SHADOW BANKING IN CHINA: BLESSING OR CURSE?

Insights from the Austrian School and Hyman Minsky

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ABSTRACT: This paper aims to analyze the features and impacts of shadow banking for China from the viewpoints of the Austrian School of Economics and Hyman Minsky's theories. These two economic approaches offer intertwined but distinct insights for the research of shadow banking from different perspectives: money creation, banking principles, interest rates, capital structure, efficiency of markets and effectiveness of government and central bank policies. Lastly, we evaluate the implications of both approaches through a preliminary empirical assessment of the impact of China's shadow banking activities on the Shanghai stock market.

KEYWORDS: Austrian Cycle Theory, Hyman Minsky, Chinese shadow banking, 100-percent reserve banking, free-banking.

JEL CLASSIFICATION: E12, E14, E32, E42, E51, E58.

1. INTRODUCTION

Many explanations have pointed out "shadow banking" as the root of fragility of US subprime crisis in 2008 which later caused the Great Recession. Although China was inevitably affected by the global economic turndown, it didn't have a significant amount of shadow banking at that time. At the end of 2008, non-banking lending only represented 1/8th of credit in China (Elliott *et al*., 2015). However, since 2010, the shadow banking sector has been growing very rapidly. Thus, it has expanded from 40% of GDP at the end of 2014 to 80% of GDP at the end of 2016, according to Moody's estimates. Although this number is not especially large as it is far below the United States or Canada (where shadow banking amounts to 150% and 250% of

GDP respectively), the growing size and risk of the Chinese shadow banking are legitimate cause for concern among the domestic financial authorities.[1]

In the following sections, we introduce the uniqueness of shadow banking in China. Later we analyze its monetary nature and economic impact. Then we draw some policy implications from the insights of two heterodox economics approaches: the Austrian School and Hyman Minsky's theories of financial instability and systemic crises. Finally, we conduct an empirical analysis with a special focus on China's stock market bubble and crash from November 2014 to June 2015 to examine which of these theories best illustrates the current scenario.

2. SHADOW BANKING IN CHINA AND ITS UNIQUENESS

Before our investigation, we shall adopt a definition of shadow banking. The word "shadow" usually has a pejorative connotation in the financial world which is not always justified. While the definition may vary from source to source, we emphasize the term "non-banking lending activities" (Hu, 2015)[2] as it covers the essential feature of the shadow banking system. Thus, Schwarcz (2013) defines shadow banking as the provision of financing outside of traditional banking channels. Likewise, the Financial Stability Board typifies shadow banking as credit intermediation involving entities and activities, fully or partially, outside the regular banking system. Finally, Pozsar *et al*. (2012) provide a more sophisticated description of shadow banks, defining them as financial intermediaries that conduct functions of banking without explicit access to central bank liquidity or public-sector credit guarantees.

One leading factor that makes the Chinese shadow banking system unique, is the extensive involvement of government regulation in the traditional banking system. The banking system in China is dominated by large state-owned banks which obey a great variety of regulations and formal and informal guidance (Elliot *et al*., 2015). This factor makes non-banking lending entities become, both in name and in fact, *shadowed* agencies that rely on traditional banks to perform many basic functions of credit intermediation. In contrast, US shadow banking system works in parallel to banks (Dang *et al*., 2015).

There are three major groups of shadow banking entities in China (Lasak, 2015): Banks with wealth management products (WMPs), non-bank financial firms such as trust companies, and small loan firms (also called «microfinance companies»).

WMPs are close substitute for bank deposits. They are offered by traditional banks as a way of transforming regular deposits into off-balance sheet loans.[3] Commercial banks do this to circumvent strong government regulatory constraints. The People's Bank of China (PBOC) put interest rate ceilings on bank deposits until the liberalization of interest rates in October 2015. Moreover, banks often ran into absolute caps on their lending volumes. Thus, they faced a 75% cap on their loan-to-deposit ratios until its removal in October of the same year. Finally, traditional banks are required to hold a substantial amount of reserves (near 20%) as deposits at the PBOC, earning far lower interest rates than they could receive on their normal activity. In this regard, WMPs can be described as "bank loans in disguise"[4] with higher interest rates that circumvent these financial regulations. A differentiating characteristic of these type of transactions, is that banks "*take a great bulk the risks and rewards, but pay non-banks to participate in order to avoid regulatory constraints and costs*." (Elliot *et al*., 2015.)

Trust companies cooperate with regular banks to provide loans to individual or corporate customers when banks reach the limit of its loan quota or «industry limitation». In some cases, regular banks are not allowed to lend money to certain industries due to government regulatory constraints.[5] In this context, they can play a pure intermediating function for bridging credit between those industries and trust companies. Regular banks are responsible for the collection of principal and interests, but do not bear any credit risk. Trust companies can buy loans from banks and package them as "entrusted loans"[6] transferring the beneficiary rights back to banks as interbank assets.

Small loan companies are regulated financial firms that are allowed to lend money in small amounts to small borrowers, such as small and medium-sized private firms (SMEs) or rural borrowers, at higher interest rates and lower collateral requirements than commercial banks. The emergence of small loan companies is mainly because state-owned enterprises (SOEs) are

dominating the base of the Chinese economy. SOEs are endowed with privileges and implicit government guarantees. Therefore, it stands to reason that banks favor SOEs and fail to serve to less privileged SMEs in their lending activities. Also, SMEs and rural borrowers often lack high-quality collaterals nor long-term credit histories that are accessible to banks. Trust funds and small loan companies fill this gap by charging higher interest rates and with more scrutiny to counter increased credit risks (Lasak, 2015). Recently, a new form of small loan companies —e-finance companies, including leading e-commerce giants such as Alibaba and Tencent— have started to provide loans to those customers at a rapid growth rate.

To summarize so far, the scale of China's shadow banking is relatively small in comparison with other major economies. However, it grows at a very fast rate. This growth is the result of significant government intervention and regulation on interest rates, reserve requirements and lending restrictions to some industries. Shadow banks are not subject to interest rate ceilings, loan quotas, and avoid PBOC reserve requirements (Elliot *et al*., 2015). Furthermore, they play the role of providing loans to those small and medium-sized private firms who are not able to get formal financing from conventional banks and capital markets.[7] Therefore, if the banking system is subject to strict regulatory and control policies, shadow banking can be characterized as a parallel system that is driven by market forces.

The next section examines the monetary nature and the potential economic consequences of shadow banking in China from the perspectives of the Austrian School of Economics and Hyman Minsky's financial theory. Afterwards, we present a preliminary empirical study and conclude with some economic policy implications.

3. WHAT WOULD AUSTRIAN AUTHORS AND MINSKY SAY ABOUT SHADOW BANKING IN CHINA?

3.1. Does Shadow Banking Create New Money?

A big question to start with is to determine if shadow banking creates new money. To answer this question, we first need to trace the origin of money and illustrate its current types.

3.1.1. The Origin and Nature of Money

The early debate about the origin and nature of money started between metallists and chartalists (also cartalists or anti-metallists) during the 16th and 17th centuries.

Metallists claim that money derives its value from the purchasing power of the commodity (metal) upon which it is based. This commodity must have a high degree of "saleability" (i.e. market liquidity). Carl Menger (1871), the founder of the Austrian School, endorses metallism. He notes that money is not the product of a legislative act, but emerged spontaneously in the private sector to overcome the problems of "double coincidence of wants" in a barter economy.

For metallists, the monetary role of the state is to authenticate the quality and quantity of metal used in official coin minting. The state must preserve or increase the saleability of this metal. Ludwig von Mises, the emblematic figure of the Austrian School, inherited the metallist view on the nature of money as he argued in his 1912 book *The Theory of Money and Credit*:

> "*Before an economic good begins to function as money it must already possess exchange value based on some other cause than its monetary function*." (Mises, [1912] 1953, p. 111.)

Starting from this idea, he developed the "regression theorem" of the value of money:

> "*If we trace the purchasing power of money back step by step, we finally arrive at the point at which the service of the good concerned as a medium of exchange begins. At this point, yesterday's exchange value is exclusively determined by the nonmonetary —industrial— demand which is displayed only by those who want to use this good for other employments than that of a medium of exchange*." (Mises, [1949] 1998, p. 406.)

By contrast, chartalists do not believe the value of money derives from the value of a metal such as gold. For them, money was created by the state as a common means of payment with which to settle the tax liabilities imposed on the population. Money, as they argue, is simply a unit of account rather than a medium of exchange. This view was criticized by Ludwig von Mises. He thought that the means of payment and unit-of-account functions "*can be deduced from the function of money as a common medium of exchange*." (Mises, [1912] 1953, p. 35.)

John M. Keynes agreed with the chartalist approach to money. Thus, in 1930 he wrote:

"*The age of chartalist or State money was reached when the State claimed the right to declare what thing should answer as money to the current money of account —when it claimed the right not only to enforce the dictionary but also to write the dictionary. Today all civilised money is, beyond the possibility of dispute, chartalist*." (Keynes, 1930, p. 4.)

It comes to no surprise that Minsky, often labelled as a post-Keynesian, favored a chartalist approach in his view of money and its use as a means of payment to settle state taxes:

"*In an economy where government debt is a major asset on the books of the deposit-issuing banks, the fact that taxes need to be paid gives value to the money of the economy… For fiat money to be generally acceptable and valuable there must be a set of payments units must make for which this money will do. Taxes are such payments, thus fiat money should not be introduced without introducing a government with taxes and expenditures.*" (Minsky, 1986, p. 231)

Perhaps the most interesting figure that links Austrians and Minsky is Joseph Schumpeter. He studied at the University of Vienna under the guidance of the Austrian-school economist Eugen von Böhm-Bawerk and was a classmate of Mises in Böhm-Bawerk's seminar. Later, he became the doctoral supervisor of Minsky. Schumpeter distinguished between "theoretical" and "practical" metallism (Schumpeter, [1954] 2006, p. 288). He categorized Menger's view that a commodity link is crucial to understanding the origins, nature and exchange value of money, as "theoretical metallism". Moreover, he defined "practical metallism" as the theory that although a sovereign state has the power to create non-backed currencies (i.e., money with no intrinsic or redeemable commodity value), it is more prudent to adopt a backed currency system. Schumpeter understands practical metallism as recognition of the principle that the monetary unit should be firmly linked to a certain amount of a specific commodity which should be freely exchangeable.[8] However, he considers that theoretical metallism is untenable. It is not true that money fundamentally and necessarily consists in, or must be backed by a commodity (or set of commodities) with an intrinsic value for other purposes. Schumpeter

states that theoretical metallism commits the error of confusing the historical origin of money (that is, some highly saleable commodities come to be used as a means of exchange) with its nature or logic, "*which is entirely independent of the commodity character of its material.*" (Schumpeter, [1954] 2006), p. 289.)

Hence, he reconciles both theories on the nature of money. Money originates from valuable commodities, and it is more prudent to adopt a commodity-backed currency system. However, the concrete commodity is not the only thing which can back up currencies.

3.1.2. Types of Money

Ludwig von Mises classifies money into three basic categories: commodity money, credit money and fiat money (Murphy, 2011). Commodity money is a common medium of exchange that has intrinsic value such as gold, silver... Credit money is a common medium of exchange which is a claim on a physical or legal person. This claim is not fully backed up by commodity money, consequently is not payable on demand. Finally, fiat money is common medium of exchange accepted because of a special legal designation provided by the authority. This type of money is not backed up by any commodity money.

Money		
Commodity Money	Credit Money	Fiat Money

Table 1. Mises's classification of money.

Mises's classification is based on his "metallist" view of money. The distinction between money and credit depends on its link to metallic commodities like gold or silver. For him, credit money is not real money, but fiduciary media that could originate the business cycle.

Instead of viewing money as commodities or claims on those commodities, Hyman Minsky views money as a claim on debt. It is not needed to have metallic money at first place to create new money. He views money as a two-sided balance sheet phenomenon. Money is created just

when one party is willing to go into debt, and another is willing to hold that debt and accept the promise to pay. This promise can be made by government, banks, firms and households. When households, firms or governments make a promise, they promise to pay by their bank deposits (see table 2). When commercial banks make a promise, they promise to pay by their reserves at central banks. Finally, when central banks make a promise, they used to pay by their gold reserve, but since the world economy abandoned the gold standard some decades ago, currently they simply pay by means of another reserve money with equal nominal value.

Minsky argues that, in view of the fact that at present government debt is a major asset on the balance sheet of banks, money created by banks is backed by state taxes. Therefore, it is the power of the state which gives value and acceptance to existing currencies.

Gold
Reserves
Bank deposits
Securities

Table 2. Minsky's hierarchy of money.

What we are concerning here is how shadow banking situates in this monetary division and whether shadow banking creates new money.

Under the current monetary system, all money has become fiat money in a pure metallic sense. But according to the hierarchical structure of money, there is still a hierarchy that is inside the fiat money system itself.

Remind that there are basically two types of lending activities that have been categorized as shadow banking in China. One operates internally in the traditional banking system; the other is carried out by financial firms sponsored by traditional banks. Both of them are off-balance sheet deposits and loans, which means they are not restrained by reserve requirements. Since financial firms do not have the authority to issue bank deposits, they extend the credit of banks and create a hierarchically lower category of money: securities (table 2). Therefore,

China's largest commercial banks play the role of "secondary central banks" that provide new liquidity to borrowers through shadow banking activities —including non-traditional deposit and lending activities within the conventional banking system— by merely expanding balance sheets, since their deposits act as a reliable promise of payment. Regular bank deposits become "secondary reserve" for shadow banks and these entities create securities as a new hierarchical category of money.

Consequently, we can conclude that shadow banking does create new money but only in the form of extending bank credit. The next section will analyze whether shadow banking in China can be categorized as a form of *free-banking* and, if so, what are the potential effects.

3.2. Shadow Banking as Free-Banking

3.2.1. Banking Principles: Scarcity or Elasticity?

The existence of credit money means that we are under a fractional-reserve banking system. It is assumed that this system encourages a more dynamic economy but at the risk of incurring in a greater volatility of the business cycle. Standard macroeconomics books point out that bank credit is a strongly procyclical variable which amplifies business cycle fluctuations.

The concern here is what kind of principle should the economy follow. Shall we adopt a tight-money principle which stresses the importance of scarcity or take an easy money position that stresses the importance of elasticity? The debate on this subject has a very long history that can be traced back to the dialogue between the Currency School and the Banking School during the 19th century in England. This debate resembles the contrast of ideas between the Austrians and Minsky in many respects.

The Currency School sustained that legal convertibility was not enough to prevent the over issue of banknotes. Money should behave like a purely metallic currency. Therefore, Currency School economists proposed a 100-percent gold reserve for every banknote issued by the Bank of England.

On the contrary, Banking School focuses more on overall credit, including commercial credits, rather than on money per se. The Banking School emphasizes on the endogeneity of money, which implies that economic conditions come first and money adjusts endogenously following from those. Money supply is driven by the demand for money, that is, by economic activity. Consequently, the Banking School endorses some forms of the laissez-faire principle on the issue of money.

Austrian economists split on this matter. Mises appreciates the purpose of the Currency School of limiting the issue of fiduciary media and creating a pure metallic money system:

> "*Of all the theories of the trade cycle, only one has achieved and retained the rank of a fully-developed economic doctrine. That is the theory advanced by the Currency School, the theory which traces the cause of changes in business conditions to the phenomenon of circulation credit*." (Mises, 2006, p. 101.)

Later, he emphasizes the idea that every advance toward explaining and removing business cycles is due to Currency School. Nevertheless, he criticizes this school for two fatal errors it made. These errors led the failure of Peel's Act (1844) which followed its principles:

> *"On one hand, the system of government interference with banking was preserved. On the other hand, limits were placed only on the issuance of banknotes not covered by specie. The fiduciary media were suppressed only in the shape of banknotes. They could thrive as deposit currency."* (Mises, [1949] 1998, p. 439.)

Mises argued that to fully implement the principles of the Currency School, banks should be obliged to maintain metallic backing for all notes equal to the total sum of both banknotes and bank deposits (Mises, 2006). Therefore, it seems clear that Mises endorsed the "scarcity principle" to achieve a «full-reserve banking system». Other prominent Austrian economists, like Rothbard (1962) and Huerta de Soto (2006) also agree on this.

A second branch of Austrian economists (Selgin, White, Horwitz, Dowd…) supports more the «free-banking principle» which fits more closely with the ideas of the Banking School.

Free-banking describes a market-based, decentralized approach to money. Selgin (1988) and Selgin and White (1994) define «free-banking» as a monetary arrangement where currency is competitively supplied by private banks and, consequently, not monopolized by a central bank. Under a free-banking system there are neither government control on the quantity of exchange media nor a state-sponsored central bank. Furthermore, there are no legal barriers to entry of new banks. Finally, there are no reserve requirements, government deposit guarantees, loan restrictions or interest rate ceilings.

Free-banking advocates claim that it would provide a safer and sounder banking system that current central bank systems (Dowd, 1994; Selgin, 1998). Under a free-banking scheme, money supply always varies in a way that accommodates money demand shocks and preserves monetary equilibrium.[9] Free-banking theorists argue that market forces can achieve a natural level of money (credit) supply without creating substantial business cycles. Moreover, they claim that credit is necessary for financing new entrepreneurial activities.

According to Salerno (2012), Mises advocated free-banking as the most suitable means for achieving the final goal of suppressing the issue of fiduciary media (in the form of banknotes and demand deposits) and attaining a 100-percent reserve system. Thus, in 1949 Mises wrote: "*Free banking is the only method available for the prevention of the dangers inherent in credit expansion.*" (Mises, [1949] 1998, p. 440.)

Likewise, Selgin (1988, p. 62) asserts that Mises believed that freedom of note issue under free banking would automatically lead to 100-percent reserve banking. Nevertheless, this same argument is also used by other Austrian economists to argue that Mises viewed the fractional-reserve free banking as a *second-best* (Huerta de Soto, 2006, p. 681) and favored a 100-percent gold reserve banking system (Ebeling, 2012, p. xxxii). In 1944 Mises wrote:

> "*The second step of the reform has to consist of the adoption of a rigid 100 percent reserve plan. Every further increase of bank deposits subject to check and of any kind of banknotes, paper money, and money certificates has to be prohibited unconditionally, if the total*

additional amount of such money and money substitutes is not entirely backed by an ad hoc deposit of gold with one of the Federal Reserve banks." (Mises, 1944, Vol.3, p. 105.)

To achieve this objective, he opposed any form of government intervention and regulation which conferred monopolistic powers to central banks. Moreover, he rejected credit expansion —i.e. credit extended beyond what could be supported by actual savings— beyond the limits imposed by the general principles of law.[10]

The debate within the Austrian School revolves around the question of which banking system —fractional-reserve banking or full-reserve reserve banking— is more stable.[11] As Garrison (1996) correctly states, there is a broad agreement among Austrian economists that a banking system characterized by central direction and fractional-reserve is not conducive to economic stability. However, there is some disagreement as to which of these features, central bank guidance (fractional-reserve free banking advocates[12]) or fractional-reserve (full-reserve banking theorists), is the main responsible for the instability.

How does Minsky's view fit into this debate? In 1982, Minsky made one of his most well-known statements:

"Capitalism is inherently flawed, being prone to booms, crises, and depressions. This instability, in my view, is due to characteristics the financial system must possess if it is to be consistent with full-blown capitalism. Such a financial system will be capable of both generating signals that induce an accelerating desire to invest and of financing that accelerating investment." (Minsky, [1982] 2016, p. 287.)

To put it more precisely, in his 1982 book Minsky is not referring capitalism itself but rather capitalism under a fractional-reserve banking system with credit money. He identifies the problem in a similar way as full-reserve banking advocates. It is the expansion of fiduciary media, due to artificial bank credit growth and financial innovation, what makes the economy fluctuate. However, Minsky's proposal is not to eliminate credit cycles as Mises and Rothbard propose, but rather to manage credit supply over the cycle with a certain degree of elasticity

as free-banking theorists suggest. Nevertheless, Minsky differs from Austrian free-bankers in the way to achieve this goal. Thus, while he relies on powerful governments and central banks, they propose the self-regulating mechanism of the market economy and oppose government intervention. Hence, the main differences between Minsky and the Fractional-Reserve Free-Banking branch of the Austrian School, lie in the assessment on the ability of market forces to reach a *natural* level of money supply and the role of government involvement.

Regarding shadow banking activities, they inevitably intertwine with banking principles and government policies. To assess whether shadow banking can be classified as free-banking in the sense of the branch of the Austrian School that conforms to the principles of the Banking School, we need to go deeper into the role of interest rates.

3.2.2. Natural Interest Rate: Yield of Capital or Expectation?

The interest rate is a key concept in banking theory. The Austrian School inherited the theory of the "natural rate of interest" formulated by Knut Wicksell in the 19th century. Wicksell (1898) distinguished between the natural (or normal) rate of interest and the money (or market) rate of interest. While the natural rate of interest can be defined as "the real yield of capital in production" without the mediation of the banking system[13], the money rate of interest is the interest on loans, which depends on credit policy rules and other monetary factors.

The money rate of interest and the natural rate of interest do not necessarily coincide, since it is possible for fractional-reserve banks to expand credit money. Bank credit expansion drives down the money rate of interest below the natural rate of interest. Thus, if the money rate falls lower than the natural rate, there will be an inflationary boom, whereas if the money rate rises above the natural rate, there will be a deflationary recession. However, ultimately the money rate of interest will sooner or later converge towards its natural level, so the problem is whether this process can be sustainable or not. This is the basis of the Austrian Business Cycle Theory (ABCT), developed some decades later by Ludwig von Mises and Friedrich A. von Hayek.

Minsky and his post-Keynesian fellows reject the concept of the natural rate of interest as the real yield of capital in production. For Keynesians, the normal rate of interest is linked to the "marginal efficiency of capital". Keynes argues that investors use the marginal efficiency of capital (MEC) —i.e. the rate of discount which makes the net present value (NPV) of future cash flows from an asset equal to zero— to rank investment projects. In the Keynesian theory, investment decisions are made by comparing the MEC to the interest rate. Thus, an investment project is accepted if the MEC is greater than the market interest rate.

Though this approach seems to be in line with the marginalist theory of investment, Keynes adds the idea that the marginal efficiency of capital is an inherently subjective judgment based on investor expectations about the size and timing of future cash flows (Pilkington, 2014). He argues that when investors are making such judgments, they are not involved in mathematical calculations based on risk assessments and the going interest rate, but are instead driven by "*a spontaneous urge to action rather than inaction…*" (Keynes, 1936, p. 161). Therefore, Keynes introduces the "animal spirits" to explain what drives investors' expectations and decisions.

Minsky endorses Keynes's theory that capital asset prices are determined not by a rational calculation of risk, but are instead subject to waves of optimism and pessimism. He agrees that "*businessmen, as they play the mixed game of skill and chance that is business, are inevitably speculators*" (Minsky, 1976, p. 86). Hence, the market rate of interest deviates from the normal rate of interest due to the animal spirits of both bankers and investors.

Keynes' and Minsky's theories of interest rates try to introduce confidence and uncertainty into the analysis of the normal rate of interest. However, what they overlook is the exogenous cause of confidence variability and uncertainty. Minsky understands bank credit expansion as an outcome of bankers' and investors' changing expectations, but he ignores that central bank policies and government intervention can have a huge impact on expectations and the degree of uncertainty in the economy.

Regarding China's shadow banking, exogenous policy factors are particularly dominating. As previously explained, the origin of shadow banking in China is mainly due to interest rate

regulation. The People's Bank of China put interest rate ceilings on bank deposits and loans, which kept the nominal interest rate way below what market would have required. On the one hand, banks could not compete on interest rates to attract new depositors. On the other hand, small and medium-sized private firms had no access to those loans even if they were willing to pay higher interest rates. The benchmark interest rate was way below its estimated natural level. In this scenario, shadow banking operated either in the form of deposits and loans "in disguise" in the regular banking system, or in the form of trust firms and small-loan companies emerged as a market correction in search of the estimated natural rate of interest.

Although the PBOC has liberalized interest rates since October 2015, shadow banking continues playing an important role in financial market due to several reasons that result from government involvement and policy. The first reason is the existence of state-owned enterprises (SOEs) and the privileges they enjoy. Since SOEs have implicit government guarantees, banks are more willing to lend them money. Government guarantees also have the impact of boosting the confidence of bankers and investors and lowering interest rates. Small and medium private firms have more difficulties in accessing financing from major banks, since the latter are risk-averse toward private firms and show a clear preference for SOEs.

The second reason that traditional banks are still facing is the so-called industry limitation. The government prohibits banks from lending money to some industries for certain periods of time due to public considerations. As a result, to circumvent these regulatory constraints, banks must cooperate with financial firms by lending through the latter to earn higher interest rates.

The ABCT states that loose monetary and credit policies distort the capital structure of the economy and cause malinvestment in those stages of the production process that are further away from final consumption (Garrison, 2001). In China, government intervention and PBOC expansionary policies artificially boost bankers' confidence, which is based on the expectation that state-owned firms are unlikely to default on their debt obligations. Banks are willing to lend them money at low interest rates and SOEs expand their businesses supported by cheap credit. However, the problem is whether the goods and services that they are producing really

meet the needs of the market, or firms are doomed to bankruptcy regardless of their state-owned nature. If the economic situation worsens and depositors rush to withdraw their funds, banks will no longer be able to provide cheap credit to state-owned enterprises, so they will have to bear higher, perhaps prohibitive, financial costs.

The last reason is a double-edged sword. Shadow banking help regular banks to circumvent loan quotas and interest rate ceilings through off-balance credit expansion, which inevitably increases the risks in the system. Nevertheless, it is important to make a distinction between shadow banking within the traditional banking system and shadow banks (trust companies and small loan firms). A priori, shadow banks should have much better scrutiny on the loans they make since they must bear the credit risk by themselves. Although they face less regulation, shadow banks have no access to subsidies and are not covered by the central bank's safety net. When the financial crisis hits, central banks can step in by monetizing the debt of commercial banks, but commercial banks have less incentive to bail out shadow banks. Therefore, shadow banks must face certain self-regulatory constraints, whereby the rate of interest they charge on loans tends to converge towards the estimated natural rate of interest.

In sum, when assessing the risk of shadow banking, it is crucial to analyze whether shadow banks lend their money cautiously and the projects they finance. This has to do with the levels of confidence and scrutiny of banks. In this regard, we should not overlook that «big players» (Koppl, 2002), governments and central banks, can modify the behavior of traditional bankers and investors by introducing public guarantees and artificially low interest rates, while shadow banks usually remain free from these distortions.

3.2.3. Market Equilibrium: Rational Entrepreneurs or Irrational Money Managers?

The different conclusions we get from the Austrians and Minsky derive from their assumptions about the rationality of investors and the efficient market hypothesis, which are reflected in Austrian rational entrepreneurs and Minsky's irrational money managers motivated by animal spirits.

The figure of the entrepreneur is the core concept of Austrian economics. Entrepreneurship has been characterized in several ways: capacity of innovation (Schumpeter, 1934), alertness to hitherto undiscovered profit opportunities (Kirzner, 1979), adjust to changing circumstances (Schultz, 1975), or judgmental decision-making under uncertainty (Foss and Klein, 2005).

By looking for new profit opportunities, Austrian entrepreneurs create market coordination and move the economy toward equilibrium. Throughout this process, they can make mistakes, but systematic mistakes can only be induced by government regulatory policies and political manipulation of relative prices such as the interest rate.

Minsky differs from Joseph Schumpeter, his doctoral supervisor. He does not believe that the economy has a tendency toward equilibrium. Minsky argues that financial capitalism has an inherent tendency to instability and crisis. The main destabilizing mechanism is speculation upon growing debt. In Minsky's words: "… *over periods of prolonged prosperity, the economy moves from financial relations that make for a stable system to those that make for an unstable system*" (Minsky, 1994, p. 157). This is the well-known «Financial Instability Hypothesis».

The underlying cause to this process is what he describes as "money manager capitalism", a system characterized by highly leveraged organizations, such as private pension and mutual funds, seeking maximum total returns in an environment that systematically underprices risk (Wray, 2011). With little regulation or supervision of financial institutions, Minsky states that markets create incentives for excessive risk-taking lessening the efficacy of market discipline as a self-regulation tool.

Minsky depicts a similar, but not identical, process to that explained by the Austrians. He considers two key features. The first one is highly leveraged funds which corresponds to an expansion of credit under a growing role of traditional and shadow banks. The second one is systematically underpriced risk, which is essentially related to artificially low interest rates. However, Minsky assumes that the underpricing of risk stems from Keynesian animal spirits. Thus, when the economy expands, money managers are too optimistic in their borrowing and

lending practices. Unlike the Austrians, Minsky does not think markets can create self-control mechanisms which penalize over-optimism, over-indebtedness and excessive risk-taking.

3.3. Possible Consequences of Shadow Banking

Austrian economists' and Minsky's contrasting theories offer three different characterizations of the role played by Chinese shadow banking activities.

Even though there is a growing literature in mainstream economics about shadow banking and macroeconomic instability (see Meeks *et al*., 2014), there is a lack of interest in this subject among the Austrians with the exceptions of Sieroń (2016), Giménez and Lermuye (2016) and Gertchev (2009). Furthermore, Austrian economists are split on this topic.

Thus, under the assumptions of Austrian "free-bankers" (Selgin, White, Horwitz, Garrison, Dowd…), shadow banks, as market-based entities, cover the financing of investment projects or industries that are restricted to conventional banks. Also, self-regulated banks can manage credit risk following their own strategies and correct reckless lending policies of regular banks. Therefore, this group of Austrian authors regards shadow banking as a form of free-banking, where financial activities can be useful for the economy by both providing liquidity for small and medium-sized firms and moving interest rates towards their natural levels.

In contrast, full-reserve banking advocates such as Mises (1912), Rothbard (1962) and Huerta de Soto (2006), observe shadow banking as a deviation from a pure commodity-money standard. They assume that shadow banking activities contribute to credit expansion, further reducing interest rates and exacerbating the economic cycle (Sieroń, 2016). These economists argue that the best way to eliminate business cycles is not by granting banks the privilege of issuing new fiduciary media. Quite the opposite, Huerta de Soto (2006) proposes a monetary reform whose main goal would be to prevent artificial credit expansions created by fractional-reserve banks under the direction of a central bank.

Lastly, under the third (non-Austrian) approach, Minsky also tries to manage credit supply with a certain degree of elasticity like free-banking theorists. However, he doesn't believe that markets can develop self-control mechanisms to penalize over-optimistic, risk-prone money managers. Instead, Minsky calls for greater regulation and supervision of financial markets and institutions. This view is opposed to both branches —fractional reserve free-banking and 100-percent reserve banking— of the Austrian School.

Minsky thinks that by allowing traditional banks to remove credit risks from their balance sheets, shadow banks create new uncontrollable financial risks at the same time as they expand their lending activities. Nevertheless, this view is not far removed from that sustained by 100-percent reserve banking advocates.

3.3.1. Implications for Central Bank and Government Policies

Different interpretations of the idea of market equilibrium, the rationality of economic agents and the effectiveness of economic policy, led the Austrian economists and Minsky to have different approaches to the role of central banks and government policies.

The Austrians oppose government intervention both in the financial and real sectors of the economy. They observe governments and central banks as big players that create uncertainty and moral hazard in the economic system. They sustain that business cycles are majorly caused by credit expansion and artificially low interest rates induced by central bank policies. When the crisis hits, central banks should not bail out insolvent banks by providing them more credit and pushing down interest rates even more. Instead, we should let the economy recover on its own since liquidation is the only way to turn malinvestments into productive capital goods. In this regard, only Austrian authors argue that liquidation is a necessary condition for economic recovery.

On the contrary, Minsky argues that governments should take more actions to strengthen public institutions and financial regulatory and supervisory frameworks, which would exert an important stabilizing effect on the economy. He supports the relevance of «big players» as a

counterweight to market forces: the combination of a big central bank and a big government would help to prevent a financial crisis from turning into a recession. Thus, countercyclical government deficits would offset the fall in income and profits, while central bank's monetary and credit policies would relieve pressure in financial markets (Wray, 2011).

In the case of shadow banking in China, Austrians do not support introducing government interferences or prohibitions on shadow banking activities, but shadow banks should not take any advantage or guarantee from the PBOC. They should manage and control their own risks. It must be noted that even for full-reserve banking advocates, the solution would not be to curb shadow banking, but to prevent any further credit expansion by placing the banking and near-banking institutions under the general rules of commercial and civil laws.

Finally, Minsky states that rapid credit expansion and financial innovation leading to high levels of leverage (e.g. as an outcome of shadow banking activities) are significant sources of systemic risk and instability. Therefore, shadow banking should be regulated and supervised by stronger governments and central banks.

4. Empirical Evidence in China: A Preliminary Assessment

This section provides a preliminary analysis of the relationship between China's economy and shadow banking activities. In this respect, it tries to shed some light on Shanghai stock market boom and bust cycle from November 2014 to February 2016. On June 2015, the Chinese stock market lost a third of its value after experiencing half a year of booming activity. How did this boom-bust cycle of the stock market begin?

We start from the hypothesis that the stock market boom was encouraged by the Chinese monetary authorities (García-Herrero, 2015). From November 2014 to June 2015, the PBOC announced several cuts in official lending and deposit rates (figure 1). Central bank's monetary policy was aimed at preventing potential economic slowdown and the risk of deflation. Also, the central bank promoted stock market financing by cutting reserve requirements to spur bank

lending.[14] As a result, the stock market skyrocketed with nearly a 79% increase from November 2014 to June 2015 (see figure A1 in the Appendix).

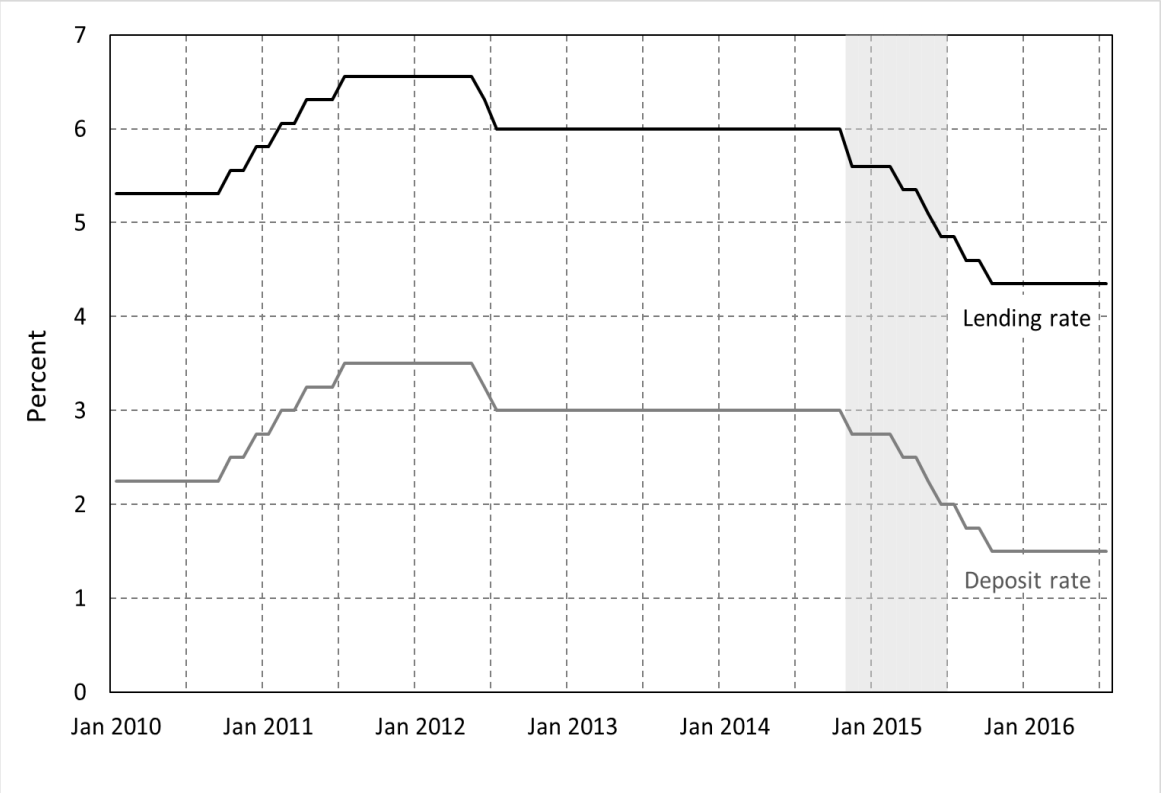


Figure 1. One-year official deposit and loan rates.
Source: International Financial Statistics Database.

Regulatory changes and expansionary monetary policies fostered credit expansion, mainly channeled through stated-owned banks (figure A1).[15] To analyze the effect of credit expansion on the Shanghai stock market (*market*), we select the loans of the 4 biggest state-owned banks (*4banks*): The Bank of China, China Construction Bank, Industrial and Commercial Bank of China, and Agricultural Bank of China. These entities dominate the domestic banking system and are good representatives of traditional banking activity. Additionally, we use entrusted loans (*entrusted*) as the largest component of non-bank lending in China until 2014.[16] All the variables, in monthly growth rates[17], are from the PBOC and CEIC and cover the period 2010-April 2017.

We apply the Granger causality test to determine whether changes in *4banks* and *entrusted* loans lead to changes in stock market capitalization. Particularly, we test the null hypotheses (H_0) summarized below:

H_0: State-owned bank loans (*4banks*) do not Granger cause stock market changes

H_A: Stock market changes (*market*) do not Granger cause state-owned bank loans

H_0: Entrusted loans (*entrusted*) do not Granger cause stock market changes

H_A: Stock market changes (*market*) do not Granger cause entrusted loans

Table 3 shows the results of the Granger causality tests with 5 lags. However, these results are robust to different lag length specifications (we consider a range from 1 to 12 lags).

Pairwise Granger causality tests
Sample: 2010:01 2017:04
Lags: 6

Null Hypothesis:	Obs	F-Statistic	Probability
4banks does not Granger Cause *market*	81	2.42978	0.03460
market does not Granger Cause *4banks*		3.29607	0.00661
Null Hypothesis:	Obs	F-Statistic	Probability
entrusted does not Granger Cause *market*	81	0.91985	0.48629
market does not Granger Cause *entrusted*		0.21138	0.97203

Table 3. Granger causality test results.

The results of Table 3 show that:

1. State-owned bank loans do "Granger cause" stock market capitalization.[18] This outcome is consistent with the idea that the PBOC promoted stock market financing by cutting reserve requirement ratios for regular banks. PBOC's expansionary monetary and credit policies, channeled through state-controlled banks, and new investment rules (increased use of margin trading on Chinese capital markets) were the major drivers of the rise in stock market capitalization from the end of 2014 to the first half of 2015. Additionally, in July 2015, biggest state-owned banks lent 1.3 trillion yuan (more than $200bn) to the

China Securities Finance Corporation Limited, the only institution that provides margin financing loan services to qualified securities firms, to staunch a freefall in the Chinese stock market.[19]

2. There is evidence of bidirectional Granger causality between state-owned bank loans and stock market capitalization.[20] This result shows that when the government promotes credit expansion by injecting liquidity into the banking system, this stimulus can initiate a self-reinforcing cycle: the injection of liquidity fosters lending, which rises collateral prices, which in turn facilitates more lending and investment (Bleck and Liu, 2014).

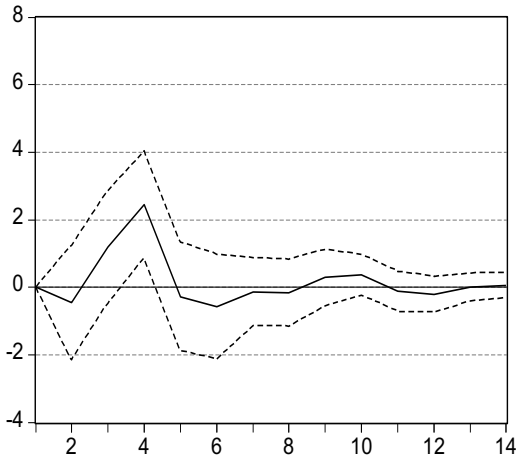
3. Finally, entrusted loans do not Granger cause stock market capitalization.[21] This result is consistent with the fact that shadow banks are not subject to the rules applicable to traditional commercial banks, and barely reacts to PBOC's monetary and credit policies. Since they are outside the conventional banking system, credit allocation in this sector is mainly driven by market forces and not by government decisions.[22]

   As previously explained, regulators have tried repeatedly to cut off some sectors of the economy from formal financing channels. Under these limitations, entrusted loans arise as a way of channeling funds to less privileged firms (small and medium-sized private enterprises) that are unable to get financing from regular state-owned banks and capital markets (Allen *et al*., 2017). Therefore, it seems reasonable to assume that these firms are further away from the stock market.[23]

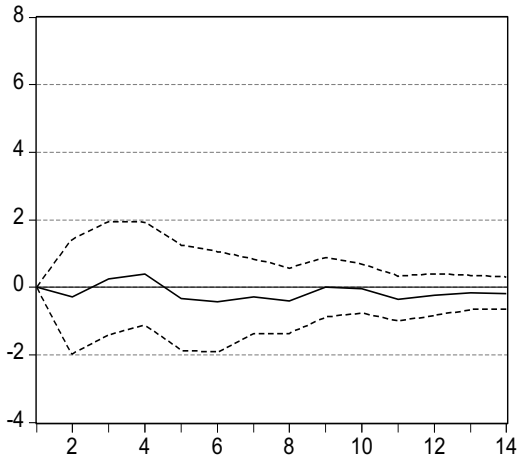
Causality tests may not tell us the whole story about the dynamic interactions between the variables. To examine the behavior of these relationships, we estimate a vector autoregressive (VAR) model and determine the associated impulse-response functions. These functions are useful for analyzing the interactions between the variables in the VAR model. Specifically, they represent the response of endogenous variables to unexpected shocks hitting the system.

For the VAR model, we use the vector of variables (*market*, *4banks*, *entrusted*). Although we select a lag length of 5 on the basis of information, stability and diagnostic tests, the shape of the estimated impulse-response functions is quite robust to the lag length chosen.

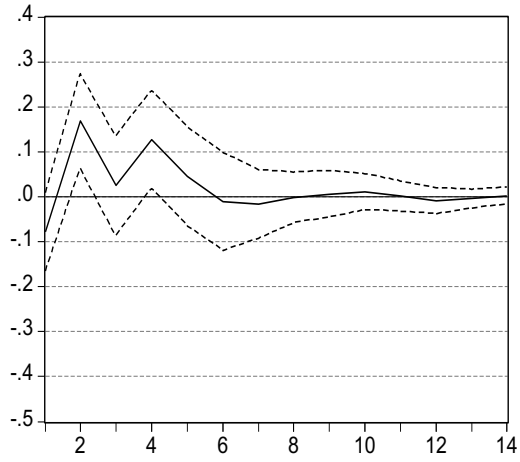
(*A*) Response of *MARKET* to *4BANKS*



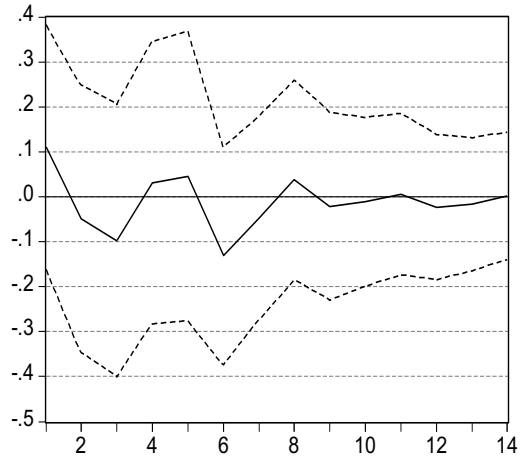
(*B*) Response of *MARKET* to *ENTRUSTED*



(*C*) *Response* of *4BANKS* to *MARKET*



(*D*) Response of *ENTRUSTED* to *MARKET*



(*E*) *Response* of *4BANKS* to *ENTRUSTED*

(*F*) *Response* of *ENTRUSTED* to *4BANKS*

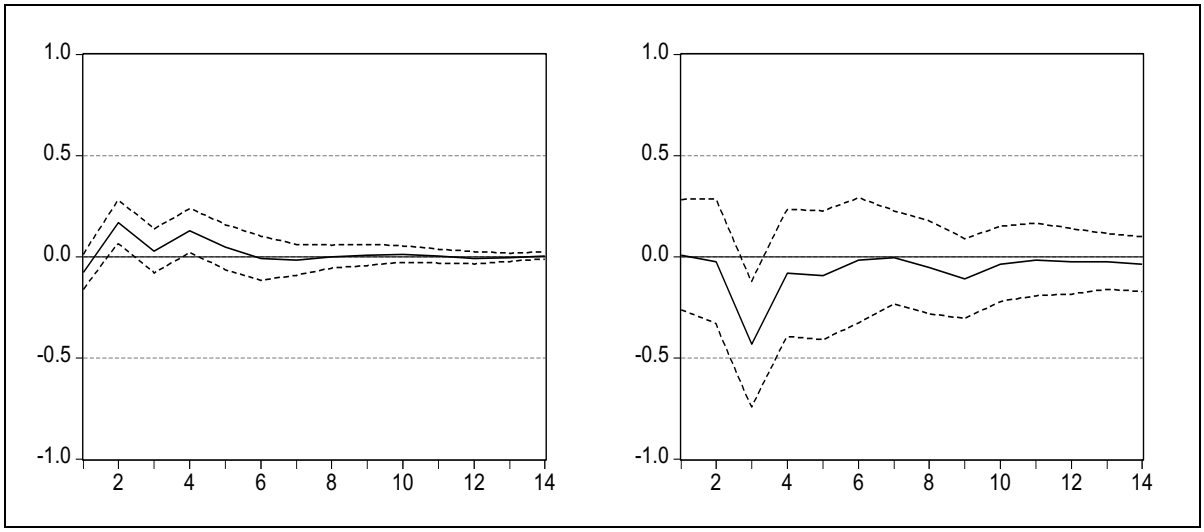


Figure 2. Impulse-response functions from the estimated VAR model. Response to Cholesky one S.D. innovations ± 2 S.E.

Figures 2*A* and 2*B* show the impulse-response functions of stock market capitalization to a one standard deviation (S.D.) shock in the rate of growth of state-owned bank loans (*4banks*) and entrusted loans (*entrusted*), respectively. These figures, together with Granger causality tests, reflect the existence of a temporary positive effect of state-owned bank loans on the stock market. In contrast, entrusted loans hardly affect the behavior of this market. The boom-bust cycle shown in figure 2*A* would be consistent with the dynamics of the stock market between the end of 2014 and June of 2015.

Figure 2*C* supports the existence of a bidirectional positive (or feedback) relation between state-owned bank loans and stock market capitalization. Thus, we can observe the presence of a short-lived positive impact of stock market capitalization on state-owned bank loans. Lastly, figure 2*F* shows a negative response of entrusted loans to a one S.D. positive shock to the rate of growth of state-owned bank loans. This result is consistent with the idea that entrusted loans increase when the official credit is tight (and vice versa) and therefore are a market reaction to credit supply shortages.[24]

Taken together, this section's results are coherent with our initial hypothesis, namely: the boom-bust pattern of the Chinese stock market from the end of 2014 to June 2015, was induced

by government regulatory changes and PBOC's loose monetary and credit policies (channeled through state-controlled banks), and not by the rise of non-bank lending (proxied by entrusted loans).

5. Conclusions

China's economy fits quite well into the theoretical model proposed by H. Minsky. On one hand, there is a good number of state-owned banks and firms. On the other hand, a combination of a big central bank and a strong government act as a counterweight to market forces. Finally, there is a high level of regulation and supervision of traditional banking activities. However, from the end of 2014 to February 2016, even in the context of a state-directed economy and a central bank-controlled banking system, there was a financial bubble followed by a bust.

China's shadow banking emerged as a market reaction to avoid financial constraints (loan quotas, industry limitations, reserve requirements and interest rate ceilings on bank deposits and loans) which created a climate of financial repression before October 2015.

Shadow banks can make loans more widely available to small and medium-sized private firms, but since they are not subject to the same regulations and controls as traditional banks, there is a concern about the risk they pose to the financial system. However, in line with the ABCT, this article shows that the boom-bust pattern of the Chinese stock market from the end of 2014 to June 2015, was apparently encouraged by government regulation and central bank's expansionary monetary and credit policies (channeled through state-owned banks) and not by the rise of non-bank lending.

China's recent experience can be employed as a good illustration of the ABCT. Thus, when governments (through banking regulation) and central banks (by means of monetary and credit policies) distort interest rate signals and encourage credit expansion, they lay the foundations for a boom-bust cycle.

Irrational waves of optimism and pessimism that Hyman Minsky identified as the cause of endogenous financial crises, are not just the result of animal spirits and uncertainty, but also of misleading price signals and massive mistakes in the decision-making process provoked by unsustainable credit-induced booms. These points were largely ignored by Minsky.

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APPENDIX

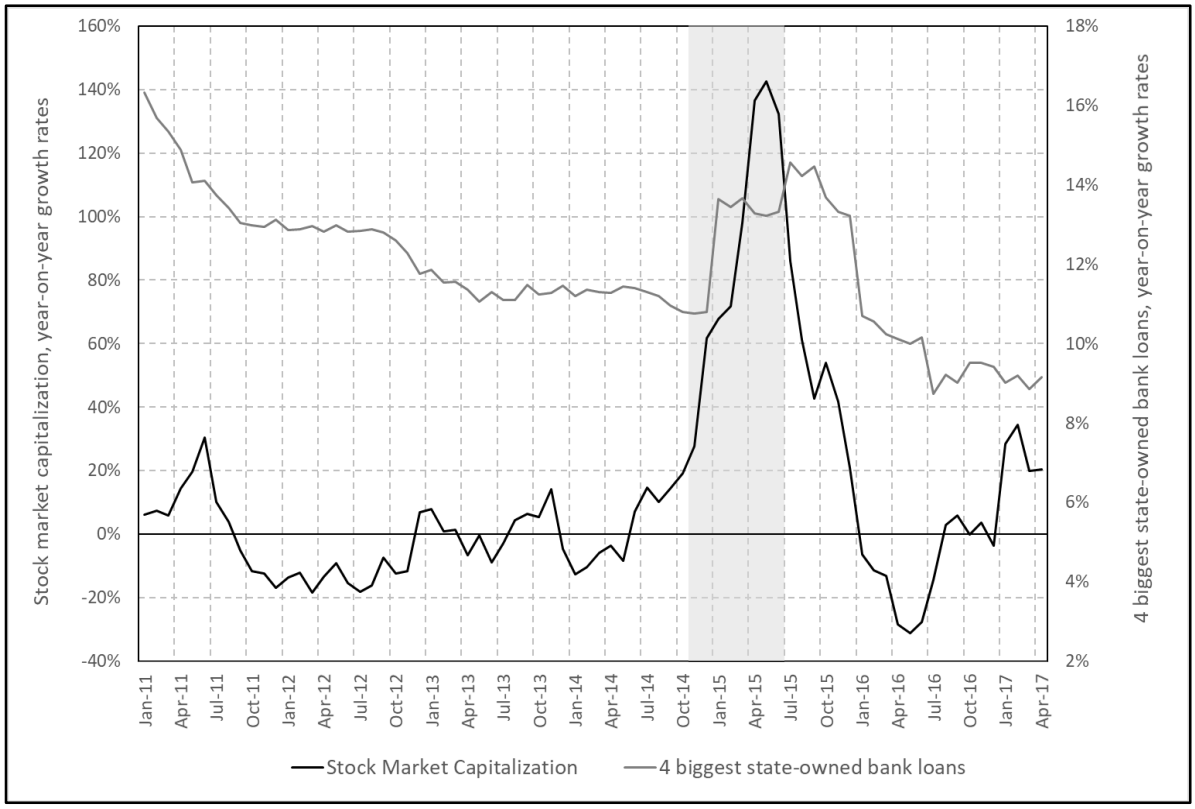

Figure A1. State-owned bank loans and stock market capitalization (interannual growth rates).

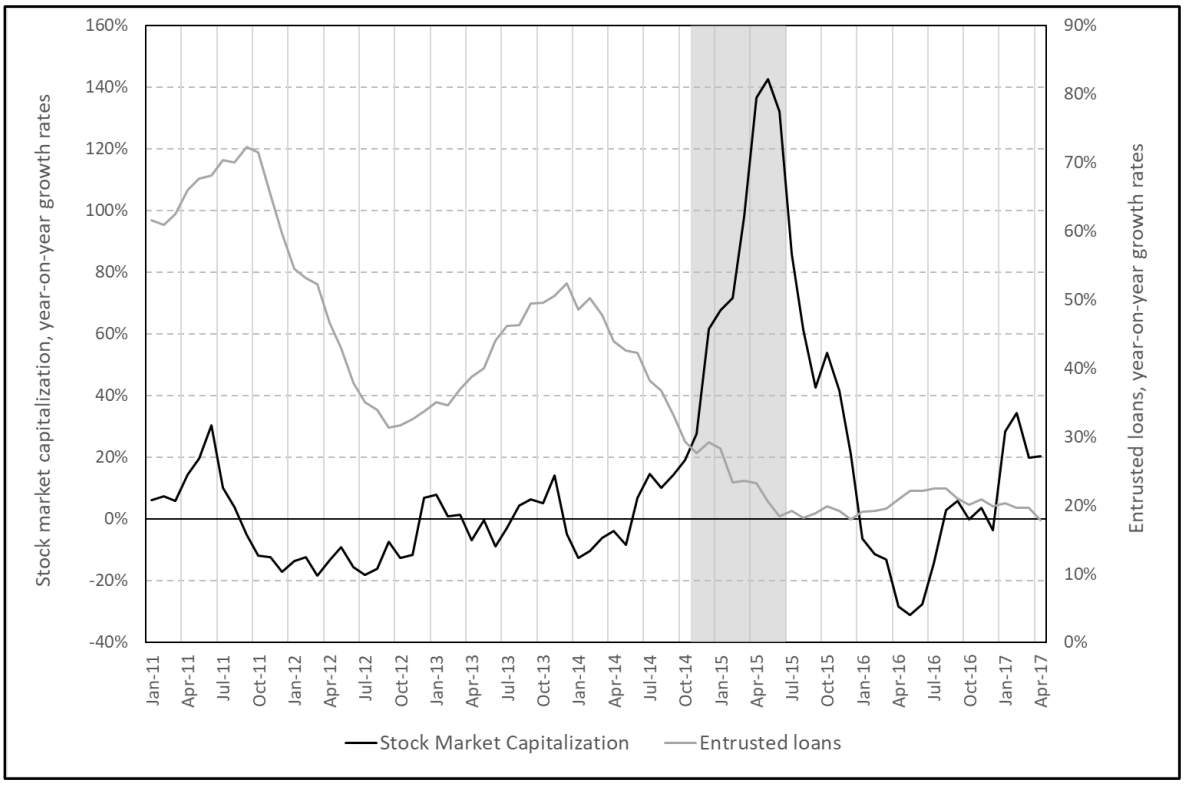

Figure A2. Entrusted loans and stock market capitalization (interannual growth rates).

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[1] According to the Financial Stability Board, China's shadow banking has grown by more than 30% per year over the last three years compared with 10% growth in the rest of the world. Furthermore, this sector is becoming increasingly interconnected with the formal banking system, which can increase contagion risk across sectors and within the shadow banking system itself.

[2] See http://www.financeasia.com/News/398478,don8217t-blame-china8217s-shadow-banks.aspx

[3] Besides regular deposits, banks collect money from investors by selling wealth management products. WMPs are usually purchased by relatively wealthy investors as substitutes for bank deposits, with the benefit of higher yields than banks can offer on formal deposits. Money got in this way, is often channeled to finance companies or projects that would otherwise have little access to formal lending.

[4] A bank is often at the core of the transaction, offering an implicit guarantee for the various wealth products it sells to the non-banks it engages with (Dang *et al*, 2015).

[5] This is the so-called «micromanagement of lending» (Elliot *et al*, 2015): Commercial banks receive direct instructions to avoid or limit lending to certain industries that the government feels need to shrink.

[6] Entrusted loans are lending activities between non-financial firms with regular banks or non-bank financial companies acting as trustees or intermediaries. The main feature of these products is the lack of transparency: they are kept off bank balance sheets because the trustees do not assume any credit risk.

[7] Allen *et al*. (2016) argue that alternative financing channels support the growth of the private sector in China.

[8] Schumpeter (1954) states that the lack of confidence in the political authorities, whose freedom of action is greatly increased by currency systems that do not provide for prompt redemption in gold of all means of payments, is quite sufficient to motivate "practical metallism".

[9] However, Huerta de Soto (1998) and Hülsmann (2003) explain that fiduciary media issued in response to changes in the demand for money create, rather than eliminate, economic discoordination under a fractional-reserve banking system.

[10] Thus, Mises ([1949] 1998, p. 440) asserted: "*But even if the 100 percent reserve plan were to be adopted on the basis of the unadulterated gold standard, it would not entirely remove the drawbacks inherent in every kind of government interference with banking. What is needed to prevent any further credit expansion is to place the banking business under the general rules of commercial and civil laws compelling every individual and firm to fulfill all obligations in full compliance with the terms of the contract*."

[11] Here we omit the debate between fractional and full-reserve free banking. However, it is worthy to note that Huerta de Soto (2006, Ch. 9, p 740) proposes a 100-percent reserve free-banking system as the basis of a complete banking reform.

[12] According to Cochran (2012), the existence of a central bank, with its ability to create high-powered money, is a necessary precondition for excessive credit creation. Without it, credit creation by fractional-reserve banks would be limited in extent.

[13] Mises ([1912] 1953) defines the natural rate of interest as the rate that would be determined by supply and demand if actual capital goods were lent without the mediation of money.

[14] A third major contributor to the stock market boom in 2015 was increasing margin trading by retail investors. At the end of 2014, margin trading had jumped to 20% of total market trading volume.

[15] PBOC's monetary policy was largely run by controlling the volume of bank credit, which produced a similar effect to controlling overall money supply, given the dominance of state-owned banks (Elliot *et al*., 2015).

[16] From 2009 to 2015, entrusted loans became the second-largest financing source after traditional bank loans, and their share in total outstanding shadow banking lending reached over 49% in 2015 (Chen *et al*, 2017).

[17] Phillips-Perron unit root tests show that all series are stationary. Results are available on request.

[18] This result is robust to changes in the number of lags (from 6 to 12 months) under a significance level of 0.05. The number of lags increases (from 4 to 12 months) if we keep the significance level at 0.1. These findings are suggestive of the existence of a lagged effect of state-owned bank loans on stock market capitalization.

[19] The four largest state-owned banks each provided more than RMB 100 billion. At the same time, the PBoC confirmed it had provided loans directly to the China Securities Finance Corporation.

[20] Stock market capitalization does Granger cause state-owned bank loans for all time lags.

[21] We accept H_0 (entrusted loans do not Granger cause stock market changes) and H_A (stock market changes does not Granger cause entrusted loans) for all time lags (from 1 to 12).

[22] Dang *et al*. (2015) state that while the PBOC maintains stability and control over the regular banking system, shadow banking is a parallel system driven by market forces.

[23] Firms listed on the Shanghai stock market are large companies with a share capital greater than RMB 50 million (more than 6.3 million euros).

[24] Chen *et al*. (2016) show that the total amount of entrusted loans increased during the monetary tightening period of 2010-2013. See also Allen *et al*. (2016).