When Formal Finance Meets the Informal – the Case of Wenzhou

Abstract

We examine the causes of the financial crisis of 2011 in the Chinese city of Wenzhou. While the crisis of 2011 has been attributed to weaknesses in the system of informal finance, including predatory interest rates, we suggest that the roots of the failure lay in the way that the formal and informal systems became intertwined in the period following the global financial crisis of 2008 and the expansionary monetary policy initiated by the Chinese authorities to counter its effects. We explore the effects of the over-supply of formal credit in this period and the encouragement of group lending, a practice relatively unknown prior to 2008, and which magnified the effects of the crisis. We suggest that the lesson to draw from Wenzhou is not that informal finance is inherently more instable or inefficient than formal finance, but that encounters between formal and informal finance can trigger instabilities in both.

Keywords

Informal finance, formal credit, law and finance, Wenzhou crisis, monetary policy, group lending

Introduction

The finance-growth nexus has attracted a great deal of attention ever since the foundational work of Schumpeter.[1] Empirical evidence from cross-country, within-country and cross-industry data tells a consistent story: financial development is associated with faster economic growth and improved allocative efficiency.[2] Among developing countries, however, China is often cited as a counter example to the mainstream finance-growth paradigm. China's private sector has managed to achieve remarkable growth since the late 1970s despite being effectively shut out of access to the formal financial system, which is dominated by state-owned banks lending to state-owned enterprises.[3] A number of influential studies, including those by Tsai[4]and Allen et al.,[5] have argued that this is due to the significant role played by informal finance in filling the funding gap.

Informal finance does not simply mean the absence of the formal. In China, as elsewhere, it is characterized by interpersonal transactions occurring among a small number of actors who know each other and deal on a repeated basis. Personal knowledge about the capabilities and trustworthiness of the parties saves on the search, monitoring and verification costs associated with impersonal exchange in the formal or regulated sector. The risk of being excluded from the group also provides strong incentives for parties not to cheat.[6] Despite the absence of formal contracts and external regulation, the

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[1] Schumpeter (1934).
[2] King and Levine (1993); Rajan and Zingales (1998); Guiso, Sapienza and Zingales (2004); Beck, Dmirguc-Kunt, Laeven and Levine (2008).
[3] Chen(2013); Allen, Qian and Gu(2017).
[4] Tsai (2002).
[5] Allen, Qian and Qian (2005),(2019).
[6] Greif (2006).

default rate in some types of informal finance, such as rotating savings and credit associations (ROSCAs), can be remarkably low.[7]

The downside of informality is that its efficiencies will inevitably decline with the increasing size of the group.[8] Since informal mechanisms have no effect on non-members, it is difficult for interpersonal exchanges to realize economies of scale.[9] Informal finance is no exception to these limits. The expansion of networks inevitably increases information asymmetries among members and weakens the effectiveness of group monitoring. Where the potential individual gains of reneging are sufficiently large or where, for whatever reason, participants are prepared to discount the risk of future sanctions, systems will break down.[10]

Although the literature on informal finance is growing, it is still rudimentary. So far, the overwhelming majority of the studies focus on assessing evidence of causality between informal finance and economic growth,[11] and on theorizing the nature of informal finance.[12] Little attention has been paid to the relationship between the formal and informal financial sectors. In the few studies to have addressed this issue, it is commonly examined from a macro level, which leads researchers to conclude that informal finance is either a complement to or substitute for formal finance, or both.[13] An assumption in these studies is that the formal and informal are two separated or segmented financial systems, operating in different orbits, with no interaction between them. This assumption may indeed hold in many cases, but not always. It forecloses discussion of what happens when the two systems interconnect. To our knowledge, this issue has not been systematically examined at the micro level. The Wenzhou financial crisis of 2011 provides us with an opportunity to do so.

Wenzhou has a reputation as the birthplace of China's private sector economy and is also well known as a centre of informal finance. In 2011 it was badly hit by a regional financial crisis. This crisis is widely believed to have been caused by the collapse of Wenzhou's informal financial market, and has therefore been referred as the 'informal financial crisis' (minjian jinrong weiji 民间金融危机). The crisis drew a great deal of attention from policy makers in China and their interventions led to a pilot reform in 2012.

Numerous studies have been written in an attempt to account for the Wenzhou crisis and it has been the subject of extensive debate among policy makers within China. But as we will go on to show, the crisis is in danger of being misunderstood. It is not a typical failure of an informal financial market; nor do its root causes lie only in the formal system. The key to understanding the crisis, we suggest, lies in the interaction of the formal with the informal.

To develop this argument we draw on a range of documentary sources, including official publications and reports from the financial press, and on interviews we carried out in Wenzhou and other Chinese cities, on the theme of informal finance, in the period between April 2017 and December 2018. Altogether 27 interviews and focus groups were conducted with a total of 57 individual respondents.

[7] Geertz (1962); Ardener (1964); Bouman, (1995).
[8] Deakin, Gindis, Hodgson, Huang and Pistor (2017).
[9] Stinchcombe(2001).
[10] Shi (2004); Zheng, Ye and Chen (2015).
[11] Allen, Qian and Qian (2005); Allen, Qian, Zhang and Zhao(2012).
[12] Stiglitz (1990); Allen, Qian and Xie (2019).
[13] Gupta and Chaudhari (1997); Guirkinger (2008); Ngalawa and Viegi (2013); Madestem(2014); Allen, Qian and Xie (2019).

The interviewees included officials, judges, and executives of financial and manufacturing firms, ten of whom were interviewed twice. The Wenzhou-based interviews are a subset of the larger sample and were conducted with ten individuals, among whom were included officials, judges and executives, over the course of two visits to the city, in September 2017 and December 2018. We draw principally on the Wenzhou interview material in our account of the Wenzhou model and crisis and also on our wider interviews in so far as they have a bearing on the crisis and on the theme of formality and informality of finance more generally in China.

The paper is structured as follows. Section 2 outlines the Wenzhou model and the role of informal finance in Wenzhou's economic growth. Section 3 then takes a closer look at explanations of the role of the formal and informal systems in Wenzhou financial crisis. Section 4 concludes.

Informal Finance and the Wenzhou Model

Wenzhou is a prefectural-level coastal city[14] located in Zhejiang province with a population of approximately 9 million. It has a number of distinctive features.[15] It is located in a mountainous region with little arable land. It received little investment from the state after 1949 due to its geographic location near the island of Taiwan. With the advent of economic reform in the late 1970s, Wenzhou was faced with fundamental problems in lifting itself out of poverty and backwardness. Nevertheless, since 1978, Wenzhou has achieved a particularly high growth rate, with its annual GDP per capita reaching twice the national average.[16] Wenzhou's developmental pattern, the so-called 'Wenzhou model', is characterized by household and small-enterprise based light industries and various specialized markets.[17]

Even compared to small and medium sized enterprises (SMEs) in other parts of China, SMEs in Wenzhou have been disadvantaged in their access to formal credit. The bank lending to GDP ratio in Wenzhou remained substantially below the national level up to 2005.[18] The absence of state investment and formal credits was met by Wenzhou's informal financial system. Along with its reputation of the birthplace of the private sector in China[19], Wenzhou has also long been recognized as the national capital of 'informal lending' (min jian jin rong 民间金融).

The role and importance of informal lending in Wenzhou economy has nevertheless changed over time. In the early stages of the reform process initiated after 1978, there was still a strong hostility to private enterprise even in Wenzhou, and informal lending equated to almost the entire amount of external financing. It is estimated that in the period 1980-1985, 95 per cent of capital flows took place outside

[14] A **prefectural-level city**, formerly known as **province-administrated city** from 1949 to 1983, is an administrative division of China, ranking below a province and above a county in China's administrative structure. Prefectural level cities form the second level of the administrative structure.
[15] Forster (1990).
[16] Qin, Xu and Zhang (2014), p22.
[17] Forster (1990); Bramall (1990).
[18] Qin, Xu and Zhang (2014), p22.
[19] On the Wenzhou model and the development of China's private sector, see e.g. Parris (1993); Fei (1986); Sonobe, Hu and Otsuka (2004)

the formal financial sector.[20] Bank lending to the private sector stood at 3.9 per cent of total bank credit in 1990 and had risen to only 6.9 per cent by 1996.[21]

As attitudes towards private ownership changed and the average size of Wenzhou enterprises increased, however, the flow of formal bank lending grew, leading to a relative decline in the importance of informal lending. Nonetheless, informal finance remains an essential part of the Wenzhou model and is deeply rooted in the practices of local communities. According to a report of the Wenzhou branch of the People's Bank of China (PBOC), at the end of 2011, external financing coming from the informal sector in Wenzhou stood at RMB 17 billion, accounting for 42.5 per cent of the total. A survey of 399 rural households in the wider Wenzhou region showed that 75 per cent of them were involved at some point in informal financing activities.[22]

While interpersonal relation and social networks (associated with the idea and practice of guanxi) remain important in China as a whole, social networks are highly dense in Wenzhou due to its geographic isolation and unique local dialect. This creates a rich soil for the emergence of informal finance. Wenzhou had a long history of informal financing before 1949 that was quickly revived following the economic reforms initiated after 1978.

Today there are a variety of forms of informal financing in Wenzhou, including ROSCAs (dao hui 倒会, a model which in its essence is centuries-old) to modern peer-to-peer ('P2P') lenders making use of platform technologies (although the latter are relatively limited in scope and most post-date the 2011 crisis). The Table below, based on Tsai,[23] arranges Wenzhou's different informal financing modes according to their degree of institutionalization.

Least Institutionalized	**Semi-Institutionalized**	**Institutionalized**
●Interest-free uncollateralized lending among friends, family & businesses ●Trade credit among businesses ●Underground money houses (with high interest rates)	●ROSCAs (hui) ●Non-governmental investment alliances ●Reciprocal loan guarantee networks ●Internet finance (emerged after 2007): crowd funding and P2P lending	●Microfinance / small loan companies ● Leasing companies ●Credit guarantee companies ●Pawnshops ●Trust & investment companies ●Mutual aid societies

Some modes of informal financing are more structured than others, but their operations are similarly reliant on local social networks. Borrowers are introduced and implicitly guaranteed by friends and relatives. Because of the depth of social ties, the system is highly efficient in mitigating information asymmetries and in keeping monitoring and enforcement costs to a minimum. Loans for millions of RMB can be arranged by a few phone calls, with no contract or collateral. A government report in 2010 reported that 71 per cent of enterprises in Wenzhou received credit from the informal lending market

[20] Liu (1992), p298.
[21] Shi and Ye (2001),p64.
[22] Qian (2008).
[23] Tsai (2015),p16.

without any guarantees and that 96 per cent of loans were paid back.[24] Our interviews tell a similar story, with the following a standard account:

> Regarding the contract, with informal finance most lending takes place between relatives or friends so they know each other and if they are aware of a difficulty they will not take steps to go to court. There is no written contract, but mutual help. The borrower might have lent to the lender in the past. So it's very informal, there is no need for the court.[25]

The following account of how one family-owned firm survived the crisis through reliance on informal lending (most were less fortunate) illustrates the exceptional flexibility of the system:

> On informal lending, I have some experience of it from friends and family during the crisis. At that time my husband could not borrow because he was the legal representative of the company and people were cautious about lending to the company but I borrowed from my female friends, 10 million RMB, with no receipt and no contract. [26]

Nevertheless, Wenzhou's informal financial sector is not immune from the weakness of informal institutions more generally. Prior to 2011, Wenzhou had experienced at least two crises, only on a much smaller scale. The best known one took place in 1986 and was caused by failures of local ROSCAs (hui). The role of ROSCAs was particularly important in the 1980s and they attracted a large number of participants. By 1986, it was estimated 95 per cent of Wenzhou households were engaged in hui-based lending. The efficiency of ROSCAs declines with the increasing size of the group. In the end, many of them had turned into Ponzi schemes and the entire ecosystem broke down. As a result, the municipal government took over the informal financial sector in the name of 'class struggle.' 25 ROSCA organizers committed suicide and some of their family members also became victims of violent creditors. [27]

The 1986 crisis came to be understood as a classical failure of informal institutions. At this point, the informal and formal financial sectors in Wenzhou were largely segmented. Each operated in its own domain, with little penetration or contagion between the two sectors.

Wenzhou's 'informal financial crisis' (minjian jinrong weiji 民间金融危机)

The nature of the 2011 crisis

The Wenzhou 2011 financial crisis was characterized by the virtual collapse (if only temporarily) of its private economy including its SME sector, resulting from the combined effects of an enterprise debt crisis and a system-wide informal finance crisis. It started in April 2011 and peaked in September of the same year. During this time, more than 100 business owners either disappeared, committed suicide or declared insolvency, repudiating debts worth around RMB 10 billion.[28] The authorities blamed 'usury' in the informal financial market overwhelming enterprises and triggering the crisis. Indeed, just prior to the crisis, the informal lending market seemed to exhibit obvious signs of 'irrational exuberance': 89 per cent of Wenzhou residents and 60 per cent of firms participated in informal lending, in a market valued

[24] People's Bank of China (2011).
[25] Interview with Judge, September (2017).
[26] Interview with manufacturing executive, December 2018.
[27] Tsai (2002)
[28] Zhao H, Koh G (2011)

at approximately RBM110 billion. Aggregated interest rates reached 22.4 per cent with short-term intra-firms loans at 43 per cent.[29]

Wenzhou's financial crisis had a huge impact on its wider economy. On a majority of economic indicators, Wenzhou ranked bottom for Zhejiang province for economic growth at this time.[30] In October 2011 then Premier Wen Jiabao visited Wenzhou to show the government's support for the city and in March 2012 the State Council approved a Wenzhou pilot scheme for financial reform aiming to legitimize and regulate informal financing.

The role of the formal financial sector in the origins of the crisis

Many attempts have made to account for the crisis since 2011. One set of arguments turns on the change in the central government's monetary policy between 2008 and 2011. This interpretation holds that the expansionary monetary policy implemented by the PBOC in 2008 led to an asset bubble in Wenzhou. When this burst following the tightening of the money supply in 2011, it brought the informal financial sector down with it.[31]

Another view is that the crisis was mainly the result of regulatory failure, or more simply the lack of regulation, in the informal finance sector.[32] A related explanation is that the crisis was due to the informal system reaching the inherent limits of interpersonal transactions, as traditional, relation-based governance mechanisms were no longer effective in ensuring contract enforcement.[33] These arguments, while undoubtedly providing useful insights into the crisis, nevertheless fail to capture its complexity.

This is because, unlike previous crises, the 2011 crisis was not a typical failure of informal institutions. Thanks to the loosening of monetary policy during 2008-2010, the previously segmented formal and informal financial systems started to interconnect, as the flow of formal credit to the previously excluded SME sector increased. However, as the central government's long-standing policy of financial repression continued during this period, this interconnection left the Wenzhou ecosystem as a whole in a highly precarious state. There are three dimensions to the role of formal finance in triggering the crisis in the informal sector: systematic mis-investments; predatory interest rates; and an influx of formal credit into the informal finance system.

Financial repression, monetary loosening and systematic mis-investment

The phenomenon of 'financial repression'[34] refers to laws and policies instituted in developing economies to control financial systems by preventing them from functioning at their full capacity.[35] In a seriously repressed financial system, the interest rate is kept artificially low by the state so that cheap loans become available to borrowers, a de facto tax on savers. A policy of financial repression has been implemented by the Chinese government since the establishment of the PRC in 1949. Banks had to comply with a floor for lending rates and a ceiling for deposits imposed by the PBOC (the floor was

[29] People's Bank of China (2011).
[30] Zhejiang Statistical Yearbook (2011), (2012), (2013).
[31] Xie, Ma and Li (2012); Shao (2014).
[32] Chen (2012).
[33] Zheng, Ye and Chen (2015), drawing on the analysis in Shi (2004).
[34] McKinnon (1973); Shaw (1973).
[35] Giovannini and Melo (1993).

removed in 2013 but the ceiling remains)[36]. This type of interest rate control means that the price of formal credit is not set by the market and is, in practice, severely distorted. An inevitable consequence of this distortion is a systemic misallocation of financial resources in formal markets. Allen et al. find that the size of China's banking sector is negatively related with economic growth.[37] Similarly, Brandt, Tombe and Zhu find that between 1985 and 2007, capital and labour misallocation lowered aggregate non-agricultural total factor productivity (TFP) by an average of 20 per cent, with capital misallocation accounting for more than half of the total loss.[38]

Prior to the 2011 crisis, however, Wenzhou's enterprises were largely immune from this systemic inefficiency, thanks, paradoxically, to their very lack of access to formal bank credit. Firms' investment decisions were guided by the informal market interest rates which were a much better reflection of firms' real costs of capital than official rates. This is not to say that private companies' investments were always efficient, but it is to suggest that there was a lower systemic risk of misallocation than in the case of the formal sector.

However, Wenzhou's immunity from the inefficiencies of the formal system was lost after 2008 as a result of the economic stimulus package introduced by the central government. As it was feared that the global financial crisis would lead to a significant decline in exports, in order to stimulate domestic demand and promote economic growth the Chinese government launched the 'four trillion yuan economic stimulus package'. As part of this package, the PBOC carried out a nominally 'moderate' but in practice unprecedented loosening of monetary policy. From September to the end of December 2008, the PBOC dropped the required reserve ratio four times, and the benchmark rate of financial institutions deposits and loans five times. The benchmark rates of one-year deposits and loans dropped from 4.14 per cent and 7.47 per cent to 2.25 per cent and 5.31 per cent, respectively. [39]

This sudden increase of credit in such a short period overcame the boundary which had operated between the formal and informal financial markets in Wenzhou. Banks realized that existing borrowers would be unable to absorb the sharply increased supply of credit and that new clients were urgently needed. In Wenzhou this led to a pouring in of formal credit to the SMEs which had been largely excluded from the banking finance up to that point. However, in the absence of interest rate liberalization, the systemic inefficiency of the formal financial system was now transmitted into the private sector. This transmission effect was particularly severe between 2008 and 2011 as the cost of formal credit for firms was further depressed by the loosening of monetary policy. While Wenzhou-based SMEs benefited from the expansion of credit, many of their investment decisions were misguided and doomed to fail, sooner or later.

The mis-investment trend was exacerbated by weak corporate governance within banks. Although the management of China's banks has improved in the past two decades, with many of them listing in domestic or overseas stock markets, the overall quality of corporate governance is still seen as below

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[36] It should be noted that in August 2019, the PBOC made a further step to liberalise the interest rate by promoting the Loan Prime Rate (LPR). The PBOC instructed banks to rework, between March and August 2020, all floating-rate loan contracts to refer to the one- and five-year LPRs instead of the previous benchmark loan rates. However, this reform does not affect our analysis which refers to the years 2008-2011.

[37] Allen, Qian and Qian (2005).

[38] Brandt, Tombe and Zhu(2013).

[39] People's Bank of China (2008).

standard. Two major factors account for this. One is state ownership. Although banks have gained some autonomy from the government, the change is still very limited. Banks are continually being used to carry out government policies of all kinds. At the same time, state ownership provides banks with an implicit guarantee against insolvency. Politicization and soft budget constraints undermine the foundation of corporate governance of banks. Another factor is lack of competition. Despite the rapid growth in the number of banks, effective competition is still lacking due to financial repression. The weakness of banks' governance systems was widely noticed in this crisis. In order to meet the assigned loan targets which link to bonuses and promotion, bank staff had to extend credits to new clients who were not qualified by established lending standards. To do this, banks either lowered the relevant standard, or found various ways (legal or illegal) to artificially enhance the creditworthiness of borrowers.

While financial repression leads to a systematic misallocation of financial resources, it does not follow that all enterprises making bad investment decisions will inevitably end up in insolvency. As long as low cost credit continues to flow in, firms can use new loans to repay the old ones, and there will be no immediate danger of insolvency. This is how many (and possibly most) Chinese SOEs survive. This channel is not similarly open to SMEs.

Faced with continuously rising inflation and a real estate bubble in 2010, the PBOC began to tighten monetary policy. From January 2010 to June 2011, the PBOC raised the required reserve ratio 12 times. In addition, in the first half of 2011, the PBOC raised benchmark rates successively three times. The tightening of monetary policy meant that a large proportion of existing borrowers were cut off from the formal system and the remaining ones had to bear higher costs. Wenzhou-based SMEs were among the most affected by this radical change of policy.

Between 2008 and 2010, many Wenzhou enterprises had expanded in response to the low costs of formal credit. Wenzhou-based firms were traditionally concentrated in light industry and had little or no experience in heavy or high tech industries. After 2008, however, many of them moved practically overnight into capital or technology-intensive industries, including real estate, solar energy, shipbuilding and mining, as low-cost loans became available. When the money supply was tightened in 2011, many of these investment projects were either unable to generate sufficient returns or were simply loss-making. The following account describes the process:

> The crisis in 2011 was closely related to the effects of monetary loosening led by central government after 2008. Monetary easing, providing liquidity to the enterprises, led to inefficiency of allocation. Many of these funds flowed into inefficient industries, firms which were meant to be upgrading but were not, so it was a case of low end, low return… All industries were expanding even the inefficient ones. Some could not make a return on their capital, they were struggling to pay the interest, but as long as central government continued with a loose monetary policy this wasn't a problem. But with the change of policy from central government in 2011, and supply side reforms to deal with overcapacity, the policy was one of deleveraging and the tightening of monetary policy. But there was still a problem with SOE banks. If these banks are told to reduce their lending quota the impact falls on the private sector not the SOE industrial firms. Wenzhou is dominated by the private sector and by manufacturing, some at the low end, so they were very hard hit. This was a sudden shift after several years of expansion. [40]

[40] Interview with judge, September (2017).

According to trade association statistics, the extent of investment losses in mining and photovoltaic industries reached RMB 20 billion and RMB 10 billion, respectively, at this time. [41] From April 2011, a number of large and medium-sized companies started to fall, triggering a wider corporate debt crisis. The XinTai Group, a glass manufacturer for nearly 20 years, went insolvent in September 2011, incurring a debt of approximately RMB 0.8 billion in bank loans and RMB 2.0 billion in informal loans. It had undertaken major investments in the photovoltaic industry after 2009. [42]

The domino effect

After April 2010, although a number of firms started to fail, their number was small compared with the total size of the Wenzhou private sector, which contained over 360,000 enterprises. So how could the insolvency of a small proportion of firms eventually led to a regional crisis? The answer lies in a domino effect caused by the practice group lending (lian bao 联保) in which the formal financial system played a major role.

As explained above, formal and informal financial systems in China were traditionally based on distinct mechanisms of impersonal (formal) and interpersonal (informal) lending. However, between 2008 and 2010, when banks were effectively forced to extend credits to SMEs, informal mechanisms were found to fill the formal institutional vacuum.

The principal informal institution used was so-called 'group lending' (lian bao 联保). The initial inspiration for this came from model initiated by the Grameen Bank in Bangladesh in the 1990s. In an idealized form of the Grameen model, borrowers are organized into groups of five to ten members. Lending is based on joint liability, or the idea that a second member of the group cannot get a loan until the first is paid back, thereby creating an incentive for 'peer monitoring.' Because borrowers all live in the same part of the village, they have tacit knowledge of other group members. But they are not related by kin, and so less likely to be incentivized into concealing defaults.[43]

Group lending was introduced into China in January 2000. It was first applied to rural households via a PBOC 'Guiding opinion on Group Borrowing from Rural Credit Cooperatives' (Nongcun Xinyong Hezhuoshe Nonghu Lianbao Daikuan Guanli Zhidao Yijian 农村信用合作社农户联保贷款管理指导意见) and then extended to SMEs in the 2002 Law on Promoting Medium-small Sized Enterprises (Zhongxiao Qiye Cujinfa 中小企业促进法) (Art 21) and 2006 CBRC 'Guidelines on Small Enterprises Credit Loans and Group Lending in Rural Credit Cooperatives' (Nongcun Xinyongshe Xiaoqiye Xinyong Daikuan he Lianbao Daikuan Zhiyin 农村信用社小企业信用贷款和联保贷款指引). But until 2008, its applicability was still very limited and did not involve the major commercial banks.

Group lending gained wider popularity from the expansion of money supply after 2008. It was advocated by commercial banks at the time as an effective tool to manage the risk associated with lending to SMEs. This was particularly the case in Zhejiang province whose economy was and is dominated by SMEs. While group lending came to represent as much as 40 per cent of total lending in this period,[44] in Wenzhou the figure was estimated to be between 60 and 70 per cent. [45]

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[41] Ye, Wang and Wang (2016).
[42] Du (2012),pp33-4
[43] Stiglitz (1990).
[44] Zhang (2012).

As an essentially informal institution, the effectiveness of group lending lies in the social connection amongst members. Joint liability alone is insufficient to prevent members from cheating.[46] However, this was not fully understood by China's banks. The Chinese banks appeared to have believed that group lending would bind the members at the same level with or without the presence of a social network. As a result, many groups were formed at the request of banks with members having little knowledge of each other. Some other groups were organized by family members or relatives simply as a tool to increase leverage.[47] Groups as such had little experience in mitigating information asymmetry or peer monitoring. Exacerbating the problem, there was no limit on the number of groups one firm could take part in, or any cap on the loans that one firm could receive. Consequently, many firms ended up with taking multiple memberships in different bank-initiated groups. This multiplicity of overlapping group memberships proved to be devastating in the time of crisis. In the case of the Hua tai group, total debts of RMB 0.409 billion were incurred with 14 banks in a group consisting of five companies with joint liability. The Hua tai group in turn held joint liability for another six companies' debts of RMB 0.284 billion. Once the Hua tai group ran into financial difficulty, a further 11 companies went down with it.[48] This was not an isolated case. As the process was replicated across Wenzhou, group lending turned the failure of a dozen firms into a regional crisis:

> The Xin Tai Group [which] made glass and firms made mutual guarantees so in total there 730 firms involved. The size of the debt was 15 billion RMB. There was a mutual guarantee scheme. There was a core, the arrangement was like a hub and spoke. In the first circle there were 19 firms, another 135 in the second circle, and then, another 411, and altogether 730 firms were related. When the capital chain broke the owner of the group ran away to the US.[49]

As the contagion spread, it affected not just the firms in difficulty but the wider community in which they were embedded:

> On one day, 22 September 2011, more than ten entrepreneurs committed suicide or ran away. This caused a domino effect, it was chaos, it threatened both the economic and the social order. Once creditors knew that debtors were committing suicide or running away they started enforcing their debts however they could, they ran to the factories and grabbed what they could.[50]

Predatory interest rates

Since the outbreak of the crisis in 2011, the high interest rate which characterised the Wenzhou informal market has been widely blamed for the crisis. Wenzhou's defenders have argued that it was the tightening of monetary policy, and not the interest rate as such, that drove enterprises to the informal market for funds. But there are misunderstandings on both sides of this debate.

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[45] Shen(2012).
[46] Haldar and Stiglitz (2016).
[47] Zhang (2012).
[48] Li (2014).
[49] Interview with judge, September (2017).
[50] Interview with judge, September(2017).

There has always been an interest rate differential between the formal and informal market, with the latter often offering rates three times the former, but this does not necessarily make informal finance a form of 'usury' if that term is taken to mean exploitative lending. The differential is mainly due to two factors.

First, as we have seen, the formal interest rate is kept artificially low by government intervention, so cannot be said to represent the real price of credit. By contrast, the informal interest rate is decided by the market. Given that Wenzhou's informal financial market is well developed and competitive, it can be argued that there is no intrinsic sense in which its interest rates are 'predatory'. [51]

Second, informal lenders need to charge higher interest to compensate for the legal risks they face. In the case of a number of prevailing informal financing modes such as ROSCAs and private money houses, direct lending between companies is not permitted under the current law, putting resulting contracts at potential risk. Informal lenders may be also charged with the crime of illegal fundraising, which can lead to the death penalty prior to August 2015.[52] The higher the legal risks, the higher the interest rates.

Aggregate interest rates in Wenzhou informal market had remained fairly stable during 2003-2007, with a slight fluctuation at around 10 per cent. Even between 2007 and mid-2008, the period immediately after the onset of the global financial crisis, the informal interest rate only rose to 20 per cent and then dropped back down to 15 per cent.[53] The really sharp rise took place from June 2010 when the intra-firm short-term lending rate reached 43 per cent. Annual interest rates in the pawn market ranged from 12 to 18 per cent, those in the short-term mortgage market from 30 to 36 per cent, and the unsecured loan interest rate was as high as 60 to 70 per cent, with some rates even reaching 180 per cent. [54]

What was driving the increase in the interest rate in this period? It appears that the upsurge of informal interest rates in Wenzhou from June 2010 was driven by a dramatic increase of demand which was itself triggered by the massive expansion of formal finance within the Wenzhou ecosystem. From 2008 to 2010, many Wenzhou enterprises were induced to incur extra debts by the provision of low-cost formal credit. These additional debts would not have been arisen had the two markets remained separate as they traditionally had been, and these firms governed by informal interest rates. When the government tightened monetary policy in 2010, these formal debts were transferred into informal market through a number of channels. This occurred, firstly, where banks agreed to renew the existing loans and a bridging loan was needed from the informal market to cover a gap of 10 to 14 days before the loan was renewed. Then, where banks refused to renew existing loans, firms had to resort to the informal market to meet cash flow problems, or to seek follow-up capital to complete unfinished projects. In addition, firms that had traditionally relied mainly on the formal market were thrown into reliance on the informal market by the tightening of monetary policy. These combined factors drove up demand for informal sector loans which was reflected in a skyrocketing of informal interest rates in this period.

Although the government raised the benchmark interest rate three times from January 2010, the real interest rate was still negative as the CPI reached 6.5 per cent in June 2010. Surging interest rates in the informal market therefore sucked huge amounts of deposits out of the banks. The declining capital of

[51] Ye (2011),p67.
[52] A criminal law amendment was passed by the People's Congress on 29 August 2015 to remove the death penalty for illegal fundraising. This amendment came after the period to which our discussion in this paper relates.
[53] Qin, Xu and Zhang (2013), p5.
[54] Chen, Ye and Huang (2018), p165.

banks in turn forced more firms into informal market, pushing interest rates even further up. In theory, interest rates should have declined with the increase of credit supply over time, but some firms were unable to hold out long enough and failed before the market turned. The firms that survived at this time were those which were able to liquidate assets in time to stave off bankruptcy:

> Many investment chains broke down. Most of the businesses were expanding, then suddenly loans were being called in. We decided to cut off our investments by liquidating assets worth 10 million in order to repay loans to survive. Many Wenzhou firms failed during that period because they could not shrink or downsize quickly enough.[55]

Feedback effects in the formal sector

Prior to the 2011 crisis, failures in the informal market crises had had little impact on the formal system. In the 2011 crisis, however, the formal system was badly affected by failures of informal loans, indicating the degree to which the two systems had become interconnected. According to PBOC data, at the end of June 2011, the Non-performance loans (NPL) ratio for banks was 0.37 per cent in Wenzhou which was the lowest nationwide (2.4 per cent). After the crisis, it went up to 2.9 per cent at the end of June 2012, to 4.31 per cent by October 2013, rank the highest nationwide. But some believe that the actual figure was much higher than officially admitted. According to an interview with the vice-provincial governor of Zhejiang, Zhu Congjiu, reported in Phoenix Finance in 2016, in the case of some individual banks the NPL rate reached 20-30 per cent, and Wenzhou's banking sector was estimated to have suffered a total loss of RMB160 billion at this time.[56]

A substantial part of these losses resulted from the collapse of the informal financial market, triggering massive capital outflows from the formal system. The PBOC reported that 10 per cent of Wenzhou's formal banking lending ended up in its informal market at this time.[57] The actual figure may have been much larger. Credit Suisse estimated that about 60 per cent of lending in the informal market in China is ultimately funded by formal sector banks through various channels. [58] It is known that SOEs and other privileged enterprises or individuals such as civil servants who have priority in accessing formal credit remit all or part of their low-interest bank loans either directly to end users at informal interest rates, or through third parties like guarantee companies, and that banks lend to informal markets through guarantee companies which they either set up by themselves or collude with via third parties. Court reports also provide a glimpse into the scale of banks' funds in informal market: it was reported by Phoenix Finance in 2015 that of informal lending disputes, disputes involving banks accounted for 75 per cent of the total by value.

Conclusions

Wenzhou's developmental model, combining an entrepreneurial industrial sector with informal modes of finance, has been widely studied since the onset of China's reforms in the late 1970s. The crisis of 2011 has been attributed to weaknesses in the system of informal finance, including predatory interest rates and an outmoded reliance on interpersonal transacting. In this paper we have argued that the roots of the crisis are more complex, and that they need to be understood in terms of the interaction of

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[55] Interview with manufacturing executive, December 2018.
[56] China Securities Journal (2012).
[57] Wen (2011).
[58] Credit Suisse (2011)

formal and informal modes of financing in the period following the onset of the global financial crisis in 2008. The decision of the Chinese authorities to loosen monetary controls in the aftermath of the crisis had the effect of making low-cost credit widely available via the formal banking sector. This led not just to over-lending and speculative investments by firms, but, in the Wenzhou context, to the transmission of market distortions to the informal sector. The predatory interest rates which preceded the 2011 crisis were the consequence of these transmission effects rather than an endogenous response to supply and demand conditions in the local Wenzhounese economy. Similarly, the practice of group lending which helped to magnify the crisis in 2011 and which induced a system-wide collapse was the result of initiatives generated by regulatory interventions and changes in the lending practices of formal sector banks.

The lesson of the Wenzhou crisis, then, is not the obsolescence of its informal financing model. Rather the experience suggests that when formal systems become intertwined with informal ones, previously self-sustaining practices in the informal sector can be undermined. As formalization is in general a feature of the attempts to capture the benefits of increasing scale and scope effects in middle income countries, the Wenzhou case serves as a warning of what can go wrong when the formal and the informal interconnect, and financial contagion spreads from one to the other.

Achieving an improved understanding of the Wenzhou crisis has wider implications. It not only sheds new light on the finance and growth literature, in particular on the relationship between formal and informal financing. It also suggests the need for caution in reform efforts that aim to extend formal credit to disadvantaged groups and to SMEs in general. An important lesson from our study is that, unless carefully managed, such programmes can have unexpected, even disastrous consequences for both the formal and the informal.

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