operation efficiency and creditworthiness of the bank. Hence empirical results of this paper could also be viewed as the first time to test OBS development theories with China's data.


## 1. Introduction

Considering the rapid development of China's shadow banking since 2010 and haunted by the severe crisis in the US financial system in 2008, more and more research concerning on China's shadow banking system. But the definition of shadow banking still debating, especially for China. Two most popular definitions are proposed by Financial Stability Board (2011) and Pozsar, Adrian, Ashcraft, and Boesky (2012) separately. Due to China's shadow banking is not quite the same as developed economies, ${ }^{1}$ the definition used in this paper follows the People's Bank of China (PBC, 2013), which defines it as "credit intermediation involving entities and activities outside the regular banking system, with the functions of liquidity and credit transformation, which could potentially cause systemic risks or regulatory arbitrage."

Existing research about China's shadow banking, such as the literature discussed in next section, mainly focus on wealth management products (WMPs), trust loan and entrusted loan. While the "undiscounted bankers' acceptance" (BA), an important component of China's shadow banking was neglected due to data unavailable. It deserves seriously research for two main reasons:

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Fig. 1. Monthly average share of main components of AFRE.
Source: Wind Database.

On one hand, it accounts for a large share in China's shadow banking system. Fig. 1 displays monthly average share of main components of Aggregate Financing to the Real Economy ${ }^{2}$ in pre-crisis (2002-2008) and post-crisis (2009-2015) periods. Focus on shadow banking part, we find the share of entrusted loan increased from $4.78 \%$ to $10.50 \%$, the share of undiscounted bankers' acceptance increased from $3.30 \%$ to $4.34 \%$, but the share of trust loan moderately decreased from $3.45 \%$ to $3.34 \%$. Furthermore, besides BA, letter of credit (L/C) and letter of guarantee (L/G) are both have similar properties and should be viewed as shadow banking follows PBC's definition. Actually, China Banking Regulatory Commission (CBRC) defines BA, L/C and L/G as "guaranteed off-balance sheet" (guaranteed OBS) follows international standard. If we count in all these activities, China's shadow banking scale will get even larger.

On the other hand, these businesses may bring pressure on financial sector directly. The fundamental feature of guaranteed OBS is substitute corporation credit with bank credit, thus it links corporation risk with bank risk tighter. IMF (2016) figured out that Chinese corporation's bad financial performance originates from growth rate and investment efficiency slowing down, will bring a great pressure to financial institution's asset quality. It implies if guaranteed OBS scale grows too fast, then risk originates from real economy sector will transfer to financial sector more rapidly.

This paper attempts to fill the research gap. First of all, we present a remarkable cyclical behavior of guaranteed OBS: it grew stably from 2008 to 2010, but experienced supernormal fast growth during 2011-2014, then dropped sharply since 2015. After that, we investigate the mechanism behinds this cyclical behavior through a dataset we constructed, and get three main empirical conclusions.

The first one is Chinese commercial bank's guaranteed OBS business has a stable long-run substitute relation with commercial loan business. Any policy impacts on commercial loan growth will generates a converse effect on guaranteed OBS growth indirectly. This is the core mechanism behinds the supernormal growth of guaranteed OBS during 2011-2014. There is debating for a long time on whether the relation between guaranteed OBS and commercial loan is substitution or complementation. As we discuss in Section 2, substitute relation more likely exists in emerging market economies while complement relation is more likely exists in developed economies. But there is no such research about China before this paper.

The second one is, contrary to existing research about China's shadow banking, Desirability Lending Policy (DLP), introduced by PBC to control commercial loan growth during 2011-2014 is the unique fundamental driving force; rather than traditional constraints, such as "capital adequacy ratio", "reserve requirement ratio" or "loan-to-deposit ratio", which were blamed for main reasons of shadow banking growth in China (Elliott, Kroeber, \& Qiao, 2015; Jiang, 2016; Lu, Guo, Kao, \& Fung, 2015). Actually, this is the first time to investigate DLP's effect on shadow banking. We illustrate the mechanism as follows: because DLP imposes an implicit lending quota on commercial banks, both "reserve requirement ratio" and "loan-to-deposit ratio" will lose effect after DLP introduced. In addition, "capital adequacy ratio" will not change largely and frequently, therefore DLP would be the unique constraint that commercial banks faced, as Proposition 1 documents in section 4. Hence commercial banks had great incentive to avoid it, through guaranteed OBS, commercial banks can finance their customers and don't violate supervision. Therefore, when DLP is binding, it stimulates supernormal growth of guaranteed OBS indirectly; while has no effect in the period before policy introduced and the period of policy ameliorated.

The third one is guaranteed OBS growth is also influenced by macroeconomy, risk and return factors of itself, operation efficiency and creditworthiness of the bank. We can use these conclusions to judge which OBS development theory holds in China, since there's no research on this topic yet. According to these conclusions, "regulation avoidance theory" and "market power theory" are supported by China's data, while "moral hazard theory" and "scale economy theory" are not.

Policy implication is, though DLP controlled commercial loan growth effectively during the economy overheat period, the supernormal growth of guaranteed OBS partly offset its effect, if not totally cancelled it. There have already been many discussions on macroprudential tools may induce shadow banking activity, in this paper we give another example. Therefore, it's the right time to review this kind of macroprudential tool and to substitute another more market oriented tool for it, such as Macroprudential Assessment (MPA) introduced by PBC at the beginning of 2016.

The reminder of the paper is structured as follows: Section 2 reviews related literature. Section 3 presents cyclical behavior of

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    ${ }^{1}$ There are many documentations about the differences, please refer to Li (2014), Elliott et al. (2015), Dang et al. (2015) and Jiang (2016).

[^1]:    2 "Aggregate Financing to the Real Economy" is the authority name of a core monetary policy indicator published by People's Bank of China since 2011. It was also called other name in the literature, such as "Total Social Financing Statistics" or "Aggregate Financing of the Economy".

