Conflict, Contention and Cooperation in China's New Model of Financial Intermediation Monitoring

W. Travis Selmier II
Indiana University
wselmier@indiana.edu

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ABSTRACT

The modern Chinese financial system has developed along lines incorporating western banking theory while innovating new, globally-competitive financial technologies alongside traditional forms of financial intermediation. Yet China is pursuing a different path concerning financial intermediaries' social responsibility to monitor financial contracts. Financial institutions in Western theory have a fiduciary responsibility to protect borrowers' and capital providers' information but publically signal those clients' information through their actions; both the information and its disclosure (or withholding) increase the political and economic power of western financial institutions. Long reluctant to empower financial institutions, the Chinese national government is cooperating with large on-line financial service providers and coopting data from them to engage in financial and social monitoring through the Social Credit System.

As the Chinese government builds an "algorithmic [financial] governance" system, China may gain some macro-economic and social benefits. Suppression of speculative uses of capital aggregated through P2P and folk-lending channels mean China's new model may provide more stability than western models but may also compromise privacy of borrowers and capital providers. Additionally, contention in the international financial system may influence development of this algorithmic financial governance system.

Key words: Financial institutions; financial intermediation; delegated monitoring; public policy; informal lending; transitional economies; China

JEL classification: G2; P3; Z1

1. Introduction

> The Ruler mints coinage to establish [sovereign] currency, for the transactions of the common people. (人君鑄錢立幣，民庶之通施也) *Guanzi*, 4 cen BC, my translation.

Over millennia, Chinese financial intermediation has developed some of the world's most advanced, formally-institutionalized products and systems as well as some of the least-formal, simpler systems in the world.[1] Since 1978 the Chinese financial system growth has developed along lines which incorporate western banking theory, innovating new, globally-competitive financial technologies alongside traditional forms of financial intermediation with millennia-long history (Borst, 2013; Horesh, 2013; Luo, 2016;). During this four-decade development of Chinese financial intermediation, the Chinese government has not forgotten a 2400-year old Chinese view expressed in the Guanzi which integrates money, financial intermediation and centralized political power as key parts of a strong state. Governance and power have always been critical to providing the public goods of money. But, in China and elsewhere, information management and control have become paramount in modern financial intermediation and money flows. This has led China to pursue a different path concerning the social responsibility of financial intermediaries tasked with monitoring financial contracts; in fact, the Chinese government has interposed itself as the dominant player in financial intermediation monitoring by actively supplanting financial institutions' roles.

One can argue China's different path is due partly to her unique hybrid capitalist system involving considerable state ownership and influence. The oft-remarked "market economy with Chinese Socialist characteristics" is only one of the necessary conditions, though; China's comparative size as one of the world's largest constitutes another necessary condition. China's later economic development provides another necessary condition for its unique systems of financial monitoring. Importantly, a linking of financial contracts with a broader sense of social credit is also critical in the Chinese context. This linking provides foundations for the greater breadth and depth, linkage of financial monitoring with social monitoring, and government management of the Social Credit System, or SCS[2] (Chorzempa, Triolo & Sacks, 2018; Creemers,

[1] For instance, first to develop a form of bankers' acceptance during the Song Dynasty, Chinese bankers were able to send interbank transfers a thousand kilometers (von Glahn, 2005; Horesh, 2013: 49-64).

[2] As Liang et al (2018), Chorzempa et al (2018) and others have discussed, the SCS has developed over decades. An example of name change indicates part of this shift: the Ministry of Human Resources and Social Security referred to the plan in an important 2003 paper as the "企业劳动保障诚信制度" [Credit System for Enterprise Labor and

2018; Dai, 2018; Liang, Das, Kostyuk & Hussain, 2018). SCS datasets capture a broad array of financial, social, legal and communications/travel data on individuals, business entities and government organizations to provide comprehensive financial (and social) monitoring. SCS constitutes a new model of financial monitoring.

Within Western financial monitoring theory, financial institutions, with fiduciary responsibilities to borrowers and capital providers, publicly signal their clients' information through their actions (Allen, 2001; Diamond, 1984; Schumpeter, 1939). This information is valuable to society in macro-economic terms, but possessing this information and the capacity to selectively disclose (or withhold) this information also increases the political and economic power of western financial institutions. Financial institutions occupy economically-critical positions in both capital networks and informational networks; economies cannot function, or cannot function well, if either capital or informational flows are compromised (Allen & Santomero, 1997; Greenbaum & Thakor, 1995). Capitalist economies are so-termed because capital intermediaries occupy these critical positions in their economic structures, but financial institutions' positions as critical intermediaries are not confined to capitalist economies.

While formal Chinese financial intermediaries are quite sophisticated capital providers and so occupy central intermediating positions in the Chinese economy and, increasingly, in the global economy, their positions as information intermediaries have been purposefully constricted.[3] This is not to say that Chinese financial intermediaries do not monitor at all, but rather that their monitoring functions are restrained and restricted, and the main "client" of the information they gather is the Chinese government rather than a range of economic actors, as theorized in Western financial intermediation theory. Chinese government officials have been uncomfortable with delegating governance authority to private actors (see, for instance, Gruin, 2017; Selmier, 2016; Yang, G.B., 2014). Forms of financial intermediation channels exist in China from which it is quite difficult to extract information, or to govern, but the national government has sought to capture more data from these channels' informational flows.

Social Security]. The most important document in the SCS development history, the 2014 State Council Report, uses 社会信用体系 – simply the SCS. Name changes and data discussed in Liang el al, 2018: 26- 28.

[3] An example is the May, 2018, PBoC decision not to grant licenses to eight pilot credit reporting projects, while licensing Baihang Credit Scoring [36% owned by government-linked National Internet Finance Association, with stakes of 8% each to the eight private firms which established the credit reporting systems]. See Dai, 2018: 19- 21.

Folk-lending [minjian jiedai- 民间借贷] is one such informal financial intermediation channel in China in which financing was traditionally structured between geographically-close borrowers and lenders who have a long-established personal relationship (Jiang, 2009; PBoC, 2012; Selmier, 2017a, 2018). Folk-lending allowed those without access to formal financial institutions, without credit history, without critical personal connections to the well-heeled, to obtain capital (Shi & Ye, 2001; Tsai, 2002; 2009). And while access to formal financial institutional options may be available, folk-lending has often provided what a capital-endowed person may perceive to be an acceptable rate for locking up her capital which may not be obtainable through formal financial channels.[4]

In the last decade, a new form of collaborative lending- peer-to-peer lending [P2P平台, or simply P2P] - uses on-line lending platforms to bring together geographically-distant actors who are connected only through the P2P on-line platform. Although lenders and borrowers do not know each other, P2P usage is driven by some of the same important motivations which drive Chinese to use folk-lending. As with folk-lending, those borrowing through P2P may lack credit history and personal connections to the well-heeled. Growth in the P2P channel has grown exponentially in China since 2012 (Selmier, 2017a; Li & Yi, 2016; Wildau, 2017). Both folk-lending and P2P are disruptive financial intermediation channels in that they each enable potential capital-requirers to circumvent traditional financing, have proven difficult to monitor and govern, and have been responsible for economic development through spreading access to financing while also expanding financial bubbles (Economist, 2016; PBoC, 2012; Selmier, 2018a; Tsai, 2009, 2016; Wildau, 2017). Both have proven critical to SME growth as large state-owned banks would not lend to them (Bailey, Huang & Yang, 2011: Lin & Chen, 2012; Zhang, 2002), while smaller banks focused on specific sectors and better-heeled clients (Tanaka & Molnar, 2008; Zhang, Xu & Qin, 2013). Both forms have helped develop China's private sector by funding new start-ups and creating new forms of capital-pooling. Both have relied more extensively on trust rather than formal financial contracts do.

Trust is critical to all forms of financial contracting (Carruthers & Kim, 2011; Diamond, 1984). Formal financial intermediaries are entrusted with social responsibilities to monitor financial

[4] Qin, Xu & Zhang (2014) argue that the steep decline in loans-to-deposits between 1991-2011 in the formal banking system in Wenzhou -- considered China's center for folk-lending -- was due to a rapid and sustained shift of funds into the folk-lending channel where returns on capital were much higher.

contracts, thereby overcoming financial market inefficiencies by acting as information conduits and providing discipline (Diamond, 1984; Rajan & Winton, 1995). Acting on this information provides signals to other economic actors, governments, individuals and interested observers (Allen, 2001; Allen & Santomero, 1997; Diamond, 1984). Chinese banks and other financial intermediaries lag in fulfilling this social responsibility when viewed from the predominant Western financial theory's perspective (Selmier, 2017a). But linkages between trust, financial contracting, and credit (a broader concept in China) are at the heart of China's SCS' goal of monitoring:

> In order to establish a culture based on honesty, [with the] inherent requirement to promote traditional virtue of honesty, [the SCS] would employ credit [enhancement] and loss of credit as reward and punishment mechanisms with the purposes of improving consciousness of social integrity and levels of "credit" (State Council Preamble, 2014).[5]

The SCS requires a massive amount of information and analytics, and the capacity to capture, amalgamate and analyze information and monitor borrowers has proven weaker in folk-lending and P2P, as each lending channel has suffered from lack of information and opacity (Elliott & Yu, 2015; PBoC, 2012; Tsai, 2009). This is changing in the P2P channel. Long reluctant to politically empower financial institutions (Allen, Qian & Qian, 2005; Lardy, 1998; Selmier, 2017a), the Chinese national government is cooperating with large on-line financial service providers and coopting data from them to engage in financial monitoring (CBRC, 2016; Chorzempa et al, 2018; Liang et al, 2018). As the Chinese government seeks to build what Gruin (2017) calls an "algorithmic [financial] governance" system, China may gain additional macro-economic and social benefits. While informal financial products like folk-lending and some P2P lenders were heavily involved in the 2014-2015 stock market ramp and crash (Economist, 2016; Selmier, 2018; Wildau, 2017), the larger, sophisticated P2Ps were less involved (Fong, 2018; Selmier, 2017a; Tsai, 2017). Suppression of this leakage of P2P-aggregated capital into speculative uses argues that China's new model may provide more stability than western models. Additionally, it is not clear that monitoring in western models works consistently as it is dependent on the sometimes-ignored social responsibility of financial intermediaries (Carruthers, 2015; Morgan, 2016) and may not encourage financial inclusion which the Chinese model may encourage (Selmier, 2018a; Tsai, 2017).

[5] Author's rough translation of 以树立诚信文化理念、弘扬诚信传统美德为内在要求，以守信激励和失信约束为奖惩机制，目的是提高全社会的诚信意识和信用水平。

The next section contextualizes Chinese financial intermediation through foundations in banking theory and social capital's role in finance, theoretically mapping financial intermediaries by their industrial organization level and operating level characteristics. Section 3 examines monitoring issues and governance challenges with folk-lending and P2P, discussing the challenges of SME financing and how folk-lending and P2P address these challenges. Here I note how Chinese recent government policy works to gain more control and to better capture information in these financing channels. The last section highlights political aspects and control functions behind China's new model of financial monitoring, noting that there are important international dimensions which are not yet fully appreciated.

2. Financial Development with Characteristic Chinese Socialist Control

Chinese financial history mirrors the country's overall history as a series of stunning financial innovations during periods of growth interspersed with periods of decline and occasional chaos [乱]. Chinese history boasts of the world's first known coinage,[6] first paper money, first form of bankers' acceptances and tax anticipation notes, first national economy and among the first known banking systems (von Glahn, 2005; Horesh, 2013; Modelski & Thompson, 1996). Today China has one of the most sophisticated on-line payment systems in the world (Guo & Bouwman, 2016: Li & Yi, 2016), which is now providing extensive financial and personal information to both on-line financial services firms running these systems and to the Chinese national government (CBRC, 2016; Dai, 2018; Li et al, 2018).

Yet there are still extensive financial transactions which occur through informal contacts and networks. In part to better monitor and rein in these informal transactions and more sophisticated financial innovations engineered largely to skirt regulatory restrictions, Chinese financial regulatory authorities have sought to develop formal financial institutions and financial intermediation channels. The rapid development and deepening of the financial sector shows two contrasting goals of the Chinese Government: develop the most efficient capital allocation channels while concurrently maintaining control over interest rates, capital and informational flows, and financial institutions, both formal and informal. We can see these contrasting, sometime conflicting, goals over the history of Chinese's modern financial development.

[6] Three millennia ago, although some monetary scholars claim that stone tablets used in India five millennia ago may constitute the first money. See von Glahn, 2005; Horesh, 2013; Selmier, 2017b.

After the 1949 Revolution, the Chinese government consolidated the formal banking and insurance institutions into a single bank- the People's Bank of China [PBoC] - and two ancillary financial institutions (Branstetter, 2007: 28-30; Eckstein, 1977; Lardy, 1998). Starting in 1978, the Four Modernizations program began the head-long process of redeveloping Chinese banking and finance from this mono-bank-centric financial system toward a capital-endowed system composed of highly-specialized niche firms in addition to the large state-owned institutions (Cousin, 2007; Lardy, 1998; Luo, 2016: chapter 1; de Wulf, 1985). But, as in any financial system, kinks in capital allocation and informational flows led to a mixed system of formal and informal financial institutions wherein political influence still exerts pressure on capital allocation. How Chinese leaders defined financial system development quickly became a contentious, sometimes conflicted process. Two idealistic young economists argued in an influential 1985 editorial in *Jingji Ribao* [经济日报] that:

> The main purpose of risk capital is not to profit, but for future development; not to accelerate business [and profits], but rather to accelerate innovation. [7]

While Chinese leadership likely agreed with these goals for uses of capital *in general*, private risk capital has only been encouraged more recently, and is not encouraged as much as state-directed capital. The Big Four state-owned banks [henceforth, the Big Four] provide a case in point. From the beginning of the reform period the PBoC planned to use the newly-corporatized Big Four[8] to finance local development, requiring them to lend locally, consult with local officials concerning local bank management appointments, and to shift funds between regions (Brandt & Zhu, 2007: 98-103; Cao, Qian & Weingast, 1999; Shih, 2008: 32-36). Until 1998, the Big Four "were bound by the credit plan to lend a fixed amount to certain enterprises, sectors and regions of the economy" (Cousin, 2007: 123), and the Big Four are still often tasked with financial restructuring burdens during SOE reform programs (Cousin, 2007: 82-90; Tan, 2013).

While they have gained some independence and have considerably upgraded their information systems and credit scoring since the mid-2000s (Hansakul, 2006), in some ways the government-Big Four relationship has not changed over these four decades; Lardy's on-target observation in 1998 (221) continues to accurately describe the Big Four's situation: "since the financial

[7] "风险资本主要目的不是为了眼前利润，而是为了未来发展; 不是为了促进企 业，而是为了促进创新。" Translation by author in Selmier, 2017a.

[8] The Big Four existed in name before the 1978 Four Modernizations, but their rechristening as modern corporatized banks can be dated from the Four Modernizations.

system… is the last remaining powerful instrument through which the state and party directly influence resource allocation, they are naturally reluctant to give up this power." Two examples of this continued government pressure on the Big Four banking operations are 1) still low levels of lending to non-state-owned enterprises. Tsai (2009: 80) estimates 1.3% of the Big Four's loans in 2007 were to private enterprises, although this has grown since then. 2) the very slow pace of Big Four internationalization (Selmier, 2017a, 2018b; Yang, L., 2014) as the Chinese government has sometimes vetoed Chinese bank expansion (Selmier, 2013: 747; 2018b).

As shown in Table 1 below, the Chinese bank industry structure has broadened and deepened considerably over this period to include the joint-stock commercial banks (sometimes referred to as private banks) which typically focus on higher growth areas in consumer and industrial segments, and city commercial banks which have traditionally stayed within municipal or provincial borders while varying significantly in size, management capacity, and degree of political interference. Over the period 2003- 2015, these two categories of banks grew their assets from 16% to 30% of the formal Chinese banking system, even as total assets in the formal financial intermediation system grew from 276.6 trillion RMB to 1,993.5 trillion RMB (CBRC, 2015. See Table 1). The Big Four's share of total assets declined over this period from 58% to 39.3%, although their total assets grew nearly five times over this period. Foreign banks exercise considerable market power in selected industrial segments in selected cities but are constrained in deposit-taking and other banking operations, restraining their share of total assets to under 2%.

Insert Table 1 about here

In addition, there are large policy banks (state-owned) and also the China Development Bank which are involved in SOE restructuring as well as policy and development-linked impact lending (growing over 2003- 2015 from 7.7% to nearly 10%). Rural credit cooperatives were at one time an important part of credit accumulation but have long been subject to higher degrees of local political interference as they are often managed by local cadres. Assets of these rural cooperatives (as well as urban credit cooperatives) have declined while rural commercial banks have concurrently grown from negligible levels to nearly 8% of total assets in the formal banking system.

Non-bank financial institutions (NBFIs) include the trust and investment companies, P2P operations, and asset management firms (which have developed some banking functions) and

other informal financial institutions. NBFIs are defined as "non-bank" in large part because of their independence from formal banking regulation, and the amounts reported by the CBRC (China Banking Regulatory Commission) represent a lower bound of estimated assets (these two paragraphs abstracted from Cousin, 2007; Luo, 2016; Selmier, 2017a; Tan, 2013).

The complexity of NBFIs stems in part from often being classified under shadow banking, but shadow banking encompasses more than NBFIs. As Li of the Federal Reserve Bank observes concerning China's shadow banking sectors (2016: 1),

> "Depending on the context, the term 'shadow banking' can refer to entities, activities, or products. The Financial Stability Board (FSB) broadly describes shadow banking as 'credit intermediation involving entities and activities outside of the regular banking system…'"

In China all three- entities, activities, and products - are to be found in abundance: Recent estimates of the number of local private equity firms taking in capital and allocating where their managers see fit range from 10,000 to 18,000 (China Daily, 2017; Zhang, Jaeger & Ging, 2017). Until later 2016, P2Ps seem to act as banks although they were not regulated by the CBRC (Economist, 2016; Selmier, 2018a; Wildau, 2017). Debate continues as to whether P2Ps are engaged in quasi-banking activities or not after a joint ruling in August 2016 which recognized P2P as information intermediaries rather than financial intermediaries (CBRC, 2016; Gruin, 2017; Wildau, 2017).[9] Folk-lending channels clearly provide credit intermediation through informal institutions under limited regulation. Wealth management products [WMP] have become an enormous family of products which can be bank-like in many ways but fall outside much of regulatory oversight (Borst, 2013; Elliott & Yu, 2015; Li, 2016; Luo, 2016).

WMP are created, sold, managed and serviced by formal financial institutions, including trust companies, securities firms, public and private investment funds, and insurance companies (Elliott & Yu, 2015; Luo, 2016). Li (2016: 5) notes their respective assets under management as of mid-2016 were RMB 15.3 trillion (trust companies), RMB 14.8 trillion (securities firms), RMB 14 trillion (public and private investment funds), and RMB 2 trillion (insurance companies) with an aggregated amount of 60 trillion RMB in total, as estimated by China Securities Regulatory Commission. Banks are not only heavily involved in marketing these products, but in

[9] In addition to the CBRC, organizational signatories included the Ministry of Industry and Information Technology, Ministry of Public Security and the National Internet Information Office.

structuring them as well, in many cases leading to arbitrage around banking regulatory requirements (Awrey, 2015; Borst, 2013; Elliott & Yu, 2015; Li, 2016).

The rapid growth in China-targeted PE funds and firms entered a new, explosive phase in 2017 (Grant Thornton, 2018; Yamashita, 2018; Zhang et al, 2017). A Nikkei graphic in figure 1 below shows the pop in global [non-Asian] PE investment flows into all-Asia for the first five months of 2018 (Dealogic data) with more than two-thirds going to China alone. But China's regulatory issues arise less through these global PE investors [which are mostly USD-based] than through local PE firms [RMB-based]. "Initially, many of these [local PE] managers were opportunists with little PE experience chasing pre-IPO deals," (Zhang et al, 2017: 7), and there is a large and growing "dry powder" overhang in RMB-based PE firms' accounts. Concerns about the bubble forming in local PE firms increased with sudden inflows into USD- and RMB-based PE funds in 2017, and those concerns remain today.

Insert Figure 1 around here

Under a 2014 PRC State Council notice analyzing shadow banking, WMP and PE would both be categorized as "inadequately supervised activities of licensed financial institutions", which constitutes the lowest risk of three categorizations (see Tsai, 2016). The considerable informational opacity about these investments concerns Chinese regulators, who are actively developing ways to capture more information about WMPs, private equity and other shadow banking channels.

But as Tsai (2016: 9) notes, these channels fill unmet needs in financial intermediation:

> An innovative array of informal financing mechanisms has flourished, mainly in response to unmet demand for financial services, but also in response to arbitrage opportunities due to financial repression[,]

which she sees as the enforced low levels of deposit interest paid to depositors in the formal banking system. What to include in shadow banking is, of course, subject to interpretation. Although the FSB takes a narrower view by defining shadow banking as creating "risks such as maturity transformation, liquidity transformation or leverage" (quoted in Li, 2016: 1), this paper adopts a broader definition which includes P2P and informal interpersonal lending in the broad category of shadow banking.[10] This broader definition can be justified because the interaction

[10] Noting the links between P2Ps and WMP operations, Li & Yi (2016) and others agree with this interpretation. Tsai (2016) provides an excellent discussion of why this broader definition should apply in the Chinese case.

between formal banking institutions and informal interpersonal lending such as P2P and folk-lending serves to create these risks for banks (see also Awrey, 2015; Borst, 2013; Li & Yi, 2016). In all cases of shadow banking, the Chinese government is seeking to channel, restrain or stop their operations, and to purposefully move flows out of the shadows.[11]

Informal lending is quite important to the Chinese economy. Before the rise of P2P, WMP and other more institutionalized forms of shadow banking, Jianjun Li estimated in 2005 that informal lending aggregated to roughly 28% of formal institutions' total lending (cited in Tsai, 2009, fn.8: 85). Informal lending and smaller banks still dominate SME financing, and here monitoring is especially weak; the 2014 PRC State Council notice categorized these channels among the riskiest, as "unlicensed and unregulated" (Tsai, 2016).

2.1 Monitoring in Financial Intermediation Theory

Placing Chinese finance in a broader comparative financial intermediation framework helps to sketch out these monitoring issues. A key part of banking relationships rests on the idea that banks and other financial intermediaries are tasked with a responsibility to monitor financial contracts (Diamond, 1984), and that loan and debt covenants are constructed around this monitoring function (Krasa & Villamil, 1992; Rajan & Winton, 1995). As financial intermediaries are not simply *contractually* obligated to monitor their clients, the concept of an additional *social* obligation is termed delegated monitoring. Under delegated monitoring, financial intermediaries, which are privy to private information or information which is costly to obtain and use, signal information about their clients' financial health through their actions.

By acting on this information, financial institutions provide signals to other economic actors, governments, individuals and interested observers, thereby fulfilling their social obligations as financial intermediaries (Allen, 2001; Diamond, 1984; Schumpeter, 1939). Seen from this western perspective, Chinese banks and other financial intermediaries lag in fulfilling this social responsibility (Selmier, 2017a). Chinese government officials have been uncomfortable with delegating governance authority to private actors, in part because of the implicit devolution of political power to those actors (Selmier, 2016; 2017a; Yang, G.B., 2014). A raging, long-term debate continues as to whether and to what extent western financial intermediaries honor this social obligation.

[11] Shadow banking is a constant source of systemic risk in many financial systems.

Overseeing bankers and managing their relationships with clients requires overcoming soft budget constraints, which "exist when the strict relationship between expenditure and earnings [of the lending target] has been relaxed" (Kornai, 1986). Some scholars have applied this to Chinese banking, arguing that a Chinese banker may become too personally close to a client, and so extend funds when it may be more prudent to withhold funds or demand repayment (Bailey, Huang & Yang, 2011; Qian, 1994; Selmier, 2016). In Chinese banking, such lax credit policies are termed "lending new to repay old"[12] (Cousin, 2007: 88), often used to describe a reluctance of a state-owned bank to restrain lending to state-owned enterprises. This usage shows that problems theoretically associated with smaller banks may exist in large SOE banks where strong personal relationships and political pressure lead to credit problems (Allen et al, 2005; Luo, 2016; Tan, 2013).

Through their actions as capital and information aggregators and disbursers, bankers, financiers and financial intermediaries become key nodes in both capital and informational networks (Allen & Babus, 2009; Allen & Santomero, 1997). Shifting information and capital between one party and another requires trust in these relationships, but the nature of financial networks means that some clients may get more than others through privileged connections, political and social power, and already established information and capital channels [whose path dependencies influence both connections and power]. Monitoring, whether by financial intermediaries or by governments, may fail or break down here through three mechanisms: first, beneficiaries of bankers' largess purposefully hide their benefits. Second, informational distortions arise from the information which is released because the pareto-efficient recipient of additional capital did not receive it, but rather the better-connected actor received the capital. And third, related to this, smaller and medium firms (SMEs) are typically left out.

Perversely, the smaller the borrower or financial intermediary, usually the more reliant they become on direct social network linkages to obtain or disburse capital.[13] This is not to say borrowers benefit from their strong position in these networks, but rather than they are driven to

[12] "借新还旧" - Jie xin hai jiu.

[13] There is also a strong argument that a bank which grows to a large size cannot remain competitive in relationship banking because the tacit knowledge gathered through contacts cannot be competitively analyzed, managed, and used by larger banks. Thus, it has been argued that relationship banking functions better through smaller banks, because smaller banks can more effectively control costs, oversee their bankers, and manage interpersonal relationships. This has been termed the "small bank advantage" (Berger & Udell, 1992, 2006; Boot and Marinč, 2008: 1190-1; Zhang, 2002).

utilize smaller networks in order to obtain capital. There are at least three factors driving this reliance: *first*, capital which is raised through social networks and information is often shared only through these social networks. *Second*, capital is often allocated to clients known within a social network due to costs and limited scope of the firm, which means that *third*, within a limited social network, a financial intermediary may more closely monitor potential and existing clients before, during, and after allocation of financial capital. But each of these factors also decrease broader information distribution of released disclosure of information obtained through monitoring, whether in the form of delegated monitoring as conceptualized in Western financial intermediation theory, or through other forms of monitoring.

2.2 Theoretically Mapping Financial Intermediation

Theoretically mapping financial intermediaries within the Chinese financial services industry by their *industrial organization level* characteristics and by their attributes at an *operating level* provides a comparative basis for analyzing monitoring challenges which face Chinese policymakers. Table 2 provides a stylistic view on these two levels across five common sub-categories of financial institutions: large bank, small bank, savings cooperative, "shadow" bank and loans-between-people as folk-lending is often called. It will quickly become apparent that shadow banking defies categorization as it is quite difficult to map into these industrial organization level characteristics; variations of shadow banking fall across the spectrums shown in Table 2 but, for discussion's sake, I place shadow banking toward the less-regulated end of the table.

As we move from right to left across these categories, the size and scope of each institutional form generally grows in breadth and depth. *Increasing capital base* and *increasing geographic spread* capture this growth and the implicit influence of the financial intermediary category, with one important caveat. As noted above, *"shadow" banking* is a broad term often used to describe banking operations, products or institutions which explicitly fall outside banking regulation (Awrey, 2015; Borst, 2013; Elliott & Yu, 2015; Li, 2016). However, sometimes financial institutions engaged in shadow banking are large in size, further complicating policy options. P2Ps were categorized as shadow banking operations; some Chinese P2Ps have grown to enormous size. The CBRC announced in August, 2016, that it would recognize P2P as information intermediaries rather than capital intermediaries (CBRC, 2016; Gruin, 2017; Wildau,

2017), but one we may wonder where P2Ps should be place as they still act as financial intermediaries. Generally, we can argue that *increasing loan size/capital commitment* scales from right to left. Large banks and many smaller banks are in business to structure commercial loans, while savings cooperatives exist for their members, generally, and these members are usually individuals. Here again *shadow banks* may commit to smaller loans or, in case of PE firms, may also become involved in commercial loans and large-scale merchant and investment banking.

Insert Table 2 about here

Moving left across the top half of Table 2 might be considered as moving toward increasing "formality" of a financial intermediary's institutional nature. Regulation and administration grow more complex as one progresses toward the left but, again, shadow banks are difficult to type. The bottom half of Table 2 shows that at the operating level, a trade-off between the left-side formality of financial contracts, administrative hierarchy and regulatory requirements is "compensated" on the right side through higher interest rates, increased dependence on interpersonal relationships rather than contractual relationships, and looser organizational structures. Generally, the smaller the intermediary, the more scope for interpersonal relationships and the greater the scale of the soft data gathered through these relationships. These interpersonal relationships develop into social network linkages.

Interest rates levels are affected by the nature of the client base. Most individuals and many SMEs in China tend to be served on the right side of Table 2 (Allen et al, 2005; Guo & Liu, 2002; Tsai, 2016) as they face numerous obstacles in obtaining finance, and so must often look to informal, interpersonal financing channels (Fu & Bao, 2011; Tsai, 2002). In part because these financial intermediaries are less formal, usually smaller in size, and increasing in the importance of social capital to their operations, they charge higher interest rates.

3. Smaller Financing Levels are Especially Difficult to Monitor

Better to be a chicken's lips than an ox's hips [鸡口牛后]. author's playful translation.

This Chinese folk saying [俗语] has been used to express love for personal freedom in its various forms in Chinese society. Sometimes it is used to explain the desire to say what one thinks without self-censorship; at other times it expresses a wish to be entrepreneurial – at the front of a

chicken-sized company - rather than to work toward the bottom of a large company the size of a huge ox. The first indicates informational freedom; the second, economic freedom. Entrepreneurs need to obtain both forms of freedom through accessing informational and financial capital to start and run their SMEs. Financial institutions engaged in monitoring must also obtain both forms of capital in order to operate.

As with SMEs the world over (Beck & Demirguc-Kunt, 2006; Berger & Udell, 1992, 2006), Chinese SMEs find it difficult to obtain financing (Guo & Liu, 2002; Tanaka & Molnar, 2008). Their size, shorter histories, sparse accounting records and elevated failure rates significantly increase the interest rates they must pay (Lin & Chen 2012; Tanaka & Molnar, 2008; Zhang, 2002). Chinese banks - both large and small - consider SMEs riskier, and the seasonality of their demand for funds and their smaller loan volumes make them less attractive as clients (Bailey, Huang & Yang, 2011; Fu & Bao, 2011; Guo & Liu, 2002). In China, smaller, local financial intermediaries must often get approval through their supervising banks, making SMEs less willing to wait for fund disbursement through formal channels (Lin & Chen 2012: 9; also Tanaka & Molnar, 2008). Many SMEs and entrepreneurs came to rely on folk-lending rather than obtaining capital through banks, although loans obtained through folk-lending typically required a much higher interest rate (Shi & Ye, 2011; Tsai, 2002, 2016; Zhang, 2002). In the last decade, they also sourced capital through P2Ps. Both folk-lending and some P2P transactions have been nearly opaque in informational and monitoring terms (Fong, 2018; Tsai, 2002, 2009; Selmier, 2018a; Shi & Ye, 2001).

The simplest folk-lending transactions involved merely a lender and borrower who knew each other (Jiang, 2009; Shi & Ye, 2002; Tsai, 2009), where the lender provided both capital and *danbao* [担保], which simply means "carrying guarantee." But over time the lending function and *danbao* separated in some transactions, as a third party came in to assume *danbao* by providing a form of assurance to the lender/capital-supplier for a fee. *Danbao* "came to be seen as a separable financial good which could be purchased, lessening or even removing the moral constraint which came through interpersonal relationship" (Selmier, 2017a: 185). As China-wide networks of folk-lending developed, syndication arrangements known as *baotuan* [保团] were structured in which a group of individuals pooled capital to lend or to invest for speculative purposes (Selmier, 2017a; 2018). *Danbao* in such syndications might be held by the group or a

member of the group, and origination fees were sometimes paid to a facilitator or a member of the *baotuan*.

Network risk expanded through chains of folk-lending arrangements called *lianbao* [连保]. *Lianbao* [described in Figure 2] constitute lending linkages wherein the guarantor for a borrower is herself a borrower from another. As numbers of *lianbao* linkages multiplied, borrowers, lenders and officials became increasingly unaware of who held *danbao* for whom. Selmier (2018a: 80) describes the systemic risk resulting from these complex linkages in Wenzhou, the epicenter of Chinese folk-lending, as "countless spider webs in an old barn, interlinked and difficult to pull apart without destroying all the webs." As "no one knew where the risk was in the system,"[14] lenders, borrowers and government officials were caught up in a spiral of debt and default when the financial crisis hit.

Insert Figure 2 around here

The rise of WMP and P2P enabled the capital-endowed access to alternative channels in which to invest their money and enabled capital-requiring individuals and SMEs to tap these alternative channels. Growth in the P2P channel exploded in China in the five years to 2016 (Caijing, 2013: *Economist*, 2016; Li & Yi, 2016). There were roughly 4000 P2Ps by year-end 2015. The growth in P2P lending has been astounding and was estimated to be nearly $1 trillion USD by 2015 in the total channel, as can be seen in Figure 3 below, which also predicts future P2P lending.

Insert Figure 3 about here

Some P2P operations were formed through partnerships with traditional banks. These partnerships tied into traditional financial institutions' capital, expertise and client networks, and allow the traditional financial institutions to expand into new product channels, thereby retaining existing client business which may go elsewhere, as well as capturing new client business and skirting regulatory restrictions. Prominent examples include Alibaba's joint venture with China Minsheng Bank (Gruin, 2017; Li & Yi, 2016) and Wenzhou Dai, which was established as a joint venture with several financial institutions (Wenzhou Dai, 2015; Selmier, 2018a).

[14] Selmier, 2018a, notes that nearly identical statements about systemic risk increasing through *lianbao* were made during his interviews in Wenzhou with many interviewees.

3.1. Informational opacity with Folk-lending and P2P leads to Governmental Worries

While folk-lending and P2P appear at first to be opposites – low-tech, face-to-face, simple promises versus internet-matched lending at distance – from a governance perspective they are quite similar in four ways: one, each produces six significant monitoring issues which arise from their disruptive, less-visible, and non-hierarchical nature (summarized in Table 3. For more details, see Selmier, 2017a). Two, both feed on investors with very high-risk tolerances, which increases chances of dangerous financial crises. Three, many participants have proven to be financially unsophisticated, especially before financial crises struck these channels in 2012 [folk-lending] and 2015 [P2P]. And four, their informational opacity provided frightening prospects for local, provincial and national Chinese government institutions (these four ways summarized from Chen, Hu, Lou & Yong, 2015; Economist, 2016; Elliott & Yu, 2015; Jiang, 2009; PBoC, 2012; Selmier, 2017a, 2018a). While folk-lending and P2P have broadened and deepened financial inclusion in China (Agarwal, Li, Liu & Zhang, 2015; Jiang, 2009; PBoC, 2012; Tsai, 2017), each channel has also deepened and made more volatile China's boom/bust cycles by encouraging real estate speculation, inflating stock market bubbles, and even financing criminal activity (Economist, 2016; PBoC, 2012; Wildau, 2017). Governance issues and the Chinese national government's worries can be seen through the lens of each channel's monitoring issues.

Insert Table 3 about here

Until regulations were tightened and a national regulatory body named in August of 2016, P2P platforms were under few requirements to monitor or provide information.[15] Given the geographically-distant relationship between capital providers and capital requirers, many P2Ps ignored any implicit monitoring obligations although they acted like banks by taking in and then allocating capital based on P2P management decisions rather than following the expressed preferences of capital providers (Economist, 2016; Selmier, 2018a; Wildau, 2017). With some P2P platforms lacking the skill set or desire to properly allocate capital and then monitor lent funds, the system suffered from inherent instability: providers of capital often followed fashion in lending decisions, and some P2Ps' managers took flight upon failure or having embezzled funds (Chen, Hu, Lou & Yong, 2015; Economist, 2016; Gruin, 2017).

[15] Agarwal, Li, Liu & Zhang (2015) argue that if P2P are required to implement personal guarantee covenants this would help alleviate this monitoring problem.

The folk-lending channel's informal nature and quasi-legal status[16] made it nearly impossible to calculate, track, register or manage the amount of capital in the system. Because enforcement was difficult, capital-providers' optimal risk management policy was to keep privileged information private by either not divulging problematic borrowers or by trying to convince other capital-providers to lend to troubled credits and so bail them out. Credit contraction within the channel could be, to borrow from Hobbes, "nasty, brutish and short" because intermediaries may have little capital, they may be called upon to suddenly repay their own loans, or they may simply find another investment and refuse to roll over the loan (summarized from Jiang, 2009; PBoC, 2012; Shi & Ye, 2001; Tsai, 2002).

Chinese national government policy reactions to the respective crises in both channels were on display in Wenzhou, the center for Chinese folk-lending (Guo & Liu, 2002; Liu, 1992; Shi & Ye, 2001; Tsai, 2002) and a major center for P2P (Caijing, 2013; Selmier, 2017a; 2018a). To address issues in the folk-lending channel, the national, provincial and Wenzhou Municipal governments jointly initiated China's first and only set of complete financial reform policies (金融综合改革), including the establishment of several public institutions tasked with financial intermediation and investment (PBoC, 2012; Qin, Xu & Zhang, 2014; Selmier, 2018a). A key policy of the complete financial reform in Wenzhou was to establish the Wenzhou Private Lending Registration Service Center to register folk-lending deals, but this effort has not been very successful in terms of improving financial monitoring.[17]

The CBRC's decision to recognize P2P as information intermediaries rested in part on Wenzhou's reputation as the Wild West of P2P operations (See Selmier, 2018a, for details). Each reaction underlines Chinese government officials' reluctance to delegate private monitoring to financial intermediaries, which would effectively transfer some governance power (Selmier, 2016, 2017a; Yang, G.B., 2014). But the respective reactions also show a shift toward attempting to capture more data through either government institutions, or through the emergence of a massive new program to monitor on-line transactions through big data analytics, which Gruin (2017) describes as an "algorithmic [financial] governance" system.

[16] Jiang (2009: 29) explains::"Most informal financing activities are based only on an oral agreement and lack collateral, while even those having a written contract are weakly protected by the legal system since informal finance is still an underground activity… moral constraints are the only type of constraint that prevails."

[17] Because reporting is voluntary, suspicions about the amounts, timeliness and network linkages were expressed by many of the interviewees in Selmier, 2018a: 76, 80-81.

4. Motivations behind the New Model of Financial Monitoring

As with all governments, Chinese government officials are concerned about tax evasion and fraud where lending and capital flows are unrecorded. Government agencies' monitoring of entrepreneurs, speculators and perhaps criminal activity is a powerful form of informational control as well as capital control. Informational obscurity has long been a problem with capital flows in China's shadow banking sector, and the level of informational opacity varies across the different financial channels (Tsai, 2016). With WMP, amounts invested are reported, but some assets are likely to be purposefully misclassified to report a lower-risk asset while capturing higher rates of return above what lower-risk asset classes may return. With folk-lending, some P2P channels, some PWM products and parts of PE, there has been considerable informational opacity. The SCS provides a path toward successfully controlling and monitoring most of these flows as well as capturing more information through each channel.

But the SCS provides much more than this, starting from the perspective of financial monitoring of credit and expanding it toward a broader goal. As Liang and colleagues (2018: 2) note:

> By 2020, the Chinese government aims to score the "creditworthiness" and "trustworthiness" of each individual and organizational actor by a computational score based on their historical and ongoing social and economic activities.

In the modern era of financialization, metrics for "creditworthiness" and "trustworthiness" have greater meaning as the necessity of credit access and the value of a trustworthy reputation becomes more important and quantitative measures of each metric more transparent. Reputation, trust and governance of capital-demanders and suppliers is more tightly tied to macro-stability of any country's financial sector; financial sectors of developed and most developing countries are increasingly important to each country's economic health and its society's happiness. Credit has become the key to modern economic life. So the historical progression over several decades from credit scoring toward the more-encompassing nature of the SCS is not only unsurprising (Chorzempa, et al, 2018; Dai, 2018), but perhaps a natural progression. Dai (2018) has argued that SCS moves China toward the construction of a "reputation state" in which reputation is measured and monitored through government organizations. At a personal consumer level, the use of P2P data to calculate credit scores is not only widespread now (Chorzempa, et al, 2018; Li, Chen & Zeng, 2018; Liang et al, 2018) but even sought out by many consumers who are incentivized to actively manage their credit scores and reputation (Hvistendahl, 2017).

Active management of individual and organizational reputation – through credit scoring – shows the power of the SCS as an organ of *dataveillance*. Dataveillance is the "systematic monitoring of people or groups, by means of personal data systems in order to regulate or govern their behavior" (Degli Esposti, 2014: 209). While some have argued that this power of SCS is a high-tech form of the older, often feared Dang'an (档案) system of personal records, this claim oversimplifies, casts a dark shadow upon the SCS which may not be fully warranted, and misses the important point that credit and reputation are managed through dataveillance in many countries outside China. What is unique about the SCS is not the level of data collected in order to monitor, but the centralization and manipulation of that data within government organizations (Chorzempa, et al, 2018; Dai, 2018. For additional American examples see Degli Esposti, 2014).

Monitoring in other countries now makes extensive use of big data in the same ways that the SCS is proposing to do. The US is a prime example of how private data is recorded through observation, the actors then identified and tracked, the datasets analyzed and, in many cases, attempts are made to manipulate the behavior of the individuals and organizations whose data was recorded and analyzed (Dai, 2018; Degli Esposti, 2014). The main differences revolve around dominant private actors in the US rather than government entities as in China. But such data is used not only for marketing but also for governance and even punishment (Dai, 2018: 10, 27-27; Liang et al, 2018). Important points of comparison in the US and in China revolve around similar uses of what Degli Esposti and others have termed analytical deputies (2014: 210, 217-19) who gather and crunch data for end users. Use of these analytical deputies, usually private firms, blur lines between public and private uses of big data.

Comparing financial monitoring in the Chinese and US financial systems also provides perspectives to consider how informational resources may empower the Chinese government and enable competition at national and global levels. At the domestic level, the Chinese government is seeking to retain control over the financial system, in part because Nick Lardy's comment in 1998 still rings true: the financial system remains "the last remaining powerful instrument through which the state and party directly influence resource allocation" (Lardy, 1998: 221). Table 4 sketches the Chinese government's prospects for strengthening financial intermediation monitoring and while attempting to govern capital and related information flows.

Insert Table 4 about here

At a global level, monitoring would be empowering to the Chinese government as capital and information resources may be directed or banned if information behind capital flows is captured. China, as well as other countries around the world, finds itself at a disadvantage compared with the United States' powerful position in monitoring and governing capital flows and projecting its regulatory reach internationally.

Insert Figure 4 about here

Figure 4 expands these ideas through a 2x2x2 "Financial Monitoring Cube", sketching the present state of Chinese and US financial monitoring and lending/capital flows policies. On a comparative basis the US government has a larger toolbox in that it retains leverage through the US dollar, can extend and project regulatory power overseas, and may rely on global American banks in some cases. The US wields a powerful set of tools with its capacities to engage or punish through both capital flows and regulatory reach. The New York financial hub is the world financial system's intermediating hub, as roughly 35% of global finance flows through New York.

China's financial hubs are still only regionally-powerful rather than globally powerful; China lacks capacity to extend influence through regulatory reach. The Chinese government is in a catch-up mode, seeking international leverage through extending the RMB, but the Chinese government continues to restrain Chinese SOE banks from global expansion.[18] At a global level, China is seeking secure development of its domestic financial industry with some extension of its core financial power through a strong foundation of this secure financial industry. It is likely that extension internationally will run into issues; the SCS is running into compliance issues in Europe with data privacy laws tied to the General Data Protection Regulation, as Chinese financial firms and banks process significant transactions in Europe and capture personal data (Chorzempa, et al, 2018; Dai, 2018). But it is likely that these snags can be worked out, and that China will be able to develop a powerful, controlled financial system with the government itself playing the central role in financial intermediation monitoring.

[18] This is analyzed in more detail in Selmier, 2018b.

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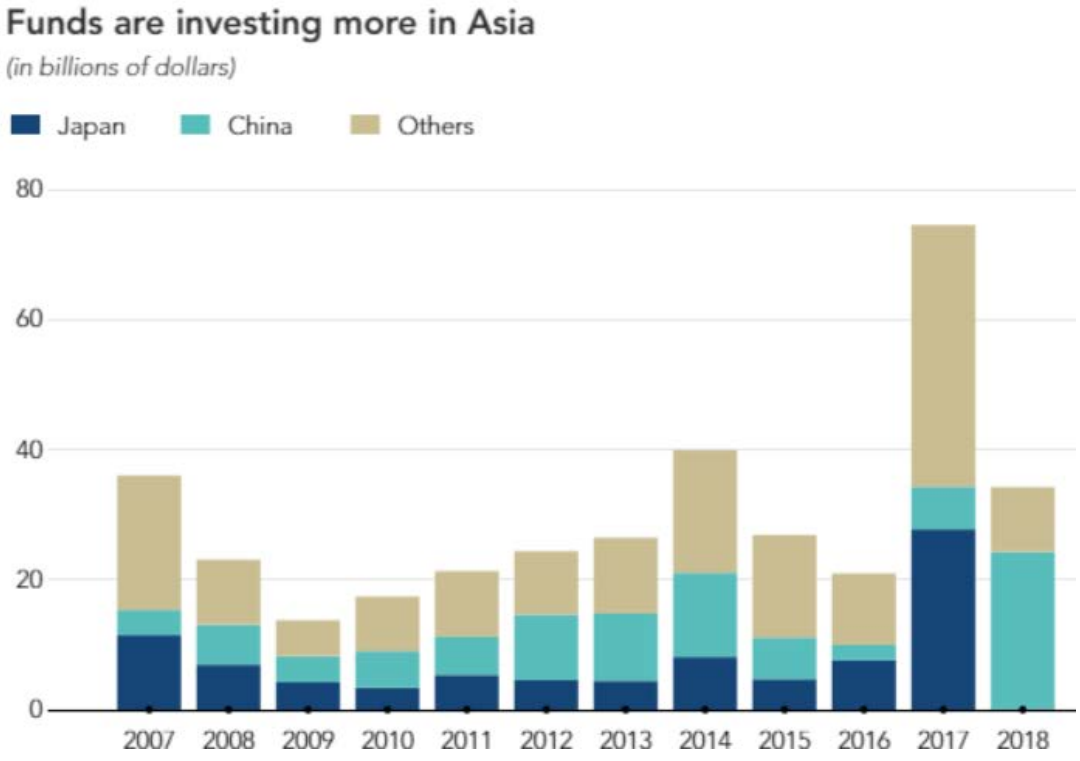
Table 1: Chinese Formal Financial System Sector Breakdown [asset basis]

	2003	***2004***	***2005***	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***
Policy banks & the China Development Bank	7.7%	7.6%	7.8%	7.9%	8.1%	8.9%	8.7%	8.0%	8.2%	8.4%	8.3%	9.1%	9.7%
Large commercial banks	58.0%	56.9%	56.1%	55.1%	53.7%	51.6%	51.3%	49.2%	47.3%	44.9%	43.3%	41.2%	39.3%
Joint-stock commercial banks	10.7%	11.5%	11.9%	12.4%	13.7%	14.0%	14.9%	15.6%	16.2%	17.6%	17.8%	18.2%	18.6%
City commercial banks	5.3%	5.4%	5.4%	5.9%	6.3%	6.5%	7.1%	8.2%	8.8%	9.2%	10.0%	10.5%	11.4%
Rural commercial banks	0.1%	0.2%	0.8%	1.1%	1.1%	1.5%	2.3%	2.9%	3.8%	4.7%	5.6%	6.7%	7.7%
Rural cooperative banks	n/a	n/a	0.7%	1.1%	1.2%	1.6%	1.6%	1.6%	1.2%	1.0%	0.8%	0.6%	0.4%
Urban credit cooperatives	0.5%	0.6%	0.5%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	n/a	n/a	n/a	n/a
Rural credit cooperatives	9.6%	9.7%	8.4%	7.9%	8.2%	8.3%	6.9%	6.7%	6.4%	6.0%	5.7%	5.1%	4.3%
Non-bank financial institutions [NBFIs]	3.3%	2.8%	2.7%	2.4%	1.8%	1.9%	1.9%	2.2%	2.3%	2.4%	2.6%	2.9%	3.3%
Foreign banks	1.5%	1.8%	1.9%	2.1%	2.4%	2.1%	1.7%	1.8%	1.9%	1.8%	1.7%	1.6%	1.3%
New-type rural financial institutions & Postal Savings Bank	3.2%	3.4%	3.7%	3.7%	3.3%	3.5%	3.4%	3.7%	3.8%	4.0%	4.1%	4.1%	4.2%
Total Banking institutions' assets [*RMB billion*]	276584	315990	374697	439500	531160	631515	795146	953053	1132873	1336224	1513547	1723355	1993454

Notes: Raw data from China Banking Regulatory Commission Annual Report 2015: 192. Total banking institutions assets measured in RMB billions.

Figure 1: Global [non-Asian] Private Equity Inward Investment Flows



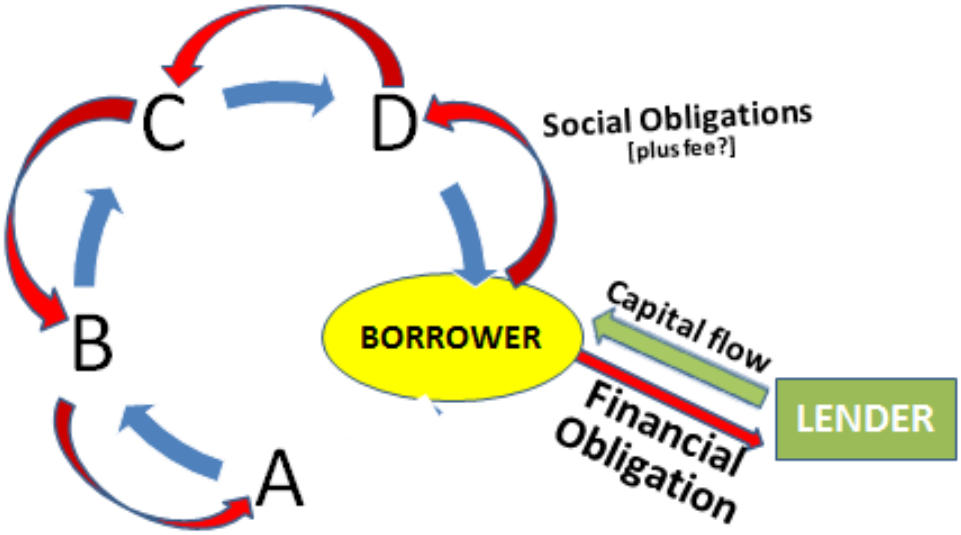
Through May

Source: Yamashita, 2018, ***Asia Nikkei*** graphic.

Table 2: Interpersonal Financial Intermediation Characteristics				
Large Bank	**Small Bank**	**Savings Cooperative**	**"Shadow" Bank**	**Loans-between-People**
Industrial Organization Level				
🡐 Increasing Capital Base				
🡐 Increasing Geographic Spread				
🡐 Increasing loan size/capital commitment *[generally]*				
🡐 "Formal" nature: *regulation, administrative development,*				
Large Bank	**Small Bank**	**Savings Cooperative**	**"Shadow" Bank**	**Loans-between-People**
Operating Level				
Increasing Interest Rates charged 🡒				
Increasing dependence on interpersonal relationships 🡒				
Increasing level of informational opacity 🡒				
Less structured, less hierarchical monitoring 🡒				
Notes: Author's conception.				

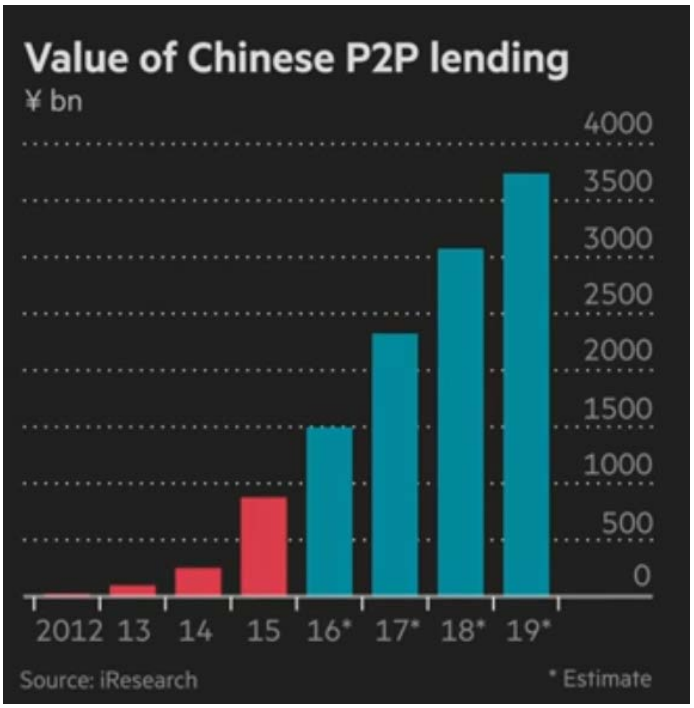
Table 3: Six Monitoring Problems Arising under Peer-to-peer On-line Lending Platforms [*P2P 平台*] and Folk-lending [*民间借贷*]		
P2P Monitoring Problem		**Folk-lending Monitoring Problem**
1	Gates on removal of capital mean dependence of P2P for monitoring	Capital in loan channel unknown
2	Independent verification of monitored information difficult	Imminently callable or non-rollable
3	Even weaker moral constraints	No hard constraints
4	Systemic weakness due to immaturity, information asymmetry and "runaways"	Exit or find another to bail out position rather than monitor
5	Low bar to entry into lending channel	Low bar to entry into lending channel
6	P2Ps seemed to act like real banks	Unstable system in part due to network characteristics
Source: Author's conception, abstracted and altered from Selmier, 2017a, Tables 8.3 (183) and 8.4 (187)		

Figure 2: Guarantor Circle [连保- Lián bǎo]



Source: Figure 6 from Selmier, 2018a: 61.

Figure 3: Growth and Future Projection of P2P Lending.



Source: Wildau, 2017, ***Financial Times*** graphics.

Table 4: Chinese Views of Financial System monitoring and Capital Flows		
Tension between	**National**	**Global**
Lending/K flows as	Evasion	Empowering resource
Monitoring as	Info control	Info empowerment

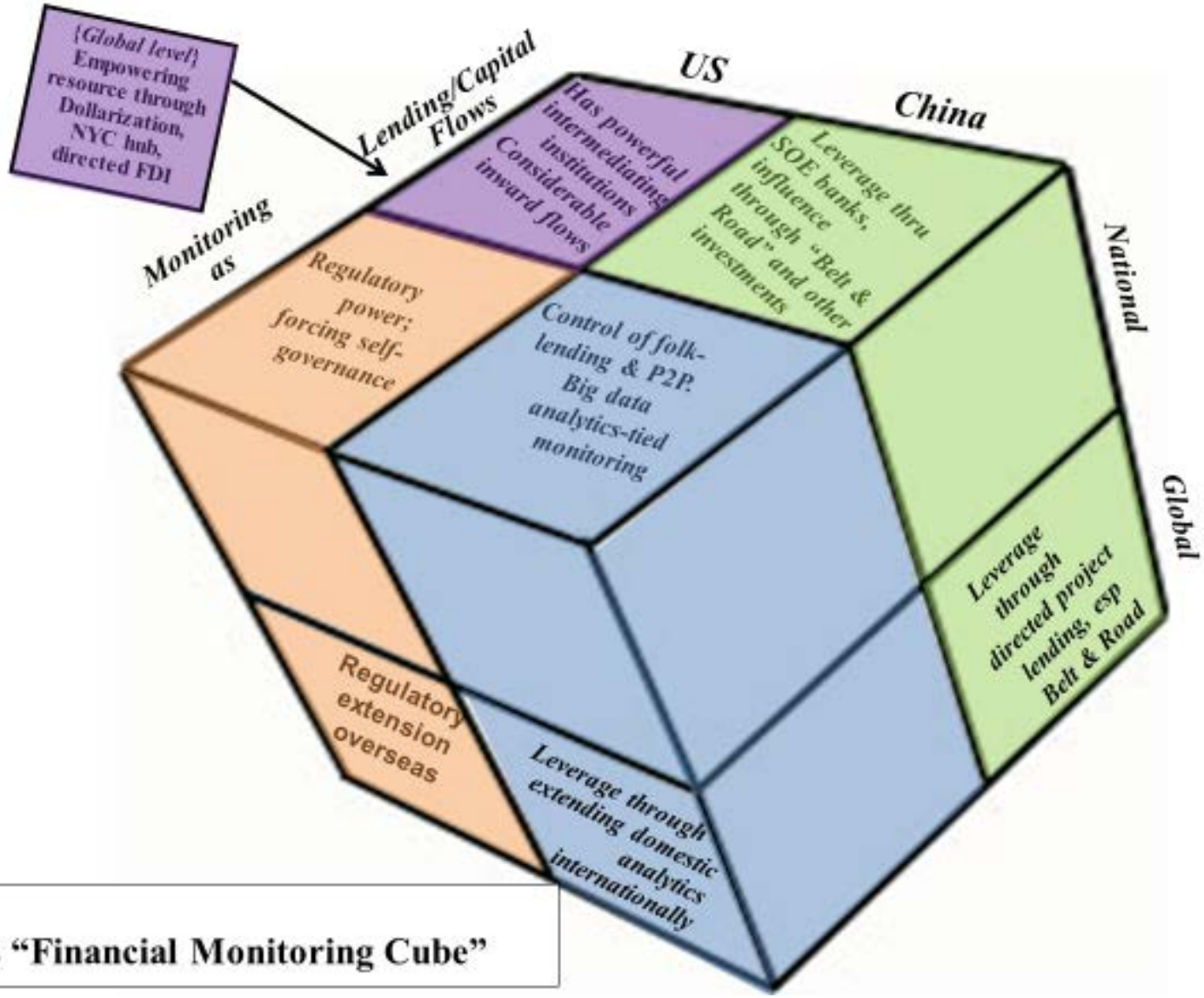


Figure 4:
2 x 2 x 2 "Financial Monitoring Cube"