

Growing *with* PAIN

Digital Financial Inclusion in China



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Abstract

Digital technologies, such as telecommunication, mobile internet, Big Data, cloud computing, blockchain, machine learning, etc are powerful tools in penetrating inclusive financial services down to the bottom of the pyramid, to benefit the low-income individuals and medium, small, and micro enterprises (MSME), which were previously excluded from the traditional financial system. Active users of digital financial inclusion have reached almost 1 billion in China. Types of digital financial inclusion (DFI) services include digital payment, internet financing, digital credit information services, internet wealth management and digital insurance.

In 2017, China was the largest global digital payment market, with blossoming e-commerce market and social network mobile applications providing ideal “scenarios” for digital payments to occur. The popularity of digital payment became channels for other DFI products and services. In 2017, PBOC required centralized deposit of pending payment funds of payment institution clients. The NetsUnion Clearing Corporation (NUCC) was established to provide network connectivity between different payment institutions. These two regulatory changes signals tightened regulation in digital payment market.

Some information of economic activities occurred online was collected and used for credit scoring by the e-commerce apps, social network apps or other credit scoring platforms. Digital credit information services help to boost economy and promote commercial innovations. In May 2018, Baihang Credit, the first licensed credit scoring firm in China was co-established by China Internet Finance Association and 8 major digital commercial enterprises, marking joint efforts of both public and private sector in building a unified personal credit investigation and services system.

Internet financing includes P2P lending, online microcredit, and consumer finance. With growing number of P2P platforms in China from 2007 to 2017, the number of problematic platforms also increased. Strict regulations were imposed on the market since 2015, trying to highlight the “information intermediary” (rather

than “credit intermediary”) role of the P2P platforms. Online microcredit firms are microcredit firms with permits to do businesses online. In 2017, in order to limit a particular type of “cash loan”, no new establishments of online microcredit firms were approved and special rectification were put in place by regulators.

Internet wealth management is also a highlight in China. Yu’e Bao had reached Asset of Management of 1.58 trillion RMB by the end of 2017, and became the largest money market fund globally. This was due to the low starting investment amount, high flexibility and reasonable return, popularity of the e-commerce platform “Taobao”, and the widespread digital payment “Alipay” which belong to the same parent company as “Taobao”. Digital technology also promoted the use of artificial intelligence, such as Robo-advisors.

Digital technology creates new channel for insurance products and services. E-commerce platforms are natural “scenarios” to implant insurance product promotions. InsurTech also enriches products types and business models and improves service qualities.

In summary, different types of digital financial inclusion products benefit from the fast developing digital technology, penetrating the economy and the income pyramid more than ever. Digital technology improves the accessibility and affordability of financial services, such as payment, financing, credit scoring, wealth management and insurance for the previously unbanked or underbanked individuals and MSMEs. Financial inclusion can be better achieved with digital technology.

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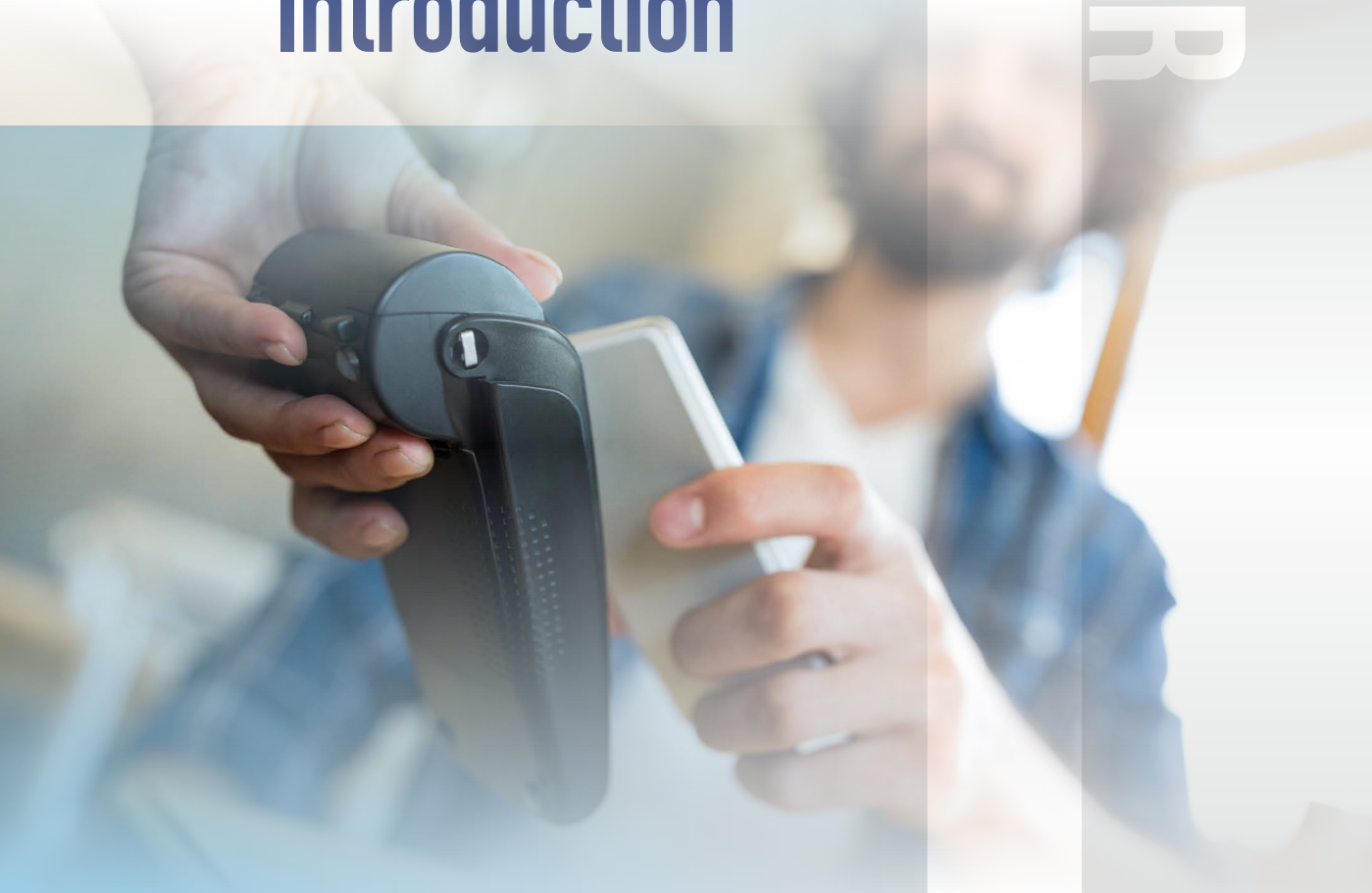
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CHAPTER

1

Introduction



In the past decade, as digital technologies, particularly financial technology (FinTech), grew with stunning velocity and given high proliferation of mobile communication and smartphones in China, digital financial inclusion (DFI) is demonstrating a formidable penetrating power that enables a significant portion of the previously unbanked and under-banked to enjoy financial services that are highly accessible and not restrained by time or space, in effect elevating them to a cashless realm. Due to various socioeconomic factors or personal reasons such as lack of financial literacy, however, DFI has yet to achieve universal coverage. A significant portion of low- and medium-income population has yet to benefit from digital finance but has to resort to a hybrid of traditional and digital means to access financial services and still some people have no access to any financial service at all. DFI still has promises to keep and miles to go.

For many in China the term DFI first came to light in the wake of the September 2016's G20 Hangzhou Summit, during which G-20 High-Level Principles for DFI (*hereinafter referred to as the Principles*) were passed and made public in order to guide nations to facilitate the growth of DFI and improve people's living standard. Professor BEI Duoguang and Professor LI Yan of the Chinese Academy of Financial Inclusion (CAFI) (2017), refer "DFI" to financial inclusion achieved via digital technologies, where "digital" or "digitization" is an all-encompassing term that covers computer, telecommunication, mobile internet, Big Data, cloud computing and other associated technology advances.

The emergence of DFI heralds a revolution in production, services and lifestyle. A particularly notable phenomenon is mobile payment. With a smartphone at hand, a consumer can gain access to digital payment once opening an account with a payment institution. Access to digital payment enables consumers to embrace a large range of digital financial services, such as loan services, credit information accumulation, wealth management and insurance. The complete ecosystem of digital financial services, offered to previously unbanked or under-banked consumers, belongs to the DFI realm.

In this report of Digital Financial Inclusion in China – Growing with Pain

(hereafter referred to as the “Report”), we introduce the current industry status, our accomplishments and challenges, regulatory efforts and future outlook for each of the five elements of DFI, namely, internet financing (Chapter 2), digital credit service (Chapter 3), digital payment (Chapter 4), digital wealth management (Chapter 5) and digital insurance (Chapter 6). We devote a chapter for each particular element. Although we introduce regulation towards each business element in the respective chapter, Chapter 7 discusses regulatory evolution and outlook for the whole DFI industry.

The remainder of Chapter 1 is structured as follows. Section 1 summarizes findings on each element of DFI from this “2017 Report”. Section 2 discusses improvements in digital technology that has laid the foundation for DFI. Section 3 presents characteristics of the beneficiaries of DFI, based on research from China Academy of Financial Inclusion (CAFI). In Section 4, we compare the level of DFI of China with that of other countries, based on a CAFI study. We then discuss challenges of DFI and outlook for the future in Section 5.

1.1 Main Findings

1.1.1 Digital Payment

In Chapter 2, we discuss the pioneering segment of all DFI elements – digital payment. The number of digital payments peaked in 2017, reaching over 150 billion transactions for the year, compared to about 35 billion transactions in 2014. Among all digital payment transactions, online payment and mobile payment are the largest two elements, taking 32% and 25%, based on the 4th quarter data. Mobile payment, despite of the large number of transactions, are of smaller values. In the 4th quarter of 2017, the value of mobile payment was about 10% of that of online payment. By the end of 2017, there were 246 third-party payment licenses, 9 less compared to 2016, due to cancellation, application for cancellation and rejected renewal.

Digital payment, especially mobile payment has penetrated the economy more

than ever imagined. It not only popularizes non-cash payment and significantly enhanced payment efficiency, but also acted as a stepping stone to other elements of DFI services, such as credit accumulation, internet financing, digital wealth management and insurance.

Regulation had been lax since the starting of digital payment in 2003 up until 2016, when there was a sudden tightening up of payment institution licenses. Further, there was regulation requiring custody of user deposit (without interest) by PBOC and the launch of the Internet Payment Union.

In this Chapter, we also introduce two very interesting case studies. The first one shows how QR code wins the internationally popular NFC payment. And the second one shows the competition between the top 2 mobile payment platforms: Alipay and Tenpay (WeChat Pay).

1.1.2 Internet Financing

Chapter 3 of this Report is devoted to the discussion of development and problems of internet financing. Four types of internet financing businesses are covered. Firstly, P2P lending information platform boomed during 2013 to 2017. By the end of 2017, the number of platforms reached 6229, over five times the figure of 2013. However, with the growing number of platforms also comes the increasing number of problematic platforms. Since 2015, a series of regulatory documents has been issued.

Online microcredit business involves small-sum loans offered to individuals by microcredit firms owned by online platforms. The number of online microcredit company charters increased by almost 100%, reaching 189 finished business registration by the end of 2017. Regulation tightened up in November 2017, stopped issuance of new charters and forbade cross-province operation.

Online consumer finance products can be scenario based (such as based on e-commerce platforms or retail conglomerates), or non-scenario based (such as through cooperation with payment institutions). While online consumer finance is a good complement to traditional consumer finance products, it also forces traditional consumer finance to innovate and improve their products and services.

Regulators in China define cash loan as a special type of small-sum, high-interest, short-term loan, characterized by “no scenarios, no requiring usage verification, no customer restriction and no collateral”. After the holding of online microcredit license registration on the compulsory scenario attachment, effective interest rate and use of bank funding will force many large scaled online cash loan companies to acquire scenarios and smaller ones to go offline or go abroad. The year of 2017 was a year of restructuring and consolidation for online cash loan platforms.

In summary, the internet finance industry experienced a great boom in the year of 2017 and the preceding years. However, problems continue to occur, together with tightening up of regulation.

1.1.3 Digital Credit Service

In 2017, with the increased awareness and use of credit in all aspects of people’s daily life, the modern credit ecosystem had emerged. A modern credit service system is a credit ecosystem that includes credit evaluation, credit information services and clear rewards and penalties, in order to help predict the probability and degree of default of all economic activity participants. The aim is to enhance transaction and cost efficiency and enhance user experience, ultimately improving resource allocation of society.

A modern credit service system is comprised of credit information services. Types of credit information services include deposit free services, “Post-Pay” services, express refund, installment purchase and priority services, etc. Data shows that up to November 2017, deposit-free credit information services had extended to 21 industry sectors, exempting upfront deposit of 42.5 billion RMB for over 40 million clients. Credit information services helped to reshape traditional business by bringing new growth opportunities and promoting development of new-type services. Credit information services are also important risk control tools. As activities of all people are recorded and stored, defaulting activities, even on a smaller scale, will negatively affect the doer’s credit record. Increasing cost of default will be a positive pressure on people’s credit behavior.

1.1.4 Digital Wealth Management

Digital Wealth Management is discussed in Chapter 5. The digital wealth management business boomed in 2017. For example, by the end of September 2017, the value of assets under management (AUM) of Yu'e Bao money market fund skyrocketed to RMB 1.5 trillion, almost doubling the 2016 year-end AUM of RMB 800 billion. It is the world's largest money market mutual fund in terms of AUM, surpassing JPMorgan's U.S. Government Money Market Fund. The speedy development of digital wealth management was due to the low entry requirement, high liquidity and reasonably high money market returns. The development of digital wealth management also fostered innovation from the traditional banking sector, the security firm sector and the telecom sector.

1.1.5 Digital Insurance

Chapter 6 introduces improvements of digital insurance in China in recent years. The year of 2017 marks the introduction of the Insurance Technology (InsurTech). The term InsurTech was introduced by CIRC in August 2017 and in November 2017, CIRC confirmed that InsurTech was widely employed in the first three quarters of the year and advanced technologies such as blockchain had been gradually applied to business. CIRC cited in August 2017 that, during the first half of 2017, within the category of innovative internet insurance products, 4.67 billion contracts were written, increased by 123.55% compared to the previous year. The development of insurance technology can enrich types of products and their application scenarios, improve the accessibility of the products and invent new business models and improve service quality.

1.1.6 Regulation

Chapter 7 reviews the evolution of regulation on DFI as a whole and discusses issues of common concern.

1.2 Development of Digital Technology

All improvements of digital financial services rely on the foundation of digital technology development. Internet technology fosters internet finance industry and greatly alters the business models of financial services industry on both demand side and supply side. For the demand side, internet and mobile internet technologies enable timely discovery and tracing of clients’ preferences and behaviors, thus externalizing financial needs more effectively and cost efficiently. For the supply side, Big Data enriches sales and risk control mechanisms and cloud computing enhances time and cost efficiency.

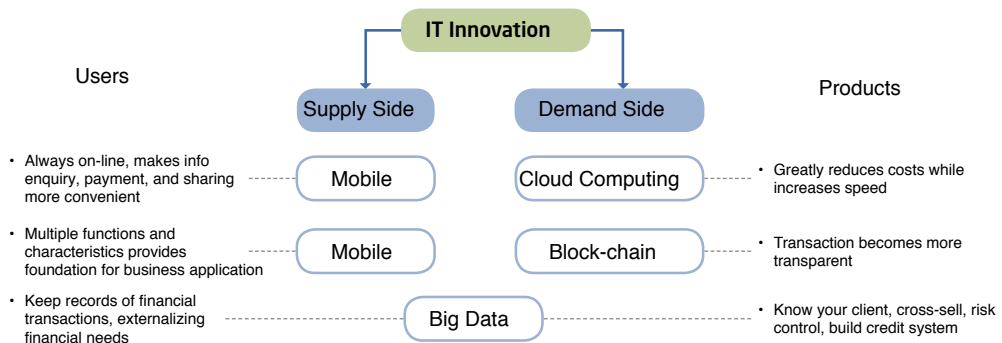


Figure 1-1 IT Enhances Supply and Demand of Financial Services

Source: "Internet Finance Ecosystem in China, 2020" by Boston Consulting Group

1.2.1 Mobile Connectivity

Mobile devices and 3G/4G networks keep people online all the time. Communications, preferences and behaviors of people are recorded as they occur. The various functions and characteristics of mobile devices lay a solid foundation for business and financial APPs. For example, high-resolution fit-in camera can scan bar codes and QR codes, making mobile payment possible; LBS (location-based services) can be associated with location-based push notification services; due to the stickiness of social network, sharing experiences by one network user penetrates to a large group of potential customers.

1.2.2 Big Data

With the development of internet technology, all types of data are recorded and stored, thus people's preferences, browsing and purchasing records are transformed to base data sets, which can be used for precision marketing and cross-selling. The first attempt was made by Amazon, who used its in-house developed and patented technology for shopping basket analysis. Big Data is also the foundation for constructing credit systems and building credit inquiry platforms, applicable to scenarios within and beyond finance. Personal credit data from social network, mobile communication and mobile phone fee payment etc. are being used to complement the credit data from the central bank.

1.2.3 Cloud Computing

Cloud computing significantly reduces the running cost of some financial institutions. By purchasing cloud storage and computing resources, medium and small sized financial institutions are able to reduce their IT system investment and running cost. Cloud systems are very versatile and ductile, thus able to handle peaking events such as "11.11". Cloud platform became a cross-terminal processing center, making contents and APPs transport seamlessly between terminals, achieving multi-screen interactions.

1.2.4 Blockchain

Blockchain technology provides unalterable underlying data for internet finance platforms, proactively embracing monitoring and regulation. A public blockchain product, IFMchain, hopes to transform the trust mechanism of internet finance products and make assets safer by transparent information. Internet finance institutions, though lack credit endorsement, can list their wealth management products on IFMchain platform, so that their investors can clearly see the original source of investment returns and understand the riskiness of the investment. Blockchain technology makes information more transparent, helping good quality internet finance companies stand out from the bad.

Only with the strong support of digital technology development can financial inclusion be more quickly and efficiently realized. The next section discusses the beneficiaries of DFI in China, based on a CAFI¹ study.

1.3 Beneficiaries of DFI in China

Financial inclusion is intended to serve those who were excluded from or underserved by traditional financial services, including micro, small and medium sized entities (SMSE) and disadvantaged individuals. Digital financial services bring cost and time efficiency, focusing on small-sum financial demands, thus providing significant implications for the “inclusiveness” of financial services.

In order to confirm whether the intended target recipients are the actual beneficiaries of DFI, China Academy of Financial Inclusion undertook a study which provides interesting insights into this issue.

Based on a sample of individuals from 14 counties in Zhejiang Province, CAFI finds that the level of digital payment of the rural area in Zhejiang Province is very close to that of developed countries. The chart below shows the age distribution of internet banking, mobile banking and third-party payment users of the sample. It clearly shows that those aged 25-60 are the main force using internet banking, mobile banking and third-party payments, taking over 95% of the whole sample. As people of this age group are the main force of productive and livelihood activities, this finding shows that financial inclusion has been rooted solidly in rural area production. Results also show that, however, digital financial services are not yet popular among older people.

1. China Academy of Financial Inclusion

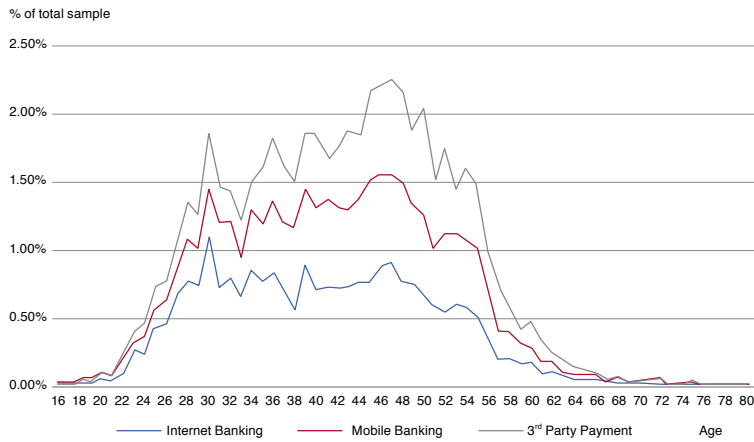


Figure 1-2 Age Distribution of Digital Financial Services

Figure 1-3 shows the percentage of people not covered by digital financial services. It shows that the percentage of not covered people increases with age. While younger people are more likely to use digital financial services, older people find it hard to switch to the new forms of financial services. People aged 20 years and below tend to be students thus have less economic activity exposure. People aged 20 and above are just leaving school and joining the workforce, so their increasingly vibrant economic activities, combined with the openness to innovation, make their use of digital financial service a popular trend. For people aged 40 and above, as they mature and get increasingly rooted in established habits of production and lifestyle, their propensity to adapt also declines. Such results indicate that older people should be the main target for education and training in using digital financial services.

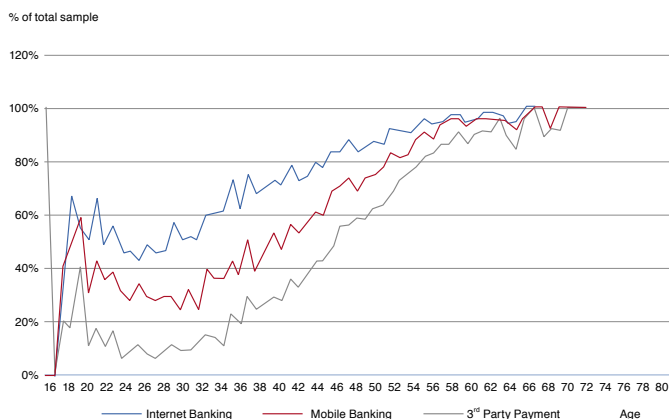


Figure 1-3 Proportion of Non-users of Digital Financial Services in Each Age Group

It is also found that people’s inclination, or lack of it, to tap into digital financial services is also related to their occupation (Table 1-1). For example, people in the commerce industry (such as private entities) and with full-time employment are readier to adopt to using digital financial services than people in the farming industry, due to more frequent interactions and transactional activities of the former.

Table 1-1 Percentage of Non-User in DFI

Main Income Source	Percentage of Non-Users of Digital Financial Services		
	Online Banking	Mobile Banking	Third-Party Payment
Farming	85.4%	74.4%	62.1%
Private Business	66.3%	46.1%	29.9%
Full-Time Employment	69.9%	51.7%	31.5%
Temporary Employment	90.8%	79.9%	65.1%
Freelance	73.2%	55.7%	38.0%
Others	81.7%	70.1%	58.3%

Based on another study by CAFI, among the interviewees in the poverty areas at the south foot of the Greater Khingan Range, 16.4% of the registered impoverished households use mobile banking services, compared to 20.73% in the non-impoverished household sample. This study also finds that level of education positively impacts the use of digital financial services. Thus, it can be seen that poverty-stricken groups and less-educated groups should be given more attention in promoting digital financial services.

Table 1-2 Educational Level and Use of Digital Banking

Educational Level	Online Banking	Mobile Banking
Illiterate	0.8%	2.4%
Primary School	2.1%	4.8%
Junior High School	8.3%	10.3%
Senior High School, Vocational High School or Secondary Technician School	16.3%	21.5%
Associate Degree and Above	47.8%	52.9%
Total Sample	7.4%	11.2%

Table 1-2 shows that, younger, better educated people with higher income and more dynamic economic activities are the major beneficiaries of digital financial services. Technological and product innovations and capacity building would be needed for the rest to make better use the inclusive digital financial services.

1.4 Cross-broader Comparison of DFI Development

China is not an early starter in DFI; however, due to friendly regulation and state-of-the-art digital technology infrastructure such as internet and telecommunications, DFI has been developing at a high speed in China. Results from the CAFI Zhejiang survey show that, as an economically advanced province, Zhejiang is parallel to high income OECD countries in terms of account penetration level, borrowing from licensed financial institutions, and use of mobile payment. All point to a reasonably high level of financial inclusion in this region.

1.4.1 Bank and Third-Party Payment Account Penetration

Account ownership in banks or third-party payment institutions is a basic indicator for the level of financial inclusion and it is the basis for receiving financial services. The CAFI Zhejiang survey shows that, 91.7% of the adult sample own a bank account and/or a mobile payment account. This ratio is higher than the national

average of 78.9% based on the Global Findex Database (2014) for China, comparable to the high-income OECD country average of 94%, based on Global Findex²³. High account penetration provides solid bedrock for thriving economic and financial activities in the province's rural areas.

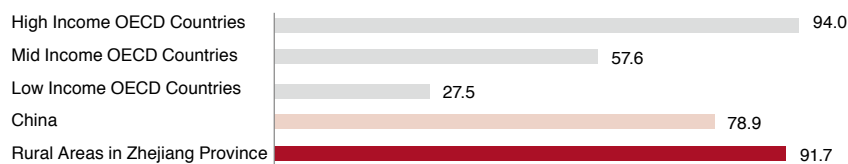


Figure 1-4 CAFI Study: Adults with Bank/Mobile Payment Accounts %

1.4.2 Borrowing from Licensed Financial Institutions

The probability of borrowing from licensed financial institutions measures the access to formal funding. World Bank's Global Findex Database 2014 data shows that, the access to formal funding is positively associated with a country's level of economic development. The CAFI Zhejiang survey shows that, for the sample area, 26% of the surveyed group is able to get funding if needed from banks and rural area credit co-operatives (i.e. formal funding). This is in contrast to other facilities in the group surveyed use micro-loan companies 1%, rural mutual cooperatives 1% and borrowings from friends and families 2%.

This shows high availability of formal funding in Zhejiang rural areas, even higher than high-income OECD countries⁴.

2. "Accounts" refer to accounts at banks, credit co-operatives and other depository institutions and mobile payment accounts including third-party payment accounts used on mobile phones. Account penetration refers to the share of adults who own bank and/or mobile payment accounts in the whole adult population.
3. Except those from rural communities in Zhejiang Province, all other data are from World Bank's Global Findex Database 2014. Global Findex Database is updated every three years and the 2017 data have yet to be published as of this moment.
4. Zhejiang data refer to the share of survey samples (adults) whose households borrowed from chartered financial institutions within the previous twelve months, whereas Global Findex data refer to the share of adults who secured loans from formal financial sector. It is reasonable to speculate that share of households who secured loans could be slightly higher than that of individuals.

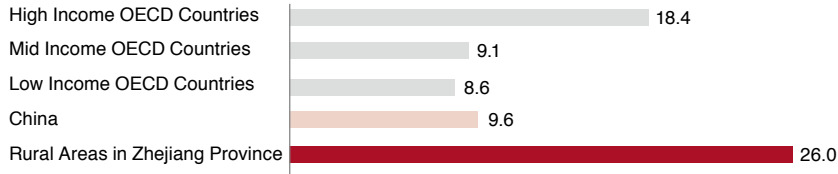


Figure 1-5 % of Household Borrowed from Licensed Financial institutions within Last 12 Months

1.4.3 Frequency of Mobile Payment

Mobile payment penetration in Zhejiang reaches 68.4%, compared to 20.6% even in high-income OECD countries. Among those who use mobile payment regularly, the subgroup which uses mobile payment on a daily basis takes the largest proportion⁵. In terms of user age, although it is apparent that younger people are more likely to be frequent users, the average age of each frequency group remains over 40, indicating the relatively higher inclusiveness of digital payment in Zhejiang.

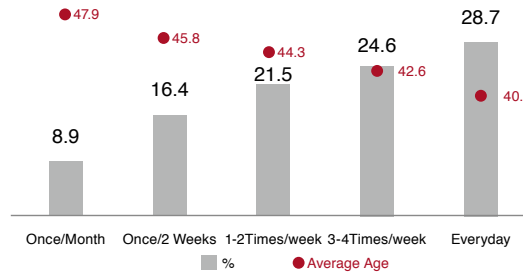


Figure 1-6 Distribution of Mobile Payment Use Frequencies and Average Ages

1.5 Challenges and Future Outlook

1.5.1 Challenges of DFI in China

Despite skyrocketing development, DFI in China are also facing several daunting challenges.

5. That daily users account for 28.7% means that among the survey samples (adults) who claim to use mobile payment “at least once a month”, 28.7% claim to use every day.

1. Barriers in Rural Areas

The first burden exists in the aging trend and low education of population in rural areas in China. A prolonged period of stringent implementation of “single child policy” leads to high average age of households. Although such policy is not as rigorously enacted as in urban centers, population aging is nonetheless also a reality in rural areas. As young people go to big cities to work, older people are left behind in the hometown due to the unique Hukou (household registration) regime in China. The older population, having grown up in a time when education opportunities were scarce, and there was a lack of literacy and skills to operate sophisticated digital devices, hindering the popularity of digital financial services.

2. Large Variance in Personal Financial Literacy

Financial knowledge and techniques are not covered in basic education in China. Except Finance and Economics-related major graduates, even those with college degrees or above are not necessarily well-educated in finance. Most people adopt a “learning-by-doing” approach. Therefore, the average financial literacy level tends to be low and varies dramatically among people, posing another challenge to promoting financial inclusion.

3. Uneven Development among Different DFI Elements

Financial inclusion encompasses different elements, including payment, credit, financing, wealth management and insurance. While digital payment is rapidly growing, the progress of insurance and wealth management is still relatively slow.

4. Balancing Between Risk and Development

Development of financial inclusion could help boost economic growth, harmonize interests of various parties, achieve equitable distribution of economic welfare and enhance financial stability. Promoting DFI could benefit financial inclusion, but if used carelessly, could also lead to “over-indebtedness”, which may harm the stability of the financial system. How to actively develop financial services by leveraging the

digital tool, without creating over-indebtedness, is a challenge for industry regulators and practitioners.

1.5.2 Future Outlook of DFI in China

Challenges notwithstanding, we are convinced that DFI is to welcome another boom. Government will play a more active role, strengthening regulation and guidance. But the market will remain the major force in promoting this new industry. Big Data-driven digitization and intelligentization will be the next driving power to reach another breakthrough.

The following trends can be expected. Firstly, more efforts and resources will be invested in the education and training in using the DFI. Lower capacity of DFI users relative to the level of DFI development will be a key threat for the industry. Fortunately, all parties including regulatory authorities have acknowledged the importance of DFI capacity building.

Secondly, further opening up of the market is expected. Traditional regulatory mindset and limitations of traditional financial institutions may slow down the DFI industry development, whereas new financial institutions which may not be regarded as financial firms. However these institutions have factually provided financial services, embraced advanced technologies and Big Data and provided financial services cost efficiently, thus huge market potential. The market will need to further open up for such firms to play a bigger role and lead the market.

Thirdly, an irreversible trend, digitization accelerates innovations in financial services, creating a new paradigm of the industry that is in stark contrast to the traditional one. This requires the adoption of regulatory technology (RegTech), which is arguably the only avenue leading to effective regulation.

Fourthly, the power of Big Data will be unleashed and help to build a more effective credit reference system. In such a system, all digital activities of individuals will be recorded and used safely and efficiently, proving huge commercial value.

Lastly, money digitization and going cashless is the ultimate direction of DFI. Before we eventually reach this state, human interaction/intervention, or a hybrid

between human intervention and digital services will still play a role. With the utilization of FinTech and increasing cost of man power, it is expected that humans will play a diminishing role until artificial intelligence take on most of the work.

CHAPTER

Digital Payment



2.1 Popularity of Digital Payment

Recent years have witnessed a phenomenal emergence of mobile payment in China, showing the potential of digital technology in promoting financial inclusion. According to Statista⁶, China is the largest global digital payment market, with transaction value of \$998 billion, about \$200 billion higher than US, which was the second largest market.

2.1.1 Digital Payment and Mobile Payment Data

Based on data from PBOC, as seen in Figures 2-1 and 2-2, the number of electronic payment (a.k.a digital payment) transactions⁷ has increased steadily since 2015, though the value kept at the same level. Within electronic payment, online payment takes the largest portion in both volume and value, followed by mobile payment (Figure 2-3, 2-4, 2-5).

In the 4th quarter of 2017, the number electronic payments reached over 40 billion and were valued at 593.31 trillion RMB. For the whole year of 2017, the number of online payment transactions amounts to 48.58 billion, which is 32% of the total number of electronic payments of 152.58 billion. And mobile payment takes 25%. However, the transaction amount of online payment of 2075 trillion RMB takes 86% of the total value of electronic payments of 2419.2 trillion RMB, while mobile payment takes only 8%. This shows that mobile payments are frequent but small sum transactions, consistent with the “inclusiveness” of financial inclusion in covering the left tail of transaction distributions.

6. Source: Statista Digital Market outlook 2018, <https://www.statista.com/outlook/295/117/fintech/china>

7. In 2013 and 2014, electronic payment includes online payment, phone payment and mobile payment. In 2015 onwards, however, it also includes ATM business, POS terminal business and others.

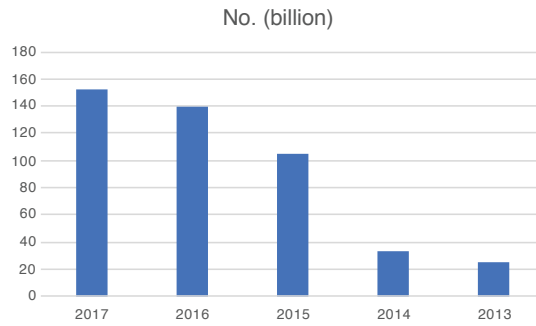


Figure 2-1 Number of Electronic Payments in China 2013-17

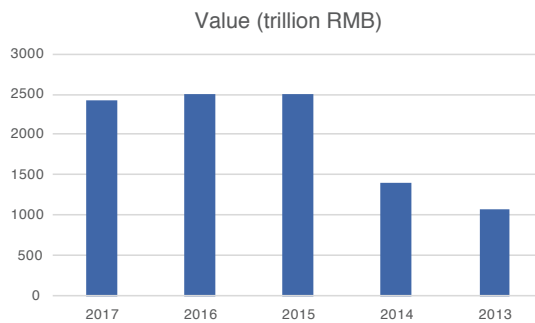


Figure 2-2 Value of Electronic Payments in China 2013-17

	Electronic Payment		Online Payment		Mobile Payment		Telephone Payment	
	Number	Value	Number	Value	Number	Value	Number	Value
Q4 2017	40798	593.31	13417	503.04	9904	53.77	39.25	2.08
Q3 2017	38135	523.47	12087	439.89	9722	49.26	41.09	2.16
Q2 2017	36247	545.58	11777	473.39	8622	39.24	39.6	2.2
Q1 2017	37400	756.84	11297	658.77	9304	60.66	40.06	2.34
Total	152580	2419.2	48578	2075.09	37552	202.93	160	8.78

Figure 2-3 Breakdown of 2017 Number (million) and Value (trillion RMB) of Electronic Payment Data

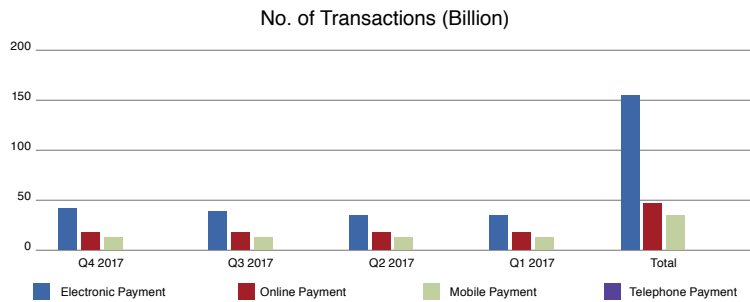


Figure 2-4 Breakdown of 2017 Number of Electronic Payments

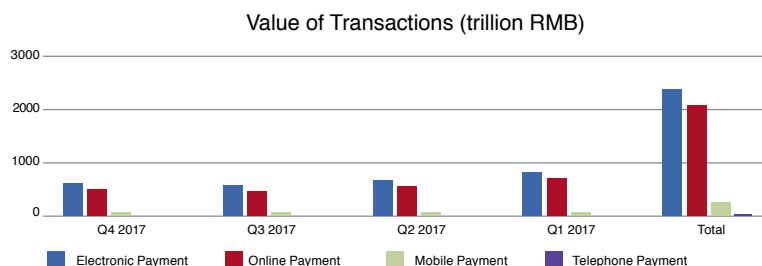


Figure 2-5 Breakdown of 2017 Value of Electronic Payments

2.1.2 Development of Third-Party Payment Institutions

The Payment & Clearing Association of China conducted statistics on 223 non-bank payment (a.k.a. third-party payment) institutions and their 1,471 subsidiaries and found that these institutions’ internet payment, bank card clearing and prepaid card transactions have covered all prefecture-level cities, with the issue of prepaid cards covering 331 of 337 cities surveyed. These non-bank payment institutions hired 60,547 employees, among whom 60.12% have bachelor’s degree or above and more than 80% of them had lengths of service of less than 1 year.

A payment license is required for payment businesses. Over the years the Central Government has granted licenses to 270 institutions in 9 batches. However, by the end of October 2017, there were only 246 institutions, reduced by 24 institutions due to cancellation, voluntary application for cancellation, denied renewal of licenses, or combination of the above factors. The issuance and cancellation of payment licenses from the year 2011 to 2017 are shown in Table 2-1.

Table 2-1 Issuance of Third Party Payment Licenses in Batches

Batch No.	Date	No.	Total No.	Key companies licensed
1st batch	May 18, 2011	27	101	Alipay, Tenpay, ChinaUMS, 99bill, etc.
2nd batch	Aug 29, 2011	13		PayPal, Yintong Digital
3rd batch	Dec 22, 2011	61		BestPay E-business, Unicom Epay, China Mobile E-business
4th batch	Jun 27, 2012	95	96	China TV Pay, Suning Finance, etc.
5th batch	Jul 20, 2012	1		Qingdao BuyTop

Batch No.	Date	No.	Total No.	Key companies licensed
6th batch	Jan 6, 2013	26	53	Hi-card business, Shanghai Shanglvtong
7th batch	Jul 6, 2013	27		SinaPay, Baifubao
8th batch	Jul 10, 2014	19	19	Chanjet, 8F8, Ehomepay, etc.
9th batch	Mar 26, 2015	1	1	Guangdong Guangwu E-commerce
2016	15 institutions reduced due to cancellation, application for cancellation, renewal rejected, combination			
2017	9 institutions reduced due to cancellation, application for cancellation, renewal rejected			
Total number up to date				246

2.2 Implications of Digital Payment

Digital payment, especially mobile payment has penetrated the economy more than ever imagined. QR codes for mobile payment are displayed in hotels, restaurants, shopping malls and even fruit stalls and corner shops. It saves the time for finding changes, shortens the queuing time and saves the trouble from counterfeit notes and theft, significantly increasing the efficiency of shop management. Mobile payment is also the stepping stone for other innovative services such shared bikes and cars. It realizes the connection between strangers and between mobile terminals, allows the realization of “Internet of things” and promotes new retail and new production business models. Pushing traditional economy and business models ahead, digital (mobile) payment improves the overall efficiency of social development and economic development.

Mobile payment also acts as a pathway to take in clients who can further benefit from other financial inclusion services that traditional financial institutions failed to offer or services with high thresholds. The implications are three-fold.

1. More Credit Investigation and Loan Service Recipients

New type digital institutions in China, for example Alipay and WeChat (Tenpay), are internet platforms established based on e-commerce and social scenarios. They

have advantages in recording, accumulating and analyzing digital payment data of users. Also, WeChat and Alipay open their interfaces with an open attitude and link with outside resources, such as, the charges of utilities, data of Administration for Industry and Commerce and Administration of Taxation and data of Courts. Therefore, credit rating based on such cross-certified data is reliable and credible. This can allow such platforms (and their cooperating banks or P2P platforms) to offer loan services to low income individuals or small businesses which have good credit history but do not have strong official credit history from PBOC. Credit type services such as car rent, installment payments, waiver of security deposits, etc. are also available to those clients who were not previously covered by traditional credit information services.

2. Lowered Investment Threshold

Digital payment clients can invest their savings in internet wealth management products. One example is “Yu’e Bao” from Alipay. Yu’e Bao differs from traditional wealth management products in its better liquidity (T+0 redemption vs. T+1 in traditional money market products), better convenience (funds from Yu’e Bao account can also be used for credit card payment and online/offline consumption), zero investment threshold (as opposed to 10,000 or 50,000 RMB in most traditional investment products) and higher yields (the interest is market driven and not as restricted). Such benefits greatly satisfied investors’ needs of low risk, high liquidity and high returns which was previously unavailable to low income groups.

3. Innovated Insurance Products and Services

Payment is closely linked with consumption scenarios, such as online shopping, tourism, dining and entertainment, etc. Innovative insurance products can stem from such scenarios, including return freight insurance, flight/hotel cancellation insurance, flight delay insurance, etc. Such consumption scenario linked insurance products are of small amounts but high frequencies. It can be said that the convenient payment method and the information collected from online consumption scenarios on internet platforms make the realization of such innovative insurance products a reality.

In summary, digital payment not only provides a more convenient payment method and thus improves social and economic efficiency, but also generates and promotes other elements of financial inclusion, i.e. credit investigation, financing services, wealth management and insurance.

In the next two sections, we will discuss two case studies of mobile payment. Section 4.3 introduces the battle between NFC or QR code as the main technological foundation for mobile payment in China. Section 4.4 discloses competition between Alipay and WeChat in the fight to be the largest payment provider in China.

2.3 Mobile Payment Going Abroad

The fast development of mobile payment has been recognized and appreciated by country leaders all over the world. On the “Belt and Road Forum for International Cooperation” in 2017, Lagarde, CEO of the International Monetary Fund, highly praised the fast-developing mobile payment in improving billions people’s life standard. Naguib, Prime Minister of Malaysia and Lee Hsien Loong, Prime Minister of Singapore, both hoped to introduce China mobile payment technology into their countries.

For countries along the “Belt and Road”, they share similar demographic structure and economic condition to China, characterized by large population, fast economic development, uneven development of the financial system and high barrier for low-income group to receive high quality financial services, etc. Data shows that among the population of 680 million in ASEAN countries, 380 million are not covered by basic traditional financial services; and there are only 300 million bank cards in India with a population of over 1.3 billion.

Against this background, mobile payment marks China’s “Soft Strengths” and can help “Belt and Road” countries to improve their people’s living standard and raise China’s international status. Ant Financial cooperated with Paytm in India in 2015 and since then the number of users of Paytm increased from less than 30 million

to over 250 million and Paytm had become the 4th largest e-wallet globally. Today, QR codes can be found everywhere in India’s streets, shops, restaurants. Especially in 2016 when the Prime Minister of India abandoned bank notes, the use of mobile payment had significantly reduced its shock on the economy and helped with the smooth transition.

In developed countries, Ant Financial cooperated with Orix, Origami Pay, Orico and Jaccs etc. in Japan, to provide “payment + market” solution. While trying to explore new markets, Ant Financial was still building an operating system using Cloud technology, Artificial Intelligence and other technologies. During the “11.11” event in 2017, Ant Financial processed up to 120 thousand transactions per second, far above the 24 thousand record held by Visa. Jing Xiandong, CEO of Ant Financial claimed during the Davos Forum in January 2017 that, Alipay will serve 2 billion people across the world within 10 years, to extend inclusive financial services to the previously under-banked under-served people. It is hoped that, the advanced digital payment technologies in China can help to benefit the financial service all over of the world⁸. Some of Ant Financial’s international exploration attempts are summarized in Table 2-2.

Table 2-2 International Expansion of Alipay

Regions	Date	Countries	Activities	Contents
Asia-Pacific Region	2015	India	Invested in Paytm	Paytm is the largest mobile payment and e-commerce platform in India, with 140 million users.
	2016	Thailand	Cooperated with Ascend Money	The digital payment wallet business of Ascend Money covers Indonesia, the Philippines, Vietnam, Myanmar, Cambodia, etc.
	2017	South Korea	Invested in Kao Pay	Kao Pay is a payment platform for Kakao, an online chatting software in South Korea.
	2016	Japan	Cooperated with Orix, Origami Pay, Orico and Jaccs.	Promoted “payment + market” solutions in Japan.
Europe	2015	Europe	Cooperated with Wirecard, Ingenico and First Data.	Offering payment services for Chinese tourists in Europe and conducting other financial business meanwhile.

Sources: online sources, collected by author.

8. Some of Ant Financial’s international expansions can be found in Table 2-3.

2.4 Regulation of Digital Payment

The first decade of non-bank payment developed in a relaxed environment. Alipay was established in 2003, but the first batch of payment licenses were issued by PBOC in 2011. To some extent, we can say that the lax regulation towards innovation is partly the reason behind the prospering of mobile payment in the early years. It is when both Alipay and Tenpay started to target the offline payment and threaten the business of traditional businesses of bank institutions that regulators were alerted and changed their regulatory attitude.

In April 2016, government undertook rectification activities and started rating and classifying payment institutions. The emphases are two-fold: to regulate on client deposit risk and cross-institution clearing businesses and to rectify unlicensed payment businesses.

1. Special Rectification

On 14 April 2016, the State Council formed the ‘Special Rectification Leadership Team’, together with China Bank Regulatory Commission, China Insurance Regulatory Commission, CSRC, and the Administration for Industry and Commerce and local governments.

2. Classifying and Rating of Payment Institutions

On 21 April 2016, the Central Bank issued the Management Methods for Classifying and Rating Non-bank Payment Institutions, clarified the regulation mentality. All payment institutions will be classified into 11 grades of 5 categories. The Central Bank will rate each institution based on 6 indices, i.e. client deposit management, compliance and risk control, consumer rights protection, system safety, anti-money laundry and sustainability. Management of payment institutions varies according to the rating and classification of each institution. Institutions frequently receiving low ratings will be suspended for business.

3. Classifying of Personal Accounts

In December 2015, People’s Bank of China issued the Administrative Measures for the Online Payment Business of Non-Banking Payment Institutions (“Administrative Measures”), to regulate the online payment industry. It required classification of personal payment accounts into three categories (shown in Table 2-3). Class I accounts only need one external verification method (such as online check of ID), the account balance can be used for consumption and transfer, with a low upper limit. However, through enhanced client ID verification, Class I accounts can be upgraded to Class II or Class III accounts with higher upper limit. The “Administrative Measures” also requires that only the Class III accounts with highest real-name verification can use the account balance to purchase investment products.

The classification of personal payment accounts is shown in the table below:

Table 2-3 Classification of Personal Payment Accounts

Class of Account	Function of Account Balance	Upper limit of Payment	ID Verification Methods
Class I	Consumption, Money Transfer	Accumulated 1000 RMB since account opening	Remotely; at least one external verification method
Class II	Consumption, Money Transfer	Accumulated 100,000 RMB	Face-to-face or remotely; at least three external verification methods
Class III	Consumption, Money Transfer	Accumulated 200,000 RMB	Face-to-face or remotely; at least five external verification methods

4. Regulation on Payment Licenses

When the digital payment industry was developing rapidly in 2010, the central bank issued the *Measures for the Administration of Payment Services Provided by Non-Financial Institutions* and stated that all qualified non-financial institutions were encouraged to participate in equal competition and there would be no restriction on the number of Payment Licenses. Six years later, however, the central bank realized that control of license quantities would be necessary to curb overgrowth of the digital payment industry. In May 2016 when the first batch of third party payment licenses issued by the central bank were about to expire, the market signal of ‘stricter

access and supervision” was no longer a rumor coming out of thin air. Just as the market forecasted, the solution released by the central bank expressly stipulated that applications for new payment institutions would not be accepted and that emphasis would be placed on supervision and guidance of existing licenses. If a licensed payment institution has never carried out any payment business before expiration, or has suspended payment business for a long time or is vulnerable to potential risk in management of client deposit, its license would not be renewed. In the middle of 2017, the License for Payment Transactions (commonly known as “payment license”) of 12 third party payment institutions were revoked by regulatory authority. Among them, from May 15 to June 14 eight were cancelled.

5. Management of Client Deposits

On the afternoon of January 13, 2017, PBOC issued the Notice of the General Office of the People’s Bank of China on Matters Concerning Implementing the Centralized Deposit of the Funds of Pending Payments of Clients of Payment Institutions. The Notice requires that third-party payment institutions should deposit at least 50% of clients’ deposits to assigned accounts supervised by PBOC, without interest. Payment institutions should not occupy or divert the deposit funds for other uses. The aim of the regulation is two-fold: first, to prevent some payment institutions in making profits from interest margin and urge them to return their focus to the area of payment business; second, to crack down on the institutions which undertook unlicensed inter-bank settlement activities by opening accounts in several banks.

6. The Launch of Internet Payment Union

In March 2017, the NetsUnion Clearing Corporation (NUCC), an Internet payment clearing platform for non-bank payment institutions started trial operation. It is used to conduct businesses that are initiated by non-bank payment institutions and associated with banks. There would be no direct connections between third-party payment institutions and banks; rather, regulators are driving all transactions dominated by payment institutions to the NUCC. This was regarded the strictest regulation on third-party payment proposed by PBOC. As mentioned above, the

present QR code payment of third-party payment institution is a direct trilateral connection: bank accounts of consumer side and business side connect to their own bank gateway through third-party payment institutions, but the networks of each third-party payment institutions are independent, linking to commercial banks separately. The relationship between the NUCC and third-party non-bank payment institutions is similar to that between the UnionPay and commercial banks. The NUCC improves the connectivity of networks of different payment institutions. Additionally, according to the existing regulation, the direct connection between third-party payment institutions and banks will be banned in the future. The trilateral model must be changed to “four-party model” by connecting to the unified Internet Payment Union.

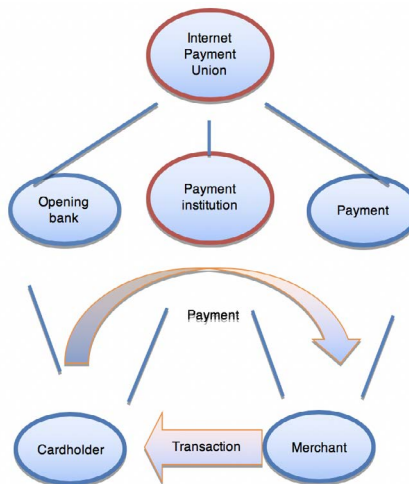


Figure 2-6 Mobile Payment Model Connected to the Internet Payment Union

2.5 Case 1: NFC or QR Code?

Globally, mobile payment adopts two technological paths, NFC (Near Field Communication), a contactless payment system and QR code payment. The former appeared earlier than the latter. In 2004, Sony introduces FeliCa contactless

technology in Japan for payment solutions and soon it popularized across the country in mass transit and shopping at the supermarkets, marking the world's first success of commercial application of mobile payment. Google Wallet, Apple Pay and mobile payment innovations commonly found in the U.S. are also NFC-enabled. QR code payment, on the other hand, has its origin and is most popular in China after 2010.

The development of mobile payment in China had a long and controversial history. The early efforts were mainly conducted by China Mobile and UnionPay. However, though a mature technology, NFC had a bumpy start because of the dispute over the payment standard and the cost of hardware. In 2012, Alibaba Group and Tencent began to promote O2O payment by using QR code scanning technology while large state-owned players failed to kickstart mobile payment despite their advantages. Thanks to a large user base and effective marketing of Taobao and Wechat, QR code payment rapidly caught up and dominated the market within only four years, replacing cash payment and even bankcard payment in all kinds of transactions, showing to the world how the most populated country could possibly become “cash-free”. During this process, Chinese regulators also changed their attitude: While in 2014, the People's Bank of China called for a halt to the QR code payment of Alipay and Tenpay in 2014, in 2016, it gave a greenlight to UnionPay to launch QR code payment standards.

In February 2017, Financial Times published an article titled “China Mobile Payments Dwarf Those in US”⁹. Citing iResearch and Forrester Research's data on mobile payment markets in China and the U.S., the article claims that the size of China's mobile payments was nearly 50 times greater than those in the US in 2016. The story was widely quoted and reprinted worldwide and the development of mobile payments, especially the QR code payment in China, attracted global attention.

The development of the digital payment in China can be divided into two phases. Prior to 2012, NFC played the leading role in mobile payments. In 2012, Alipay launched the offline QR code payment service, followed by WeChat in 2014. So the year of 2012 marks the beginning of the second phase, when QR code payment

9. Financial Times, 2017.02.14, “China Mobile Payments Dwarf Those in US”.

rapidly popularized. In March 2017, under the leadership of the People’s Bank of China, NetsUnion Clearing Corporation (NUCC), a unified clearing platform for online payment came into use.

This section of the chapter will discuss the technological choices, competitiveness, market preference and regulatory attitude of NFC and QR code payments in the above two periods in China.

2.5.1 Technological Differences

The technological differences between the two mobile payment models can be illustrated using Table 2-4.

Table 2-4 Technological Differences between NFC and QR Code Payments

	NFC payment	QR code payment
Bank Account	Both the receiver and the payer should own bank accounts with enabled online banking service.	* Not necessary * But you can only withdraw or top up with a bank account.
Receiver Hardware Requirements	POS terminal with Quick Pass.	The receiver needs: * a printout of the QR code, or * a smartphone, or * a POS machine that can scan a QR code
Payer Hardware Requirements	A smartphone with NFC, or a bankcard with Quick Pass.	A smartphone
Communication Network	POS terminal connected to the private network	Payers’ phone connected to mobile network
Payment Experience	Simple and fast	More procedures and more time-consuming than NFC payment but easier than swiping a bank card in POS terminal

From the above table, it can be seen that QR Code payment has lower technological requirements, while NFC is more time efficient. Although QR payment takes the majority of market share, with the improvement of hardware requirements, NFC may as well take up a reasonable market share in the future.

2.5.2 Business Model Differences

NFC payment continues the market structure of the “four-party” traditional bankcard payment model (Figure 2-6): the merchant, the issuer, the merchant acquirer

and the card association. The merchant is responsible for sales and transactions; the issuer for issuing bankcards; the acquirer for developing and managing designated merchants and the card association for the transaction and clearing of bankcards.

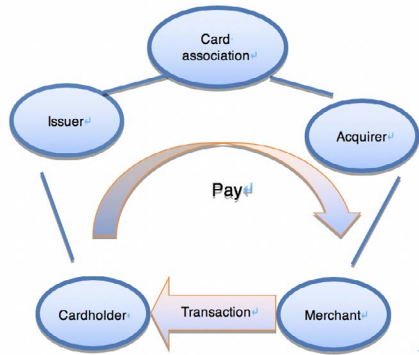


Figure 2-7 The “Four-Party” Model of Bankcard Payment

In this model, the issuer, the merchant acquirer and the card association fulfill their responsibilities and share the transaction fees. NFC introduces the “fifth” party (Figure 2-7), the hardware producers, into this model, thinning the transaction fees available for other three parties. NFC payment through mobile phone changes the traditional card-swiping procedure to the phone-touch procedure, where the phone is equipped with NFC function. Therefore, information and orders are transited through the mobile phone. The mobile phone hardware is not involved in the clearing process and there are also no virtual accounts or sunk capital, but only acts as the information transiting channel.

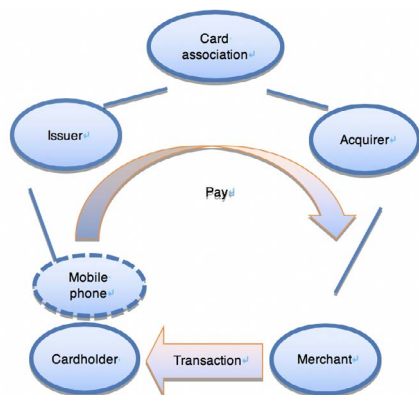


Figure 2-8 The “Five-party” Model with NFC Phone

QR code payment is a “three-party” model (Figure 2-8). The major characteristics of this model is that the “payment institution”, connected with banks directly without the involvement of a bankcard association, plays the leading role in the whole process of gaining consumers and merchants and cross-bank clearing. Therefore, in the sharing of transaction fees, payment institutions have a strong bargaining power. Unlike the “cooperative structure” between issuer, acquirer and card association in the traditional “four-party” model, the “three-party” model relies heavily on the payment institution, which is the core player. Such a structure is very similar to closed card association in the US, such as America Express and Discover.

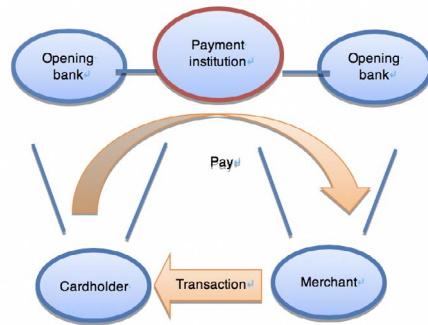


Figure 2-9 “Three-party” Model Led by the Payment Institution

In terms of the fee structure, Alipay and WeChat typically charge 0.6% from merchants. If payment goes directly to or from bank accounts, Alipay or WeChat will need to share part of the fee with the respective banks. The exact percentage of the fee shared by commercial banks depends on the agreements between payment institutions and commercial banks. In NFC model, merchant fee is the total of issuer fee (0.35%), UnionPay service fee (0.0525%) and merchant receiver administration fee (typically 0.1%). All added together, total fee amounts to 0.5-0.6%, very close to that charged by payment institutions in the QR model. Therefore, transaction fee is not a critical factor in the competition between NFC and QR code payments.

However, in QR code payment, UnionPay is bypassed and significantly affected. Bargaining power of commercial banks is reduced as well and thus their share of fee income might be affected too. Prior to 2013, payment institutions are only active online, however with the maturity of the offline payment since 2013, market share of UnionPay and commercial banks have been gradually invaded.

2.5.3 Why NFC fails in China? And a comparative study of Japan.

As mentioned above, although NFC technology started earlier and has a higher safety standard, it has lost the battle for popularity in China. The reasons might be two-fold. The first reason is related to the battle for mobile payment standard between China Unicom/China Mobile and UnionPay. As early as 2010, UnionPay supports the 13.56MHz payment technology while telecom providers support the 2.4GHz technology. The former was a mature international standard, while the latter was developed by China Mobile. Payment is a bilateral market, for both merchants and consumers. In China then, UnionPay has advantages in taking in merchants, whereas China Mobile takes over 70% market share in end consumers. Incompatible standards of the two separate groups are difficult to reconcile. In 2012 under the coordination of the Ministry of Industry and Information Technology, 13.36MHZ technology was made the standard in China. However NFC payment had already missed its golden opportunity, because the QR code payment by Alipay had already become much more popular. The second reason lies in the difficulty in coordinating between all parties on the payment chain. There are many parties on the payment chain - merchants, telecom service providers, mobile hardware producers, clearing and settlement institutions and commercial banks, each a vital element on the chain. However, in China, telecom service providers, clearing and settlement institutions and commercial banks are administrated under different regulatory bodies; mobile phone production is highly fragmented; the most applicable payment scenario, public transportation, are managed by monopolistic institutions in each city. Each element has their own motivation to lead the industry rather than becoming a channel for others.

Japan saw the popularity of NFC payment starting from 2004. In 2004, the largest telecom provider NTT Docomo introduced the “Mobile Wallet” service supported by Felica Technology of Sony. Up to March 2014, more than 240 million Felica chips were sold, to be fitted by over 600 types of mobile phones. The popularity of NFC payment can be due to the following reasons. Firstly, a transportation card can be used as a payment method in not only transportation, but also in retail shops, restaurants and other daily scenarios. The mutually compatible electronic money industry is mature

and well developed, which prepared the technological compatible environment for mobile payment. This is different for China, where all UnionPay merchants have to use the NFC equipped POS terminal in order to receive Quick Pass payment. Secondly, telecom providers have strong control of mobile phone producers. DTT Docomo easily spreads out user networks with mobile phones equipped with NEC chips. The lack of strong control by telecom providers over mobile phone providers is associated with the difficulties faced by Google Wallet and telecom providers' NFC payment attempts. Thirdly, there is an open attitude and cooperative spirit between all parties on the payment chain. NTT Docomo actively cooperates with electronic money issuers, commercial banks, bankcard issuers, large retailers, etc. to build a large cooperative business chain with an open attitude. This contrasts with monopolistic and dominating attitudes of public transportation, telecom provider and UnionPay in China. Lastly, even retail industry is highly organized in Japan. Due to the small country size and centralization of its population, industries such as public transportation and retail show characteristics of clustered users and merchant chains. This provides fertile grounds for small amount payment and establishment of POS network. In China, new-type payment means can always be firstly found in KFC, McDonald's, Starbucks and other chains, from which we can see that the shape and form of retail industry have a significant impact on the innovation of payment industry.

2.5.4 Why QR Code Payment Wins

Reasons behind QR code payment's success can be classified into technical reasons and non-technical reasons. As for the former, advanced 3G mobile telecom technology and mobile phone hardware production are the foundation of QR code payment. 3G licenses in China was firstly issued in 2009, then 3G network speedily spread out, accompanied by the intense competition between the three major telecom players. In terms of smartphone hardware, China has the largest number of smartphone producers and brands, thus even low-income consumers can afford a good smartphone due to the low price. Compared to NFC technology, as discussed earlier, QR code payment has a lower hardware and network requirement and it can

achieve two-way money transfer between parties, whereas NFC payment only support one-way transfer from consumer to POS terminal.

Non-technical reasons are related to the characteristics of the two major players of QR code payment: Alipay and WeChat (Tenpay). Firstly, Taobao¹⁰ and WeChat are the largest players in e-commerce and social network, respectively, thus have accumulated large client base. Secondly, they each have a particular ‘scenario’ in which to implant the payment function. E-commerce and social network are both scenarios requiring frequent payment. Alipay and WeChat started from their particular specialties and expanded into O2O offline payment. This shows the heavy reliance of payment on life scenarios. Thirdly, in order to build a new market from scratch, the two players invested heavily to subsidize both merchants and consumers to change their old payment custom. Given the dominant role played by payment institutions in the “three-party” model, benefits from such large investments can be largely kept by the payment institutions. Whereas in NFC payment’s “four-party” model, hardware producers, UnionPay and commercial banks are independent parties with their own interests, so no party will invest so much money and it is difficult for them to reach an agreement on investment as well.

At the end of 2016, UnionPay set the payment standard for QR payment, revealing the failure of NFC payment led by UnionPay. However, as NFC is indeed superior to QR code payment in terms of consumer experience and safety, it still has the opportunity to return to the market in the future when the required hardware can be widely available and the consumption custom can be gradually shifted.

2.6 Case 2: Competition between Alipay and Tenpay

According to “Analysys” database¹¹, size of mobile payment market increased

10. Taobao is the e-commerce arm of Alibaba, the parent company of Alipay.

11. <https://www.analysys.cn>

dramatically during the year of 2017. According to the chart below, market size reached 37.73 trillion RMB at Q4 2017, compared to 12.81 trillion RMB at Q4 2016. Quarterly growth rate have been over 20% in every quarter in 2017, with Q1 seeing the highest growth rate of over 46%.

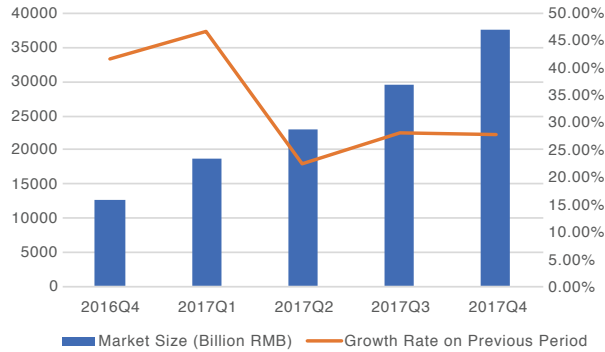


Figure 2-10 Market Size of Mobile Payment 2017

In terms of market share, at Q4 2017, Alipay took 54.26% of the market share of third party mobile payment, while Tenpay (WeChat) took 38.15%. The top two players took over 92% of total market share, while the third competitor, “No.1 Pay” only took 1.33% and Apple Pay did not make it to the top 10. Thus, we can conclude that in China, mobile payment is a “duopoly” market.

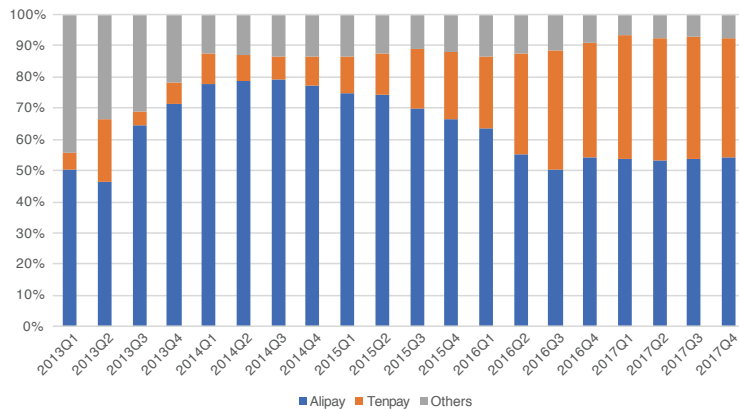


Figure 2-11 Market Share of Mobile Payment 2013-2017

Although Alipay has a larger share than Tenpay, the war is far from ended. Tenpay’s market share had been on an upward trend. It was only 16% during Q4 2015

but grew to 37% at Q4 2016. Alipay was gradually losing its market share since the WeChat Pay entered into the market in 2014. At the same time, other companies have almost been driven out of the O2O payment market. The total market share of other payment institutions decreased from 44% in the first quarter of 2013 to 7.59% in the fourth quarter of 2017.

The core of competition between payment institutions is the competition over life scenarios. WeChat is a mobile social network App. Other mobile social network Apps such as Facebook and Line also tried their ftoe in the payment business but did not cause as big an influence as WeChat did. The first attempt by WeChat was during the Spring Festival of 2014, when WeChat introduced “Red Envelope”. Giving out red envelopes (with cash inside) to relatives is a happy traditional custom of Chinese people. The “Red Envelope” function by WeChat helped to acquire a large number of clients who tie their bank card to their WeChat account. Due to the network effect, payment using WeChat reached a peak within very short time. From the birth of WeChat Pay in August 2013 until the end of 2016, WeChat Pay had accumulated over 600 thousand clients. Secondly, as WeChat transactions happen between acquaintances, relatives, or friends, such social connection between users ensures user stickiness. At the same time, some unbanked clients, such as children and the elderly, can conveniently use WeChat to receive money from their family members and make payments in purchasing activities. Lastly, WeChat made a successful attempt in cooperating with scenario providers (e-commerce platforms), such as Youku, Lashou, Meituan and Dangdangand laying out the network of POS terminal that can scan QR codes. All efforts successfully made WeChat the strongest competitor to Alipay.

Alipay has its own advantages that are hard to replicate. Firstly, Alipay started based on the largest e-commerce empire in China. Secondly, Alipay has built a financial service empire providing a broad range of services, such as Yu’e Bao, ANTSDAQ, Ant Fortune and other applications accessible from Alipay App. Ant Financial has become the largest unicorn company in China and its payment, micro-loans, money market funds are all the largest in their respective market, with all underlying payment activities relying on Alipay. Thirdly, ZhimaCredit has been

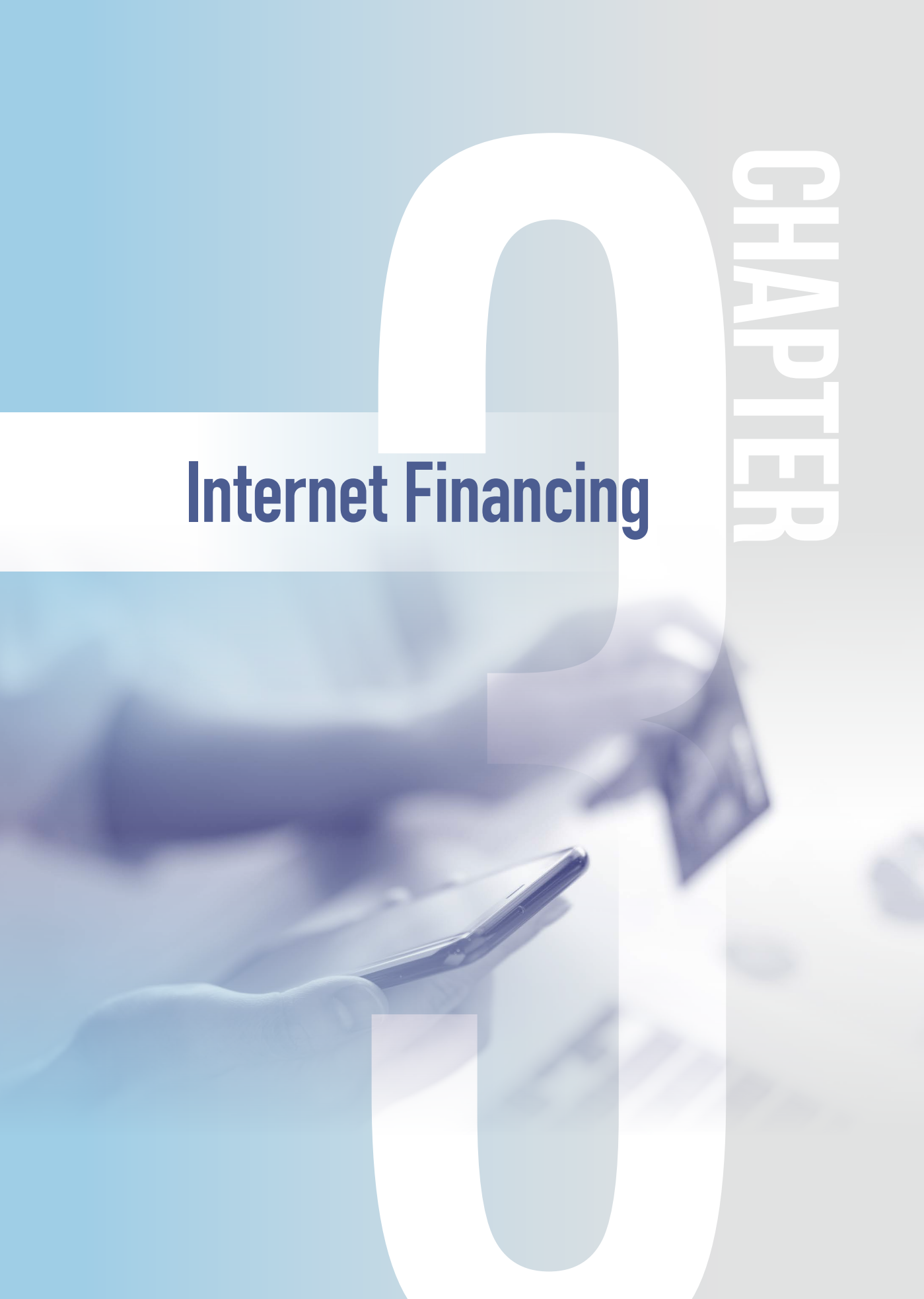
a strong support for Alipay. For the increasing number of online consumers, the awareness of raising ZhimaCredit score will motivate them to use Alipay over WeChat pay¹².

At the end of 2017, active users of Alipay amounted to 475.86 million, compared to over 1 billion active users of WeChat. The battle over mobile payment market between the two top players will remain an intense one for the coming years.

12. According to an Alipay employee, the most frequently asked question on Alipay services is “Why my ZhimaCredit Score has not increased?”. This shows the increasing attention received by ZhimaCredit.

CHAPTER

Internet Financing



Internet financing is the fastest growing segment next to mobile payment within the sphere of internet finance in China. The year 2017 witnessed a phenomenal boom of online consumer finance and “cash loans”. This chapter introduces the current state of the four concepts within internet financing: Peer-to-Peer (hereinafter referred to as “P2P”) lending information intermediary, online microcredit, consumer finance and cash loan.

3.1 P2P Lending Information Intermediaries

P2P lending refers to unsecured loans between lenders and borrowers originated via online lending platforms rather than traditional financial intermediaries. In P2P lending, decisions to borrow or lend are made solely by lenders and borrowers. In a typical transaction, a borrower submits a loan application to a third-party platform, which outlines the amount s/he would like to borrow at what interest rate and for what purposes as well as information concerning his/her current financial circumstances and ability to pay, such as their income and credit limit. Potential lenders will choose among the loan applications, provide funds and earn interests. For lenders and borrowers, P2P lending offers a platform for them to transact without a traditional financial intermediation. So, time efficiency and cost efficiency are achieved for both parties. For the platform, revenue is derived from fees charged for facilitating transactions between lenders and borrowers.

3.1.1 Evolution of P2P Lending

Since the establishment of PPDAl, China’s first P2P lending platform, in 2007, the development of P2P lending can be roughly divided into four phases:

- I. The starting and exploring period (2007-2010). The concept of P2P lending was introduced in China during this period. Back then the booming real estate sector provided a solid support to the economy, industries such as steel, construction materials, coal and manufacturing experienced massive expansions. P2P lending, without policy support, did not attract much interest. Most entrepreneurs in the sector had no experience and their business model was copied from mature

economies such as the United Kingdom and the United States. As a new business concept, P2P lending bore considerable risks. However, there was no massive outbreak of risk events, nor were many cases of failed platforms reported.

- II. The developing period (2011-2012). In this period, with the liberalization of interest rates and the outburst of private lending, P2P lending platforms boomed rapidly. At the same time, becoming aware of the potential risks associated with the private lending market, regulators started to scrutinize and manage risks. Entrepreneurs adopted a hybrid approach of raising funds online and lending funds offline (Online-to-Offline, or O2O), trying to identify local borrowers so that it is relatively easy to assess their creditworthiness to effectively manage risks.
- III. Rapid expanding and risk out-breaking period (2013-2014). During this time, market growth, combined with increased attention of the industry and a relatively laissez-faire approach of the regulators, convinced a large number of institutional investors to adopt a bullish outlook towards the industry. Also, in 2013, as major banks started to tighten up lending, many companies spotted a business opportunity in P2P lending. This year, dubbed as the dawn of the era of internet finance in China, saw a gold rush of internet finance and a P2P lending frenzy in particular. All of these contributed to a sharp rise in the number of platforms, increasingly fierce competition and continuous accumulation of risks. A considerable number of P2P lending platforms crumbled, their owners or executives absconded and over RMB2 billion-worth of investors' funds were at stake, climaxing a concentrated eruption of risks.
- IV. Rectifying and correcting period (2015 - till now). During this period, while reiterating an encouraging stance and policy support to innovations in internet finance, regulatory authorities began to supervise the industry with intensified rigor. With the passage in 2015 of the Guidelines on Promoting Sound Development of Internet Finance, the March 2016 inauguration of the National Internet Finance Association of China and regulators' simultaneous launch of special rectification, P2P lending industry entered a period of adjustment.

History of P2P industry shows that amid its rapid development, P2P lending as a new financing channel enriched the multiplicity of financial markets, improved the efficiency of resource allocation, and produced social benefits.

3.1.2 Scale of P2P Lending

1. Number of Platforms

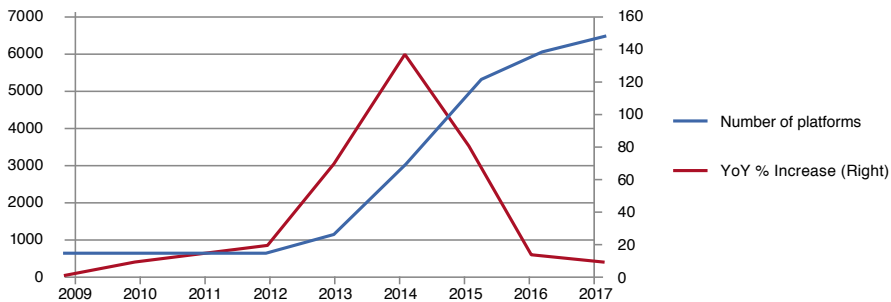


Figure 3-1 Number of P2P Lending Platforms in China

Source: P2Peye Database, available at <https://www.p2peye.com/shuju/>

From 2009 to 2017, the number of P2P platforms in China kept increasing year over year and the upward curve was particularly steep in 2013 and 2014, but the growth leveled off from 2015 onward. Rationality returns and China’s P2P lending sector has entered a new phase of steady and effective growth. By the end of 2017, the total number of P2P lending platforms reached 6229.

2. Problematic Platforms

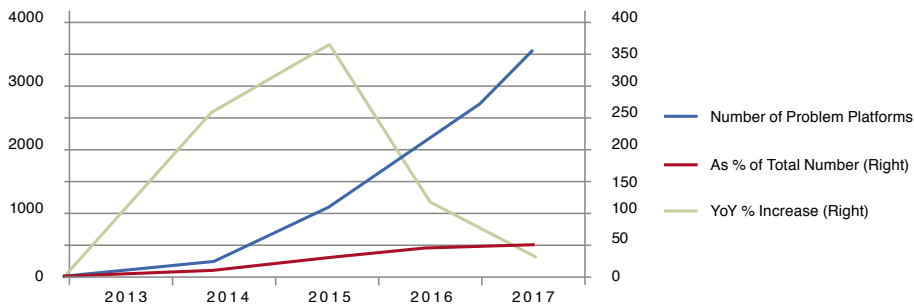


Figure 3-2 Number of Problematic P2P Platforms in China

Source: P2Peye Database, available at <https://www.p2peye.com/shuju/>

Meanwhile, in tandem with total number of platforms cases of problematic platforms also grew. Before 2016, P2P lending was not subject to financial regulation from any specific authority and the industry grew freely and wildly, with cases of failures and malicious absconding frequently adorning headlines. By the end of 2017, approximately 3653 problematic platforms, mostly small and medium-sized ones, had been found to have discontinued operations, have difficulty to meet clients' cash withdrawal demands, or have “run-away (fled)” management/executives. From Figure 3-2, it is astonishing to see that the percentage of problematic platforms out of total number of platforms has been on a rising curve, from 2013 to 2017, even after regulation tightened. In 2017, the percentage of problematic platforms exceeded 50%, a daunting fact of this industry.

3. Transaction Value

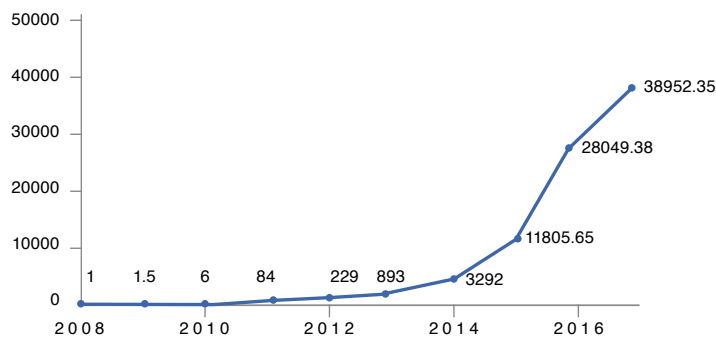


Figure 3-3 Transaction Value of P2P Lending from 2008 to 2017

Unit: RMB hundred million

Source: “Big Data Report on China’s P2P Lending Industry in 2017”, P2P001, available at <http://www.p2p001.com/netloan/shownews/id/16590.html>

As shown in Fig. 3-3, transaction value of China’s P2P lending market has increased rapidly especially during the 2013-2017 period, exceeding RMB3 trillion RMB in 2017, with a year-over-year increase of 38.87%. The average daily transaction value reached 10.672 billion RMB, up by 39.25% year-over-year. By the end of December 2017, the cumulative transaction value of China’s P2P lending totaled RMB 8.33 trillion.

4. Regional Distribution of Platforms

A visibly uneven pattern can be found in lending platforms' geographical distribution, a natural result of the country's complicated diversity across regions in economic development, natural environments, cultures, demographics and household net worth and its associated investment preferences. P2P platforms are mostly clustered in tier 1 metropolises such as Beijing, Shanghai and Guangzhou. These cities are common in their high level and open attitude of local economy, fast prospering of financial innovations and highly proliferating internet and mobile payment. Small and medium-sized businesses abound in these areas, creating insatiable demands for financing and local residents in general have high income and strong propensity for consumption, leading to high participation in online consumer finance and online investment.

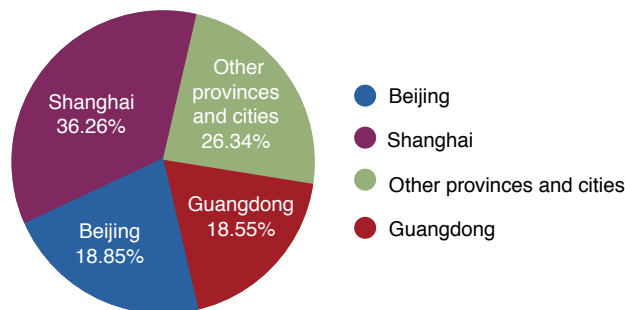


Figure 3-4 Regional Distribution of Transaction Value

Source: "Big Data Report on China's P2P Lending Industry in 2017", P2P001, available at <http://www.p2p001.com/netloan/shownews/id/16590.html>

As shown in Fig. 3-4, top three regions in terms of the total transaction value in 2017 are Shanghai (RMB 1412.412 billion), Beijing (RMB 734.327 billion) and Guangdong (RMB 722.324 billion). Combined, transaction value of the three large cities reached RMB 2869.064 billion, exceeding 73% of the national total.

5. Effective Annual Interest Rates

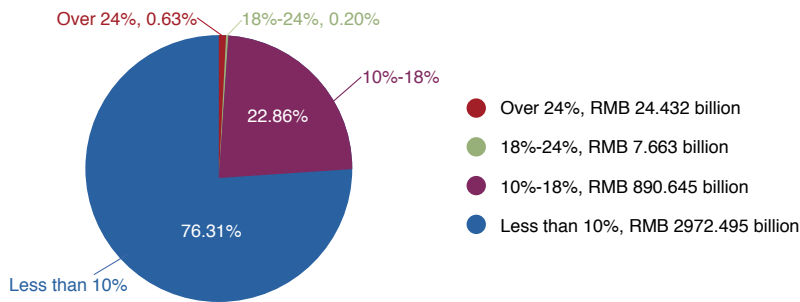


Figure 3-5 Effective Annual Rate Structure of P2P Lending in 2017

Source: “Big Data Report on China’s P2P Lending Industry in 2017”, P2P001, available at <http://www.p2p001.com/netloan/shownews/id/16590.html>

According to Fig. 3-5, in 2017, RMB 2972.495 billion-worth of P2P loans charge effective annual percentage rate (APR) below 10%, accounting for 76.31% of the national total; RMB 890.645 billion charge between 10% to 18%, accounting for 22.86%; RMB 7.663 billion, or 0.2% of the total transaction value charge 18% to 24%; and RMB 24.432 billion, or 0.63%, charge over 24%.

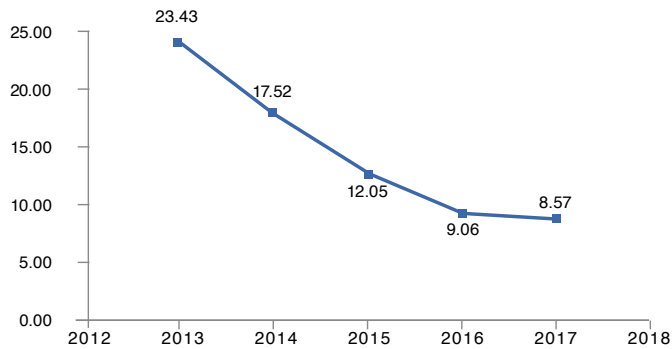


Figure 3-6 Average APRs of P2P Lending 2013-2017

Unit: %

Source: “Big Data Report on China’s P2P Lending Industry in 2017”, P2P001, available at <http://www.p2p001.com/netloan/shownews/id/16590.html>

Fig. 3-6 shows the trend of P2P lending APRs between 2013 and 2017, showing a downward curve. In 2017, the average APR of P2P lending was 8.57%, down by 0.49 percent compared to 2016 and down by 3.48 percent compared to that of 2015.

6. Average Loan Term

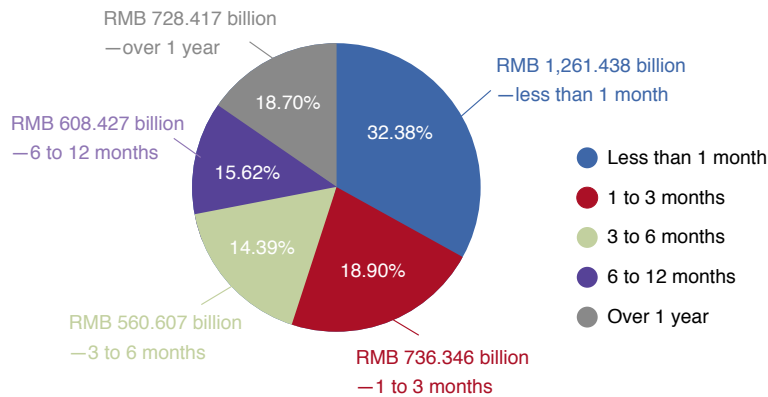


Figure 3-7 Distribution of Average Loan Terms of China's P2P Lending in 2017

Source: *Big Data Report on China's P2P Lending Industry in 2017*, P2P001

In 2017, 1261.438 billion RMB of P2P loans, or 32.38% of the national total, has average loan term of less than 1 month, 736.346 billion RMB has maturity from 1 to 3 months, accounting for 18.90%, 560.607 billion RMB from 3 to 6 months, accounting for 14.39%; 608.427 billion RMB 6 to 12 months, accounting for 15.62%; and 728.417 billion RMB with maturity over 1 year, accounting for 18.70%. In total, over 81.3% of loans are short-term, for less than 1 year.

3.1.3 Operation Modes of Platforms

The operation of a typical P2P lending structure usually involves three parties: borrowers, investors and the P2P platform. The platform is the intermediary providing information to the two parties in a transaction and does not participate in the lending activity. In China, a transaction has two types of characteristics: business channel (online, offline and hybrid) and risk control (guarantee, insurance and collateralization).

1. Type I: Online without Guarantee

Type I transactions are completed by matching borrowing projects and lenders online. The P2P lending platform acts as an information intermediary and conducts

online review of borrowers' information and help match borrowers with lenders. The platform does not provide any guarantee, nor involve in post-transaction funds management, nor assume the responsibility of indemnifying investors in case of default. Type I transactions have cost and operational efficiency and are applicable to almost all industries. The platform bears very low risk. The high efficiency and low risk can transfer to low financing cost and high investment yield to clients on both ends of the transaction, therefore to some extent fulfilling the promise of boosting financial inclusion. However, without any guarantee, the investors have to bear virtually all the risks in case of communication issue, late payment, or even default once the loans are originated. A typical type I platform is PPDAl.

2. Type II: Hybrid with Guarantee

In type II transactions, the lending platform provides guarantees to investors by cooperating with a third-party guarantee company. Should any risk occur to investors' funds, investors would have the platform's partners compensate the loan principal, interests and late charges, etc. in order to protect the investors. Type II transactions use hybrid (online-to-offline, or O2O) business channels. The platform looks for lenders online, while the third-party guarantee company and microcredit company capitalizing their physical existence to look for borrowers and undertake due diligence offline. Qualified borrowers which have passed the onsite verifications will be recommended to the platform. Loan applications of approved borrowers will be published on the online platform, where bidding and transactions will take place. A third-party microcredit company or guarantee company in partnership with the platform will assume the responsibility of full guarantee or joint liability. Thus the platform has high requirements on its partner's (microcredit companies and guarantee companies) ability of risk assessment and control. Examples of type II transaction platforms include Yooli and Lufax.

Lufax, in cooperation with a financing guarantee company under Ping An Group¹³, offers unsecured P2P lending products such as "Wenying An e series". Once

13. Ping An Group is one of China's largest financial holding group and is Lufax's corporate parent.

a repayment is overdue for or over 80 days, Ping An Group's financing guarantee company will compensate the investors for the whole amount overdue, including principal, interests and late charges and report the borrower's default status to the Credit Reference Center of the People's Bank of China.

3. Type III: Online with Guarantee/Collateralization

Platforms that adopt guarantee mode team up with qualified guarantee companies and default risk will be transferred to outside institutions. An example is RRJC.com. Platforms that adopt collateralization mode demand collaterals from borrowers, such as properties and automobiles, to secure repayment. HLWJD.cn is a good example of this mode. Both modes can mitigate risks to lenders, but they also have limitations. As for the "guarantee" mode, it increases financing costs; and also, regulation requires the leverage ratio of a financing guarantee company (guaranteed assets over the asset size of the guarantee company) not exceeding 10, meaning that the demands for asset size of guarantee companies will increase in tandem with the size of loan portfolios. It is also possible that the amount of default is too high for the guarantee companies to cover. As for the latter, collateralization lowers default risk thus loan interest rates, reducing yield income for lenders.

3.1.4 Issues of Concern

Problems started to occur as the P2P industry prospered and quickly expanded. Four problems are of particular importance.

1. Homogeneous marketing

Many P2P companies still focus their marketing efforts on sales promotion, too obsessed with signing up first-time users while overlooking customer retention. On their websites, P2P companies tend to highlight average returns of their products in an attempt to attract potential investors. Such tendency, however, is a double-edged sword and could result in adverse selection and moral hazard problems because it may lead investors to focus upon returns only without prudential risk assessment.

2. Inadequate data utilization

The P2P lending industry in its entirety is not making adequate efforts in the mining, analysis and use of customer data. This issue is especially acute in building credit reference mechanisms, which is the key in improving marketing and service efficiency in this industry.

3. Overemphasis on the lending end while ignoring the borrowers' needs

Many P2P companies are preoccupied with soliciting funds from general public and their marketing efforts and budgets are mainly invested in the lending end, trying to entice investors with attractive returns, whereas the borrowers' effective demands are more often than not neglected. Therefore platforms' requirements on the quality of the underlying projects are compromised.

4. High potential risks embedded in platforms.

Low barriers to entry result in an industry where players are of significantly varied qualities and less-than-decent management, problematic internal control and risk management. This creates massive hidden risks. Now that the industry is being restructured, the number of problematic platforms has been increasing. Strengthening the overall regulation of P2P lending from all aspects is of highest importance.

3.1.5 Regulation of P2P Lending Industry

A decade has past and regulators' attitude towards P2P lending have changed from promoting and encouraging to rectifying and correcting. A new era of regulation dawned in 2015 and by 2017, various regulatory rules had been implemented.

1. Preliminary Phase of P2P Lending Regulation

The period from the emerging of P2P lending in 2007 to 2013/14, is dubbed by the industry insiders as the years of "Barbaric Growth" of P2P lending in China. Regulation of the industry was very gentle, thus this period can be called the "preliminary construction phase" of P2P regulation. A more prevailing attitude

toward P2P lending was to view it as an exciting novelty with great expectations that inspires confidence and optimism. Although experts, academics and policy makers realized that the industry was bound to have some risks and introduced a number of remedial measures, no specialized law or regulation was pronounced. Rather, whether and how to regulate were debated and the theoretical foundation and broad prospects of internet finance development were proposed. This approach created a relatively relaxed policy environment for the development for internet finance.

The remedial measures are concluded in Table 3-1.

Table 3-1 Remedial Measures on P2P Lending

Time	Regulating Body	Details
August 2011	China Banking Regulatory Commission (CBRC)	“Notice of the General Office of CBRC on Warning of Risks Associated with Peer-to-Peer Lending”: firstly, CBRC warns seven major risks in the operations of China’s P2P lending platforms, considering the overall conditions of China’s financial industry; secondly, for safety reasons, CBRC requires that banking institutions sever ties with P2P lending platforms by setting up firewalls, managing practitioners and preventing reputation risks.
August 2013	China Association of Microfinance (CAM)	“P2P Micro-credit Information Consultative Service Institutions” Self-Regulatory Pact” was issued.
December 2013	People’s Bank of China (PBOC)	Reiterated the bottom lines for the P2P lending industry, including no self-guarantee, no pooled investment vehicles, no serving persons who aren’t eligible for loans and no raising funds through fraud.
early 2014	General Office of the State Council	“Notice on Issues Concerning Strengthening the Supervision of Shadow Banking (Document No. 107)”, mandates that internet finance platforms comply with all financial laws and regulations, defines, for the first time, P2P lending as a shadow banking activity and authorizes the central bank to designate the regulatory body and draft detailed regulatory rules for P2P lending. It also clarifies the legal status of internet finance platforms and encourages such platforms to be connected to the credit reference system.
September 2014 to early 2015	CBRC	“Ten Principles for P2P lending regulation”. The unveiling of a draft plan for P2P lending regulation in October symbolizes the inclusion of the industry into CBRC’s jurisdiction. This, along with the establishment of CBRC’s Financial Inclusion Affairs Department as determined in early 2015, precludes an era of comprehensive regulation of P2P lending.

Despite the light touches of remedial measures, there were no regulations in the industry before 2015. Therefore, the era before 2015 was marked by irrational exuberance and the mounting of chaotic mess.

2. Evolution and Present State of China's P2P Lending Regulation

1) The *Guiding Opinions*

In July 2015, the central bank and other nine ministries and commissions jointly issued the *Guiding Opinions* on Promoting the Healthy Development of Internet Finance (hereinafter referred to as the “*Guiding Opinions*”), heralding a new era of internet finance under regulation. In general, the document serves as the “basic law” for the P2P lending industry. It is aimed to regulate all internet finance institutions, including P2P lending platforms, in line with the general requirements of “encouraging innovation, preventing risks, seeking advantages and avoiding disadvantages and healthy development” and the regulation principles of “law-complying, appropriate, classified, coordinated and innovative”. The *Guiding Opinions* appoints CBRC as the supervisor of P2P lending; affirms the legitimacy of P2P lending and clarifies the nature of P2P lending platforms as information intermediaries providing information services between borrowers and lenders and strictly forbids credit enhancement. The document also mandates that P2P lending platforms select qualified banking institutions as fund custodians to manage and supervise clients’ funds to separate clients’ funds from platforms’ own funds and that custody accounts of clients’ funds be subject to independent audit with audit results disclosed to clients. In general, the regulators are supportive and encouraging towards P2P lending.

2) The *Interim Measures and 3 Sets of Guidances*

On August 24, 2016, CBRC, the Ministry of Industry and Information Technology (MIIT), the Ministry of Public Security (MPS) and the Cyberspace Administration of China (CAC), jointly issued the Interim Measures for the Administration of the Business Activities of Online Lending Intermediary Institutions (the “Interim Measures”), marking an important new starting point of P2P lending regulation and also a new milestone of the industry’s evolution. Using a “negative list”, the Interim Measures specifies thirteen regulatory “red lines”, including no lending, no equity crowdfunding, no acceptance of public deposits, no pooling of funds and no debt transfers, etc.

The Interim Measures is of long-term significance to the healthy, orderly and sustainable development of China's P2P lending industry.

Firstly, the Interim Measures has reaffirmed the legality and importance of P2P lending in the financial market. The first clause of the Interim Measures cites a number of laws and regulations as the legal ground of the Interim Measures.

Secondly, the Interim Measures clearly and specifically defines the scope and boundaries of P2P lending. As stipulated in Clause 2, a P2P lending information intermediary refers to a "financial information intermediary legally established to specialize in information intermediary services for P2P lending". As an information intermediary, P2P lending platforms mainly provide information collection, publication, interaction, credit evaluation and loan matching for direct lending. In other words, such platforms are not allowed to raise funds for themselves, lend, or provide credit enhancement services. Those, together with "ten obligations" specified in Clause 9 and "thirteen red lines" set forth in Clause 10, clearly marks the boundaries of P2P lending.

Thirdly, the Interim Measures imposes detailed standardized information disclosure requirements of P2P lending and defines the duties and obligations of parties involved in transactions in order to protect lawful rights and interests of all parties. Proper information disclosure can mitigate the information asymmetry in the P2P lending market and reduce risks. In spite of the requirement of full and appropriate information disclosure, no state secrets, trade secrets and personal privacy shall be leaked.

Fourthly, the Interim Measures raises the barrier to entry of P2P lending industry. The industry adopts a filing administration regime. According to Clause 5 of the Interim Measures, before undertaking any business activity, a P2P lending information intermediary shall "complete filing at the local financial supervisor of the jurisdiction where it is registered for incorporation". After filing, a telecommunication business operation permit is required before the said platform may commence operation.

Finally, the Interim Measures confirms the regulation framework for P2P lending

industry (see Fig. 2-6). Organizations within the regulatory framework of the P2P lending industry include China Banking Regulatory Commission (CBRC), Ministry of Industry and Information Technology of the PRC (MIIT), Ministry of Public Security (MPS), Cyber Administration of China (CAC) and local financial regulatory offices¹⁴.

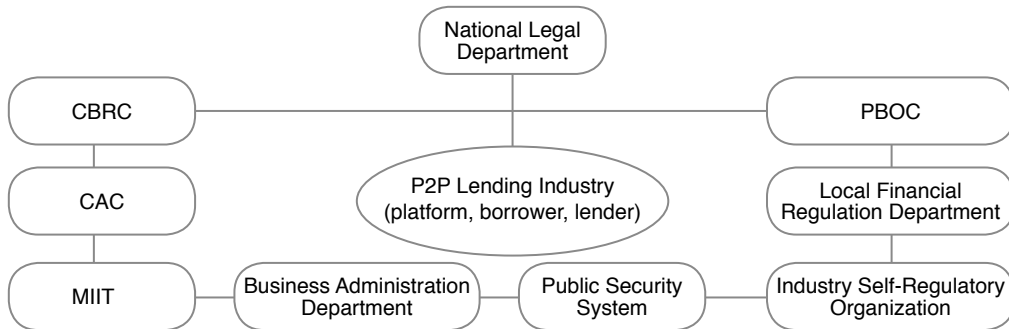


Figure 3-8 Regulation Framework for China's P2P Lending Industry

3) “1+3” Regulation Mode

The Interim Measures for the Administration of the Business Activities of Online Lending Intermediary Institutions can be considered as the “constitution” for P2P lending and it was backed up with 3 Guidances which impose specific requirements on custody, filing and information disclosure.

The *Guidelines on Online Lending Fund Depository Business* issued in early 2017 defines custody services from four aspects, namely, the basic concept and principle, the conditions required for clients and custodians, the responsibilities and obligations of all parties involved and the specific operation rules.

The Guidelines on Registration Management of Online Lending Information

14. CBRC, as a central financial regulation authority, is responsible for formulating uniform, standardized development policies, measures and regulation systems on P2P lending activities, instructing local financial supervisors to scrutinize P2P lending activities and resolve risks and directing national self-regulatory body of the industry. MIIT is responsible for regulating telecommunication business involved in P2P lending; MPS is responsible for the cyber safety supervision of P2P lending activities and cracking down financial crimes involving P2P lending; CAC is responsible for regulating financial information services and internet information services; and local financial supervisors are responsible for conducting standardized guidance, filing management and risk prevention and resolution for P2P lending platforms and instructing P2P lending self-regulatory bodies under their jurisdictions. In addition, provincial P2P lending self-regulatory bodies may educate members to abide by laws, regulations and P2P lending-related regulation provisions, accept complaints and whistleblowing and carry out self-regulatory inspections.

Intermediary Institutions issued by CBRC in late 2016 consists of application for filing by newly established institutions, administrative filing for existing institutions and post-filing administration, imposing qualification requirements for filing of P2P lending institutions.

According to the *Guidelines on Information Disclosure of Business Activities of Online Lending Information Intermediary Institutions* issued in August 2017, the information to be disclosed covers the information that shall be disclosed during the whole process of P2P lending activities, including basic information about lending institutions, their operation information, project information, information of major risks and information on consumer complaint channels. Different receiving parties are allowed to access different sets of information out of concerns of the protection of personal privacy, trade secrets and state secrets. Also, considering differences in the importance of information, the frequency of change and disclosing parties, different time and frequencies of disclosure are provided for, so as to help disclosing parties effectively fulfill their disclosure obligations and ensure that receiving parties can effectively know and grasp the disclosed information in a timely manner.

With the enforcement of the “1+3” regulation framework, China’s P2P lending industry entered an orderly development stage. Proper regulation can fundamentally improve the condition of the industry and reduce risks. Only high-quality platforms would survive regulation and market competition, directing the industry towards a healthy route.

4) Notice on Conducting Compliance Checks for P2P Network Lending Agencies

In August 2018, Office of the Leadership Team for the Special Campaign against Peer-to-Peer Lending Risks releases the Notice on Conducting Compliance Checks for P2P Network Lending Agencies, together with a checklist comprising of 108 issues, marking a national standard on P2P compliance. The “108” checklist is based on the “1+3” framework with more practical details. One of the purposes of this regulation is to highlight the “information intermediary” (rather than “credit intermediary”) role of the P2P platforms.

3.2 Online Microcredit

Online microcredit appeared in China in 2010, but its first official definition was introduced in 2015 by PBOC and nine other ministries in the *Guiding Opinions* on Promoting the Healthy Development of Internet Finance and more recently in 2017 by CBRC's Office of the Leadership Team for the Special Campaign Against P2P Lending Risks: Online microcredit are micro loans provided to customers via internet channels by internet companies through microcredit firms controlled by them. CBRC¹⁵ added that, online microcredit business is predominantly online: borrowers are acquired online; information regarding their operating and consumption were gathered through online scenarios and used for credit analysis purposes; and that the whole lending process was completed online.

Microcredit firms, defined by CBRC in the *Guiding Opinions* on Pilot Operations of Microloan Companies, are limited liability companies or limited companies incorporated by natural persons, business entities or other social organizations to undertake small and micro lending while prohibited from taking public deposits. Thus, online microcredit is a type of lending services offered by microcredit firms with online microcredit licenses.

3.2.1 Features of Online Microcredit

Online Microcredit business distinguishes itself from traditional banking services in its close ties to online payment services and real-life scenarios such as tourism and shopping. Another difference lies in the high speed of back office processing of data and credit verification.

There are four distinctive features of online microcredit, compared to other means of financing.

Firstly, online microcredit operations are undertaken by microcredit companies, but can achieve broader geographic reach through internet. Secondly, online microcredit is instant and of small amounts, from a few hundreds to tens of thousands

15. In its *Special Rectification Plan on Internet Microcredit Business Risk for Small-sum Loan Companies* (8, Dec, 2017)

and can be approved very quickly. Thirdly, internet microcredit loans are loans based on credit, unsecured, without any guarantee or collateral. Finally, the interest rate is close to the “red line”¹⁶, but the effective rate can be higher due to hidden charges. One example is the “Qing Chun Bao” from the platform of “58 money”. It claims that for loans from RMB 500 to 3000, the rate is 0%. However, it is found that a 3% management fee per month is applicable, equivalent to 36% p.a. Plus, the platform also charges security deposit of 10%-15%, making the effective rate over 40%.

3.2.2 Development of Online Microcredit

1. Evolution

China’s first genuine online microcredit company is Zhejiang Alibaba Microcredit Co., Ltd, which was established in June 2010. With the maturity of the industry and related regulations, other provinces followed up. Chongqing, Guangdong, Hainan, Shanghai and Jiangxi started to issue online microcredit licenses.

According to WDZJ.com based on non-comprehensive statistics, up to 22 Nov 2017, 213 licenses have been granted to online microcredit companies (including those that have not started business) nationally and among them 189 have finished business registration. The number of new internet microcredit licenses increased in 2016 and burst in 2017.

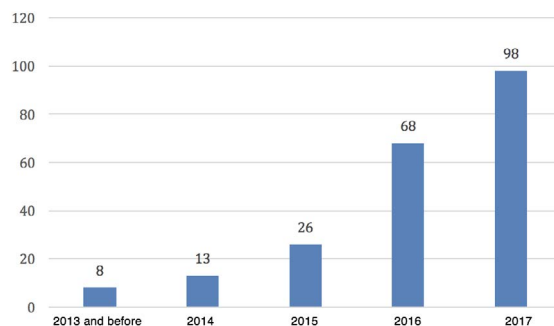


Figure 3-9 New Online Microcredit Licenses

As of 2017.11.22, Source: www.wdzt.com

16. The regulatory threshold of interest rate is 36% p.a., beyond which are not protected by law.

2. Regional Distribution of Online Microcredit Companies

Also citing WDJT’s non-comprehensive statistics, as of November 22, 2017, 213 licensed platforms were mainly distributed in 20 provinces and cities. With 47 located within its jurisdiction, Guangdong boasts the largest number nationwide, followed by 38 in Chongqing, 26 in Jiangsu, 24 in Jiangxi and 18 in Zhejiang. Altogether, the top 5 regions account for 71.83% of the national total.

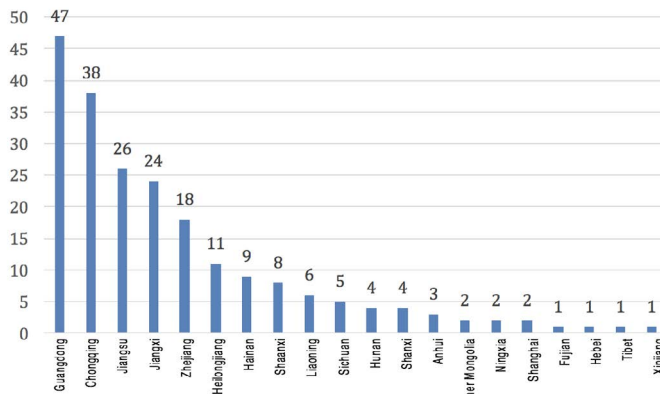


Figure 3-10 Geographic Distribution of Online Microcredit Companies

As of 2017.11.22, Source: www.wdji.com

3. Number of Employees and Background of Shareholders

As of May 20, 2017, online microcredit firms hired 6032 employees in total nationally, accounting for 5.53% of the total workforce of microcredit industry. Among them 2111 were in Guangdong, ranked first among all provinces, accounting for 35% of all online microcredit practitioners nationwide and 22.03% of all microcredit industry employees in Guangdong. Chongqing comes second, with 1573 practitioners.

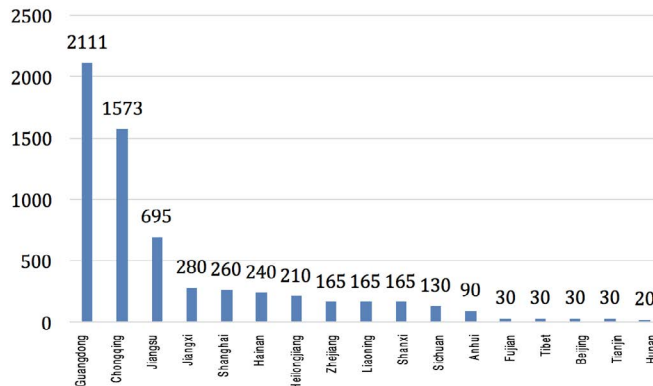


Figure 3-11 Employment of Online Microcredit Companies

Source: www.wdzj.com

On average, each online microcredit company hires 45 practitioners. Three provinces with the highest average number of employees are Sichuan (59, 132% of national average), Chongqing (58.27, 130%) and Guangdong (54.14, 121%).

According to WDJ's incomplete data, there are 199 platforms with complete shareholder information as of 22 Nov 2017. Among them, ninety nine (49.75% of the total number, same below) are directly or indirectly held by public listed companies. The number of platforms that are directly held is 48 (24.12%) while 51 (25.63%) are indirectly held. A number of platforms are held by enterprises such as Wanda and Haier. Thus, it seems that it is easier to obtain online microcredit licenses by public listed or prominent companies.

Currently the majority of online microcredit licenses are held by listed companies and industry leaders, some of which may hold multiple licenses. For example, Hanhua Financial holds 5 licenses, Ping An and JingDong each has 4 and Ant Financial and Suning have 3 each.

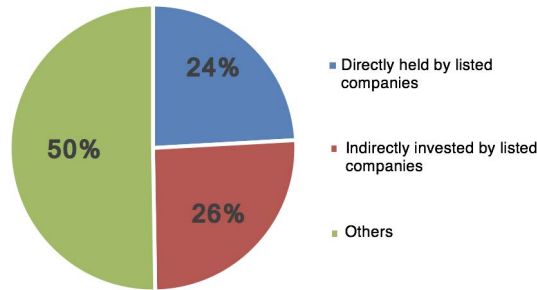


Figure 3-12 Shareholders of Online Microcredit Companies

Source: www.wdzt.com

3.2.3 Regulation of Online Microcredit Firms

1. General Rules from CBRC

The major provisions on microcredit firms include Guidelines of China Banking Regulatory Commission and the People’s Bank of China on Pilot Programs of Microcredit Companies and the Notice of the General Office of China Banking Regulatory Commission on Pilot Programs of Microcredit Companies, on the basis of which regional governments have introduced their own specific measures and notices. Online microcredit platforms should comply with existing regulations on microcredit companies with particular attention to the following:

- Non-return deposit is prohibited;
- All the registered capital should be paid-in capital in cash. The registered capital should be no less than RMB 5 million for a limited liability company and no less than RMB 10 million for a limited company. Shares held by a single natural person, business entity and other social organization and its related party should not exceed 10% of the total registered capital.
- The main sources of funding are the capital base contributed by the shareholders, financial endowment and funding from no more than two banking institutions.
- Funding from banking institutions should not exceed 50% of net asset.

As the sector grew, the leverage requirement proved to be a major constraint,

resulting in a development bottleneck. Therefore, local governments began to relax the restrictions on leverage in an orderly manner. A notable example is Hunan, where the leverage ratio (bank loans/net capital) can be as high as 300%, the highest in the nation.

2. Regulation Regarding 4 Major Services

i. Online Lending

Originating loans via internet platforms is the most important feature of online microcredit companies. Since the concept of online microcredit was first proposed in the *Guiding Opinions on Promoting the Healthy Development of Internet Finance*, issued by PBOC and other nine ministries in July 2015, Jiangxi, Jiangsu, Chongqing and Guangzhou have introduced special provisions on the regulation of online microcredit. Whereas some other regions, including Shanghai, Zhongguancun in Beijing, Zhejiang, Shenyang and Fujian Free Trade Zone (FTZ), despite the absence of special measures, have affirmed their support to the growth of online microcredit in microcredit-related provisions or notices. Still more regions, including Heilongjiang, Harbin and Hainan, although not having explicitly allowed online microcredit, actually have approved the establishment of online microcredit companies.

ii. Financial Asset Transfer

Asset transfer, an innovative means of financing for traditional microcredit companies, refers to the process that a microcredit company, in collaboration with banking institutions or regional financial asset trading platforms, sells their assets with an intention to repurchase. Regions that were the first to permit such endeavors, subject to approval, include Guangzhou, Chongqing, Heilongjiang, Hainan and Zhejiang. Detailed provisions vary in different regions. However, all regions require that microcredit companies undertake asset transfer only on qualified trading platforms including banking institutions and local financial asset trading platforms or exchanges and that online microcredit companies cannot sell their assets at will.

iii. Investing

Microcredit companies can also invest their own funds in equity, venture capital and other forms. Regulatory requirements vary from region to region and Chongqing, Jiangxi, Jiangsu, Heilongjiang and Hainan are the first batch of provinces that allow microcredit companies to undertake investment activities.

iv. Financing Guarantee

Financing guarantee refers to an agreement between the guarantor and the creditor (such as banks) under which the guarantor promises to fulfill guarantee obligations as defined by law in case that the guaranteed party fails to honor his/her debt obligations to the creditor. Microcredit companies in general are prohibited from providing guarantees to third parties, with an exception of Jiangsu¹⁷.

3.2.4 New Trends in Online Microcredit Regulation in 2017

Regulation regarding online microcredit tightened dramatically in 2017. On 21 Nov, the General Office of the Leadership Working Team for Special Rectification on Risks in Internet Finance issued the *Notice on Suspending the Approval of Establishment of Online Microcredit Companies (the "Notice of Suspension")*. The document mandates that "Effective as of today, all levels of regulatory authorities governing microcredit companies shall not approve the establishment of new online microcredit companies and newly established microcredit companies are not allowed to conduct business outside the provinces (municipalities, autonomous regions) where they are registered". Among the country's over 9000 microcredit companies, only 240 are chartered as online microcredit companies, meaning 97% of all microcredit companies can only conduct lending business offline. Among the over 2000 online lending platforms, only 12% are qualified to conduct online lending and other platforms are unlikely to obtain charters to comply with the new regulation.

In December 2017, the CBRC's Office of the Working Team for the Special

17. Jiangsu Province rules in its 2015 *Notice of the Provincial Financial Services Office on Further Supporting the Sustainable and Healthy Development of Microcredit Companies* that internet technology microcredit companies are allowed to provide financing guarantees and are also allowed to provide agent services to financial institutions, a unique stance among all provinces in China.

Rectification against Internet Lending Risks issued the Implementation Plan for Special Rectification on Risks in Internet Microcredit of Microcredit Companies (the “Rectification Plan”). It requires rectification actions in the following 11 areas: strictly manage permitting rights, reexamine business qualification on online microcredit, shareholder management, on-balance sheet financing, asset-backed securitization and other ways of financing, comprehensive and effective interest rate, loan management and loan collection, scope and types of loans, business cooperation with third parties, information safety and illegal operation.

3.3 Consumer Finance

Consumer finance refers to loans provided to individual consumers for consumption purposes. Usually, consumer finance covers all types of lending to individuals for life-related expenses, including auto loans, food, clothes, home appliances and student loans, among others. Housing mortgage is not generally regarded as a consumer finance product. Consumer finance loans are usually short-term, of small amounts and with particular consumption scenarios.

3.3.1 Types of Internet Consumer Finance Platforms

Internet consumer finance is characterized by online client acquisition and online consumption scenarios. E-commerce platforms, consumer finance companies and some P2P platforms offer such services. Based on the scenarios into which consumer finance services are tied to, there are three types of internet consumer finance platforms.

1. E-Commerce Centered Platforms

Two notable examples of e-commerce centered internet consumer finance platforms include: JD Finance’s Baitiao (literally white slip, a common Chinese term for IOU) and Ant Financial’s Huabei (also called the “Ant Check Later”).

Baitiao is offered to JD Mall customers to allow them delay payment or pay by installment. It is offered to clients of JD Mall who meet certain criteria and the embedding scenario has to be purchasing activities. Similarly, Huabei is offered to consumers on Taobao, Tmall and other related platforms associated with Alibaba. The amount of credit varies based on ZhimaCredit Score, provided by Ant Financial's credit reference arm using Big Data¹⁸. Sources of funding for both Baitiao and Huabei include companies' own fund, inter-bank lending, institutional CDs (certificate of deposits) and ABS (asset-backed securitization) of these two products.

Such services benefit consumers. Compared to traditional consumer lending, Baitiao and Huabei can process credit checking based on large amount of data almost instantly and paper-free. They also benefit the E-commerce businesses by lowering consumption threshold and increasing total sales volumes. At the same time, the internet consumer finance platforms earn interest income. This business model has unique advantage in risk control because consumers are existing clients on the E-commerce platform and have existing personal data based on which to undertake credit analysis. Such risk-control mechanism makes Baitiao and Huabei have lower default rates compared to credit card portfolio of commercial banks.

Compared to the two types of platforms below, E-commerce centered platforms have the advantage of providing wider purchasing options to a larger consumer base. The high level of platform size, funding size and client base size makes it hard to be replicated.

2. Conglomerates Centered Platforms

Conglomerates centered internet consumer finance platforms are originated by non-financial conglomerates. Adding consumer finance services (after obtaining consumer finance company license) helps to boost revenue from their traditional business lines. Most of the consumer finance services operate both online and offline. Examples of such consumer finance platforms are listed in Table 3-2.

18. Data includes credit history, behavior preferences, ability to service the contract, characteristics of personal identity and social networks, etc.

Table 3-2 Conglomerate-Centered Internet Consumer Finance Companies

Company Name	Industrial Background	Main Products
Haier Consumer Finance	Haier Group, Haier Finance, Red Star Macalline, Green Town Ecommerce	HaikeLoan, Lingyuangou (Zero Down Payment)
Suning Consumer Finance	Suning Group, Jiangsu Yanghe Distillery, Jiangsu Simcare Pharmaceutical	Renxingfu (Pay as You Will), Lingqiandai (Pocket Money Loan)
Ma Shang Consumer Finance	Chongqing Department Store, Wu Mart Holding, Zhejiang China Commodities City Group	Mashangdai (Instant Loan)
Huarong Consumer Finance	Hefei Department Store	Haojie (Easy Borrow), Shanjie (Flash Borrow)

The consumer finance products provided by above companies/platforms are similar to that of the E-commerce centered platforms, i.e. delayed payment or installment purchase. Compared to E-commerce centered platforms, conglomerate-centered platforms have smaller client base and thus smaller data sets to build robust risk assessment models. Thus, data collection and risk control might be less efficient for conglomerate-centered platforms.

3. Non-Scenario Platforms

Two types of non-scenario platforms are commonly seen. The first type is a third-party payment or credit reference system associated with outside E-commerce platforms. They use Big Data from outside E-commerce companies and risk scoring models to provide installment payment and small consumer loans services. One example is the payment system Lakala. The second type is pure online consumer finance platform, with associations to E-commerce platforms. Funding is gathered from online loans; examples include Qufenqi, Fenqileand Xuehaodai etc. Due to the lack of self-owned consumption scenarios, however, consumers' data are harder to obtain and thus might lead to greater risk control problems.

3.3.2 Impact of Internet Consumer Finance

On one hand, internet consumer finance complements traditional consumer

finance. It lowers the threshold of consumer finance, serves consumers previously not covered by traditional financial system and provides a large selection of financing products. Big data also enhances risk control. On the other hand, internet consumer finance forces traditional consumer finance business into reform and revolution. Competition makes traditional consumer finance providers improve their products and services to try to maintain their market share. It is hoped that healthy competition can expand the market size and benefit end consumers.

3.4 Cash Loan

Cash loan in China is a special type of small-sum, high-interest, short-term loan, characterized by “no scenarios, no requirement of proceeds usage verification, no borrower restriction and no collateral”. In general, cash loans have higher default rates, therefore high interest rates and additional fees are needed to sustain the industry.¹⁹ Such cash loans in China resemble the Payday loans from the US, which only need the applicant to prove that he/she has a job and the loan would be granted upon showing of a pay-slip. No thorough background investigation would be done.

In China, the online cash loan blossomed in 2013, when some P2P internet platforms started business on small-sum, short-term loans. From 2016, internet finance, especially P2P online lending developed rapidly. In March 2017, 4.78 billion RMB cash loans were originated, compared to 157 million for January 2016. It is estimated that the size of the cash loan market is now about 600 billion to 1 trillion RMB. As of 19 November 2017, there were 2693 cash loan platforms operating in the market²⁰.

19. Some market practitioners argue that there are two types of cash loans on the market, based on the different credit reference method, interest rate and rate of default: “cash loans with rigorous risk management” and “problematic cash loans”. The former includes cash loans from commercial banks (such as Kuaidai from China Construction Bank, Shandiandai from China Merchant Bank, etc.), cash loans from consumer finance companies and internet cash loans based on Big Data and attached with life scenarios, such as Jiebei from Ant Financial and Weilidai from Tencent. The second type of cash loans are characterized by higher default rates and higher effective interest rates, facing lower income groups such as blue-collar workers or students.

20. Source: Report on the development of cash loan, National Committee of Experts on the Internet Financial Security Technology

3.4.1 Characteristics of Cash Loans

Following characteristics are found in the highly controversial topic of cash loans. Firstly, it focuses on user groups not previously covered user. As mentioned above, lower income groups, such as blue-collar workers and students are not attractive to traditional financial service companies. This group lacks credit record information in the central bank and they only require small loan. By September 2016, PBOC's personal credit reference system had maintained credit history of 412 million individuals, out of 899 million individuals on their name list. This indicates that the majority of individuals were previously unable to obtain personal loans from the traditional financial system. The recently booming cash loans just meet the needs of this group.

Secondly, due to the lack of credit history of this group and ineffective credit reference ability and risk control mechanisms of cash loan platforms, a higher than usual effective interest rate is charged. Statistics²¹ show that on average, effective annual rate can be 150% and sometimes as high as 200% p.a., significantly higher than the 36% legal threshold. At the same time, loan amount is significantly low, normally below 10 thousand RMB.

Thirdly, as mentioned above, such loans are guarantee-free, collateral-free and scenario-free. Cash loan users do not need to find guarantees or provide collaterals for their loans. As the loans are not attached to particular life scenarios, the proceeds of the loan would not be limited to certain purposes.

3.4.2 Major Issues in Cash Loans

1. Inefficient Risk Control

As official credit history data of most cash loan applicants are not available from PBOC, cash loan platforms rely heavily on their user-provided data, such as mobile phone operator passwords, credit card query passwords, vehicle registrations, driver's licenses and education diplomas. Then it is an onerous and ineffective telephone

21. Exclusive: List of 50 Cash Loan Platforms, Annualized Interest Rate up to 391%, P2Peye Database

verification process. Most cash loan platforms lack the funds and expertise to build sophisticated risk control systems. The large number of potential applicants and difficulty to obtain external credit information makes building risk control system a mission impossible.

Starting in 2016, a risk control product called “peer crawl” was created. It can be used to retrieve all types of personal data from platforms such as WeChat messages and phone records. Although its use is not welcome by most platforms (and then these platforms started anti-crawling initiatives), such technology indeed supported the online microcredit industry’s Golden Age. With the passage of Cyber Security Law (effective on 1 June 2017), tens of thousands of data interfaces were shut down, a large number of data sources were cut off and 90% of the “crawlers” were about to vanish. Without strong support from the “crawlers”, online cash loan platforms are once again exposed to high risk.

2. High Interest Rates

According to the National Committee of Experts on Internet Finance Security Technology, more than 90% of cash loan products in the market are high-yield products with an average annualized interest rate of up to 150% or even higher. Such abnormally high interest rates keep the platforms alive even if default rate is high.

Beside interest charges, many cash loan platforms charge borrowers hidden fees (such as mobile phone verification fees, bank card verification fees, account management fees, telephone customer service fees and App utility fees, etc.) instead of explicit interest to get around regulation on interest caps. As many borrowers do not have a clear understanding of these charges, this pushes factual interest rates high.

3. Over Indebtedness

Multiple borrowing means borrowing from multiple platforms. A typical multiple borrower normally lives in a small town, earns a low income, used small cash loans to buy a new mobile phone or an iPad. The excitement of luxurious purchase leads them to bear more debt and gradually the debt grew beyond their affordability.

Therefore, they would need to borrow new to repay old debts. According to 100credit.com's 2017 Analytical Report on Cash Loan Sector published in June 2017, 56.5% of all borrowers borrowed cash loans at least twice and 36.7% borrowed between two to five times. 49.4% of the borrowers borrowed from multiple platforms, whereas only 7.2% borrowed multiple times from a single platform.

Multiple borrowing constitutes a serious threat to the cash loan sector. Identifying and solving the problem requires collaboration between all platforms in data sharing. As mentioned previously, cash loan applicants are typically low-income groups without official credit history. Shared data would allow monitoring the length of intervals between two adjacent borrowings and the term of each loan, in order to identify risks of multiple borrowing.

3.4.3 Regulations of Cash Loan

1. April 2017 – First Regulation

The first sight of strict regulation on cash loan appeared in April 2017, when CBRC issued on its website the *Guiding Opinions* on Risk Prevention and Control for the Banking Sector. While requiring that “risk governance of internet finance be steadfastly promoted and compliant and sound growth be facilitated”, for the first time, the document includes cash loan into the jurisdiction of CBRC’s special rectification, lists tasks to clean up the cash loan sector and sends message out loud and clear that violent debt collection be prohibited and penetrative regulation be adopted. Following the suit, through April and May, financial services offices (of local governments) or internet finance associations in Beijing, Shanghai, Guangzhou and Shenzhen issued local provisions on the investigation, registration, cleaning up and rectification of cash loan sector.

2. November 2017 – Suspended Approval for Internet Microcredit Companies

On November 21, the General Office of the Leadership Working Team for Special

Rectification on Risks in Internet Finance issued a document to immediately suspend the approval of online microcredit companies on the ground that “cash loan services provided by some institutions have serious risk problems”.

3. December 2017 – A Sweeping Cut

On December 1, the General Office of the Internet Financial Risk Special Rectification Leadership Working Team and the Office of the Leadership Team for the Special Campaign against Peer-to-Peer Lending Risks issued the *Notice on Regulation and Rectification of Cash Loan Business (the “Notice”)*, which imposes very stringent constraints on cash loan services, including: license required for business, interest rates no higher than 36% per annum, suspending all cash loan without consumption scenarios, no fund raising through P2P lending and banks are prohibited from co-lending with unlicensed institutions. This document will determine the fate of cash loan long into the future.

The *Notice* provides that comprehensive funding costs in the form of interest and various fees charged by institutions comply with the Supreme People’s Court ruling on private lending rates and that origination or matching of loans that violate applicable laws be prohibited. According to the Supreme People’s Court’s September 2015 Provisions on Certain Issues Concerning the Application of Law to the Trials of Private Lending Cases, if the agreed interest rate by the borrower and the lender is over 36% per annum, the excess part shall be void. If the borrower requests that lender rebate the interest paid in excess of 36%, the court shall uphold such request. Thus, 36% per annum is the *de jure* interest rate cap for cash loans, putting to test lenders’ competence in customer acquisition, risk control and operation efficiency. Those that are able to survive below the red line are the winners of the battle. The *Notice* states loud and clear that comprehensive funding costs charged to borrowers shall be converted to the annualized form. All information, including terms and conditions and late payment treatment shall be disclosed in full and in public in advance to alert borrowers of the risks. Previously, only very few leading platforms such as Tencent Weilidai and Jiebei as well as banks and chartered consumer finance companies charged annualized rate below 36%.

The *Notice* also requires that online microcredit be rigorously supervised, online small loans without specific scenario and use of fund will not be further granted, to gradually reduce outstanding loans of those types and complete the rectification in time.

3.4.4 Regulatory Outcome

Currently, the cash loan industry is marked with the following three problems.

Firstly, license price skyrocketed. The price of a license increased from around 35 million RMB to up to 80 million the second day after the license ban in November 2017. Second, default rate outbreak. With tightening of multiple borrowing, once people who rely on rolling over debt realized that they will not be able to get new debt once they have repaid the old, they started to call on others to default too. Such a group of defaulters significantly increased the difficulty of debt collection and some platforms pay salaries up to 70 thousand RMB per month to debt collectors. Thirdly, funding was tightened. As interest rates were required to be below 36%, large amounts of funding exist in the market. The previously permissible bank funding was no longer allowed since the publication of the *Notice* in December 2017. The *Notice* clearly prohibits cash loan platforms from financing through banks, other financial institutions and P2P channels and also prohibits co-lending by banks cooperating with unchartered lending institutions. With fund withdrawn and bank funding cut, the cash loan industry faces great funding difficulties.

CHAPTER

Digital Credit Information Service



The development of digital credit information services has evolved to form the modern credit service system. The modern credit information service system is a credit ecosystem that includes a complete series of credit related services, including credit information gathering and updates, credit evaluation, permission to entry, classifying consumers and services and clear rewarding and penalizing mechanisms. It is often referred to as the “Credit+” ecosystem. The purpose of the modern credit information service system is to help predict probability of default and degree of default of all economic activity participants, in order to achieve effective resource allocation. Such a system plays a vital role both in the financial industry and in people’s daily life.

The complete modern credit service procedure flows as follows. Through gathering data and establishing a credit evaluation process, the system determines access threshold and rules of entry for both consumers and vendors (screens consumers who enjoy services and vendors who provide services), classifying and matching consumers and services based on their individual credit rating and credit requirements, manages and updates information generated during credit transactions, punishing regulation-violating or non-compliance activities (refer to Case 1) and rewarding credible behaviors and finally updating credit ratings based on information generated in the platform. The procedure flow goes on to achieve effective resource allocation.

4.1 Characteristics of Digital Credit information services

Common characteristics of credit information services include the following.

1. Based on credit evaluation and for the purpose of resource allocation

The very essence of modern credit information services is to provide credit solutions for all aspects of traditional business transactions in order to improve

transaction efficiency and user experience. Assuming mutual trust, parties can make use of their respective credit level to enter into transactions more easily and efficiently. Direct connections between consumers and services are achieved. Effectively, the use of credit lowers entry level of transactions and enhances efficiency of resource allocation.

2. Classified consumers and services

Sellers are becoming more selective on services provided to consumers. For some services, only consumers with high credit scores are entitled to receive. Consumers with higher credit scores can also obtain better rates when applying for online loans.

3. Leveraging electronic equipment, Internet and technology innovations

With the speedy development of internet and smartphones, more than half of the credit activities are undertaken online. This allows recording and accumulation of personal credit information, which is the foundation of all credit information services. As Internet of things, Big Data, cloud computing, biometrics, artificial intelligence and other technologies are increasingly infiltrating into all aspects of life, the advance and innovations of science and technology are the major driving force that propel the growth of the industry.

For example, biometric identification helps mobile payment break the limit of space, makes remote user identification a reality and build initial trust faster than before; Big Data-based secure multi-party computation effectively protects user privacy and data security; and blockchain-based MMEC makes online transactions faster, more secure and more reliable.

4. Conducted on credit service platforms

Credit service platforms are key participants in the industry. A major function of the platforms is to achieve the timeliness, openness and transparency of information distribution. At one end the platform reviews and screens the qualifications of vendors. It makes sure that only qualified vendors are listed on the platform, enabling consumers to select credible services based on authentic information. And at the other

end, the platform publishes, updates and aggregates all default information in a timely manner and evaluates and determines credit ratings of consumers. So that both parties can retrieve credit rating results related to transactions on the platform to understand the credit level and choose appropriate service mode.

4.2 Uses of Credit information services

Forms of credit information services include waiver of security deposit to reduce consumers' upfront cost of living, "Post-Pay" to materialize time value of credit, "Fast refund & fast prepayment" to receive payment faster when consumers need to return or resell the purchased product, payment by installments and priority services, etc.

Examples of credit information services are listed below:

- Bicycle rental on credit: users may use shared bikes (e.g. "ofo", "Hellobike" and "youon") based on their ZhimaCredit scores without having to pay deposits;
- Car rental on credit: Users may enjoy car rental services (China Auto Rental, eHi Car Rental, AVIS, etc.) based on their ZhimaCredit scores with full or partial exemption of deposit;
- Deposit-free item rental on credit: including 3C digital products, power bank/chargers, umbrellas, clothes, toys, books, overseas WiFi, outdoor supplies, household appliances, furniture and art on various rental platforms including "tanwu", "imlaidia", "yi23", "wanduoduo", "toysuperman" and "youmiao";
- Electronic products rental on credit: Users may rent smart phones or laptops without paying deposits on leasing platforms such as "jimistore", "quxianxiang" and "xianghuanji" as well as mobile phone hardware brands such as Apple;
- Housing rental on credit: Users may enjoy services including reduced rental deposit and monthly payment of rent by means of credit house rent provided on leasing platforms such as "Izu", "chunmian" and "mogoroom";
- B&B and hotel rental on credit: Users may rent houses without deposits on short rent platforms including "tujia", "xiaozhu", "mayi" and "zhubaijia", four major

short rent platforms in China; and ZhimaCredit allows users to book hotels online by cooperating with “fliggy” so that users may enjoy convenient services such as no deposits, no queueing and express check-out;

- Recycling on credit: When second-hand goods are sold online, users may immediately get 70% advanced payments before buyers receive goods, greatly enhancing user experience and improving the success rate of transactions. The cooperating platforms include “aihuishou”, “igoma” and “youdemai”;
- Convenient transportation: The representative service scenarios include expressway ETC and bus trips, where users may travel first (use service) and pay later;
- Tele-communication: Users may purchase SIM cards and contract phones without prepayment, including Zhima Ice Cream Package, Ant Treasure Card and Unicom contract phones;
- Networking and dating: ZhimaCredit scores are accepted on many dating websites;
- Consumer finance: ZhimaCredit score is essential in evaluating borrower’s credit level in unsecured loans and installment purchase plans including Ant Borrow, Ant Check Later and installment purchase plans provided by Mashang Consumer Finance.

4.3 Commercial Value Created by Digital Credit Information Services

4.3.1 Reshaping Traditional Industries

As seen from the examples above, ZhimaCredit has extended the application of credit scoring into all sorts of life scenarios by penetrating into traditional industries. Data shows that by November 2017, deposit-free credit information services (including hotels, B&Bs, housing rental, car/bicycle rental, convenient services, work equipment

rental etc.) has extended into 21 industry sectors, exempting upfront deposit of 42.5 billion RMB for over 40 million clients²². While benefiting consumers, such a business model also proves to be bringing significant growth opportunities to vendors. Data indicates that, in the item rental industry sector, the number of clients increased by 4.5 times during the second half of 2017 and the number of monthly order increased by 61% on average during the last three months of 2017.

4.3.2 Promoting Innovative Industries

According to the Research Report on the Development of Credit-Aided Sharing Economy jointly issued by the Sharing Economy Research Center of the State Information Center and Ant Financial Research Institute, as more and more sharing service providers are connected to ZhimaCredit, the number of users on the platform grew exponentially. It can be seen from the chart below that the number of users (standardized by the 2016 January figure) increased by 3.7 times in April 2017 compared with that of January 2016, representing an average 12.7% monthly growth.

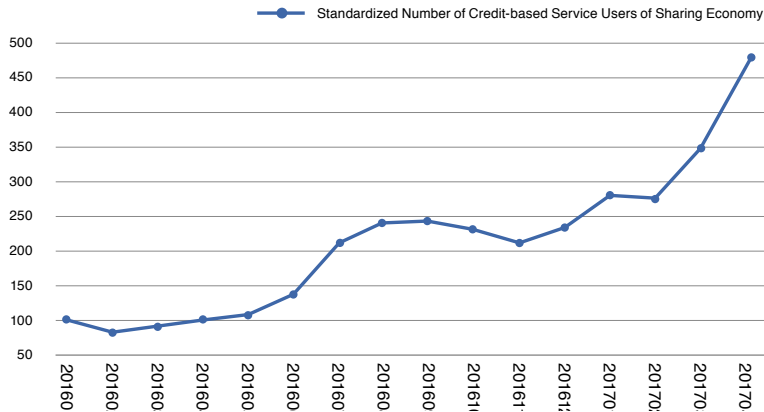


Figure 4-1 Number of Sharing Economy Users Based on Credit

Source: Research Report on the Development of Credit-Aided Sharing Economy jointly issued by the Sharing Economy Research Center of the State Information Center and Ant Financial Research Institute

22. http://www.sohu.com/a/211867621_509904

4.3.3 Risk Management

As credit service systems can keep track of all personal transactional information, it is a powerful tool to improve users' willingness to honor their contract, thus reducing default risk in future transactions. Take car rent business as an example, after two years since the beginning of rental-free car rental business, up to 5 million people have used car rental services purely based on their personal credit (without paying upfront deposit) and the exemption of deposit did not cause additional risk and losses. Data from a top car-rental service provider shows that rental fee default rate has reduced from 6% to 0.004%, compared to 0.03% in deposit-based renting. Similar results are also found in the tele-communication industry and hotel industry. For example, for the 8 million applicants for credit-based contracts, the ratio of late payment is 6%, compared to 20% under the traditional model.

To sum up, for businesses, credit-based business model innovations better satisfy users' demands and allows for differentiated competition, increasing user number while effectively controlling risks. For consumers, the new mode improves consumption experience and speeds up transactions while ensuring the protection of consumer rights. Therefore, the development of credit information services and the credit economy helps improve the utilization efficiency of social resources, enhances social welfare and creates more development opportunities for all parties.

4.4 Baihang Credit

In early 2018, China Internet Finance Association together with eight internet credit platforms such as Zhima Credit and Tencent launched the first licensed credit company "Baihang Credit". This marked a collaboration of efforts from both the public sector and the private sector to build a unified personal credit scoring platform in China. The eight commercial credit platforms had started their pilot programs in operating personal credit information since 2015 with the permission from PBOC. In 2018, the joint ventured Baihang Credit received credit information service license to conduct business in personal credit information services. Baihang will be able to

collect an abundance of personal data, both financial and non-financial from the eight shareholders/contributors. The collaboration will be able to accumulate large amount of personal credit information to a unified platform, and will become an important supplement besides PBOC's credit reference in China's personal credit system.

4.5 Case 3

“Credit Collection, Evaluation and Use” and Increased Cost of Default”²³

Over the years, a considerable number of judgment debtors repudiated their debts after a court judgment came into force (these people are nicknamed “deadbeats”, “defaulters”, “dishonest persons subject to enforcement” or as “Laolai” in China, which generally means debtors in civil and commercial areas who are capable of repaying debts due but refuse or have failed to fulfill court orders for repayment of all or part of the debts for some reason) and some even resisted enforcement of court orders²⁴. Not only has this kind of default impaired the creditor's legal interests but also has degenerated legal sanctity, thus adding to difficulty in enforcement of court orders.

To ensure effective enforcement, the Supreme People's Court (SPC) issued the Several Provisions on Publishing the List of Dishonest Persons Subject to Enforcement in 2013²⁵, stating that the name list of defaulters would be made public.

23. This case study is a project funded by the National Natural Science Fund (Project No.: 71272105). Authors: Su Jianxiao, Tang Yuqin, Wang Lin, Wang Puning and Li Yan from School of Business, Renmin University of China.

24. According to incomplete statistics, over 70% of judgment debtors in all cases concluded and enforced by the people courts in China from 2008 to 2012 had property but managed to escape, evade or even resisted violently against enforcement and no more than 30% of them were willing to fulfill their obligations (Gong Yunju and Yu Xianghua, 2015).

25. If a judgment debtor has the power but refuse to fulfill their obligations established in an effective legal instrument, the people's court shall include them into the list of dishonest persons subject to enforcement, covering cases where a judgment debtor has: hindered or refused to fulfill court orders by means of false evidence, violent resistance or menace; evaded enforcement of court orders by means of false litigation, false arbitration or concealment or transfer of property; violated the property reporting system; committed a breach of the SPC's Order on Restricting High Consumption of Dishonest Persons Subject to Enforcement; refused to implement the settlement agreement without due reasons; and other cases where the judgment debtor has the power but refuses to fulfill his/her obligations under an effective legal instrument.

According to statistics, there were about 3.26 million “Laolais” in China at the end of 2016; the year 2016 also witnessed an average of 4,735 new “Laolais” per day, with only 975 of them fulfilled their obligation of repayment²⁶. The increasing number of “Laolais” may be primarily attributed to the default cost being not high enough for them to regulate their behaviors.

To make default costlier for Laolais, other than stronger law enforcement, an effective closed loop featuring “credit reporting—credit evaluation—credit use” is also needed in the social credit system. This means that, in people’s social lives, not only can individuals see their behavioral information recorded and evaluated, but they are also rewarded or punished based on their credit evaluation. Only in this way can we restrict Laolais in every aspect once they default, thus making default costlier and urging them to pay their due debts. Moreover, the more and the greater restrictions Laolais face after default, the costlier default is. However, China’s credit system is in its preliminary stage. An official chain featuring “credit reporting—credit evaluation—credit use” has not been developed. What is more, credit data is scattered in all corners of the society without effective connections and integration. As early as 2006, a credit center was established by the People’s Bank of China, but the system featured limited variables with limited applications (Sun Ya et al, 2008). The isolation of information greatly suppresses the enormous social value that a credit system is supposed to have. However, it is delightful that things are getting better thanks to the efforts by private sector credit institutions.

In 2015, ZhimaCredit, a third-party credit reference agency owned by Ant Financial, signed with the Supreme People’s Court the Memorandum of Understanding for Punishing Dishonest Persons Subject to Enforcement, starting the cooperation in jointly punishing Laolais. The SPC provides information on Laolais via a dedicated line for ZhimaCredit, which warns Laolais after synchronizing the data. And then, by lowering Laolais’ credit rating and imposing restrictions on all kinds of services they get from ZhimaCredit’s partners, the institution managed to make default costlier and urge defaulters to pay their debts due. In this way,

26. Based on data analysis results of the SPC’s list of dishonest persons subject to enforcement.

ZhimaCredit collects credit information from the SPC's Laolai database, evaluates the credit of Laolai and restricts the use of credit by Laolais, hence forming a chain of “credit collection—credit evaluation—credit use” and making default costlier. By the end of 2016, ZhimaCredit had covered around 720,000 Laolais. Among them, 128,000 paid their debts due, accounting for 17.74%, approximately 5% higher than Laolais without a ZhimaCredit account²⁷. The punishment is starting to work.

27. Calculated based on the data provided by ZhimaCredit.

CHAPTER

Digital Wealth Management



Digital technology greatly expands both the extension and intension of financial inclusion as traditionally defined, a trend notably manifested in the sphere of wealth management. Clients are getting a broader selection of products in terms of rate of return and investment channels. The Fund Investment Coverage (calculated as the number of effective fund investment accounts divided by total population) was only 3% before the emergence of internet funds in 2012, compared to 20-30% in developed markets. This ratio climbed to 6% in 2013, accompanying the emergence of internet-based mutual funds such as Yu'e Bao and further increased to 13.7% in 2015²⁸. At the same time, the total number of accounts of open ended funds increased dramatically from 2013 to 2015, the number of retail effective account raising by 40% p.a.²⁹. Such trend shows that both people's awareness and channels of wealth management improved with the push of internet finance.

5.1.1 Breakthrough of Internet Wealth Management Products

By the end of September 2017, AUM of Yu'e Bao reached RMB1.5 trillion, with 99% of investors being retail investors. Compared to traditional wealth management products, Yu'e Bao investors invested smaller amounts of fund: average amount invested was RMB 3800 and more than 70% investors invested below RMB 10000. The popularity of the inclusive investment products showed that these wealth management tools had precisely met investor needs and are becoming an attractive investment model.

1. Extended Transaction Time

Most traditional financial institutions set the service time from 9am to 5pm during working days. Internet channels have extended transaction time from 8 to 24 hours. Clients can decide when to transact. Let's take Yu'e Bao for example: over 50%

28. "Yu'e Bao National Report of 2015", "Alipay National Billing Report of 2016", by Tian Hong Yu'e Bao Fund.

29. "Analysis Report of Fund Investor Survey", "Retail Investors of Securities, Funds and Futures", 2010-2015, by CSRC

30. ZU Guoming, COO of Wealth Department of Ant Financial, reported by 'securities Times'

internet transactions occurred beyond business hours and even 20% of them occurred between midnight to 5am³¹.

2. Flexible Deposit and Withdrawal with High Yield

In the realm of digital wealth management, Yu'e Bao is the star product. Flexible withdraw and high yield can be achieved at the same time. Partly due to this particular advantage and partly thanks to the large online consumer base of Alipay, the specially designed investment fund product, Yu'e Bao, had achieved Asset under Management of 1.58 trillion RMB by the end of 2017. This number was higher than the total deposit value of current accounts of all top-4 commercial banks in China and doubled that of the US government money market fund managed by JP Morgan.

3. Highly Diversified Underlying Assets

“Don't put all your eggs in one basket.” This concept of risk management prevails among internet firms. Some of the investment models appeared on internet platforms include: Automatic Bidding Tools (the platform automatically matches qualified bidding projects) and Discretionary Investment. For some targeted investment products, the quantity of underlying investment is more flexible. Some highly diversified investment products can simultaneously invest in tens of thousands of underlying projects. Therefore, high return is maintained while risk is minimized. Due to the low minimum investment amount, even per RMB1000 invested capital can be diversified into hundreds of underlying projects, which significantly reduced the probability of large loses.

4. Counter-Cyclical Cash Management Tools

It times of “liquidity crunches”, various types of wealth management products can all give attractive yields that heat up the retail wealth management market. It is believed that the low-risk money market fund products are preferred cash management tools when money is tight. From the figure below, it can be seen that

31. China Internet Financial Ecosystem 2020, Boston Consulting

the increases of Yu'e Bao's AUM increases were often accompanied by increases of Shibor, which indicates the tightness of funding.

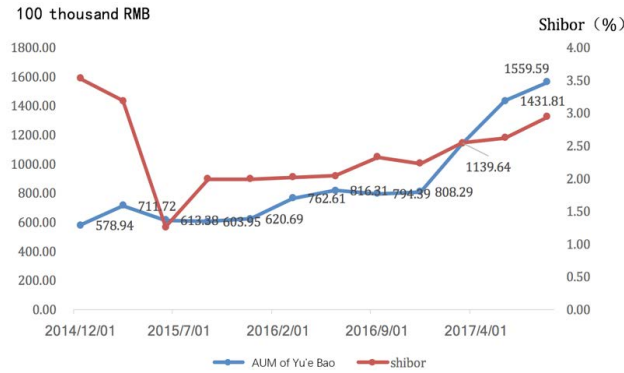


Figure 5-1 Changes of AUM of Yu'e Bao

Sources: Wind; SHIBOR

For example, amid the panic in money market in December 2016, Yu'e Bao proved its resilience. Rather than a run on the fund, even during the severe liquidity crunch in mid-December 2016, Yu'e Bao still saw continuous net cash inflow, benefiting from its large number, widely scattered small-amount retail investor base and its close association with consumption scenarios, making it rather robust. In addition, it has built an ARMA forecasting successful rate reached as high as 90%.

5.1.2 Expanding User Group of Wealth Management Services

Traditionally, wealth management products and services were designed for well-off clients, with certain entry criteria and rules. For example, the minimum investment amount was generally RMB 30,000 for bank wealth management products and RMB 1 million for trust products. Clients also had to undertake off-line risk assessments and accept redemption rules such as T+1 or T+2. From 2013, the emergence of internet fund such as Yu'e Bao broke these entry requirements and rules, realized breakthroughs such as 0 entry requirements, 0 off-line existence, T+0 redemption, etc. Such breakthroughs also made client distributions grow dramatically in terms of age, geography and transaction time.

The number of open ended fund accounts grew significant from 2011-2015. Yu’e Bao and similar products inspired investment enthusiasm and spurred the number of accounts and active users.

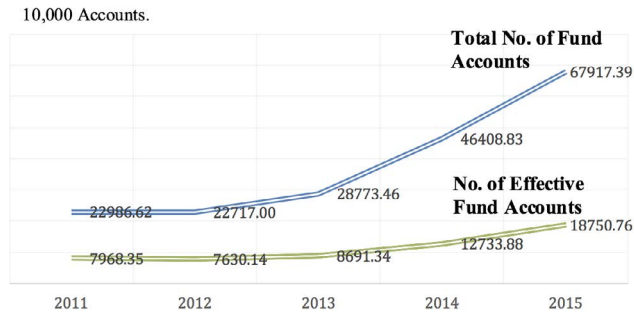


Figure 5-2 Number of Open-ended Security Funds Accounts

Source: “Fund Investor Survey Report” by CSRC

1. Younger Investors

The age group of fund clients has shifted. Based on a data survey³², in 2012 the main investor age group was 40+, occupying 53%. Within this group, people aged 40-50 occupied 33% of all investor population. Three years later, the percentage of the 40+ group fell by over 10% to 42.54%; and the percentage of the group under 30 rose from 8% in 2012 to 19.43% in 2015.

On a national scope, the number of Yu’e Bao users born in the 1990s kept climbing, from 32.9% in 2014 to 41.1% in 2015, surpassing the user population born in the 1980s. The 1990s generation, just starting their career paths, are using this inclusive finance wealth management tool to realize the early stage of wealth management and accumulation. Overall, internet wealth management tool is very popular among younger clients.

2. More Rural Residence and Migrant Workers Involved

The largest portion of the user increase of Yu’e Bao came from the relatively

32. “Analysis Report of Fund Investor Survey”, “Retail Investors of Securities, Funds and Futures”, 2010-2015, by CSRC

under-developed regions, among which 4th- and 5th-tier cities saw the fastest growth, at 48.1% and 45.5%, respectively (according to Tian Hong Asset Management Co.). From 2014 to 2015, the user population in rural areas increased by over 65% per annum. In 2017, the number of rural users reached over 100 million, or more than one-third of all users. Based on survey statistics, users from rural areas mainly spread over the Yangtze River Delta, Pearl River Delta and east coastal areas. The better developed the private sector, the stronger awareness of local people on wealth management and the better acceptance of newly emerged internet wealth management tool.

In terms of geographic distribution, the most active cities of Yu'e Bao users are Beijing, Shanghai, Guangzhou, the three cities with the most migrant workers (workers come from other less developed areas in China). The only 3rd-tier city among the 10 most active cities of Yu'e Bao users is Dongguan, which also has a large migrant worker population. Based on the analysis of place of birth of new users in Beijing, Shanghai, Guangdong, Jiangsu and Zhejiang, it is found that more than half of the new users are not locally born. Thus, it can be said that the convenient internet finance products with low entry requirements has become a major investment channel for migrant workers.

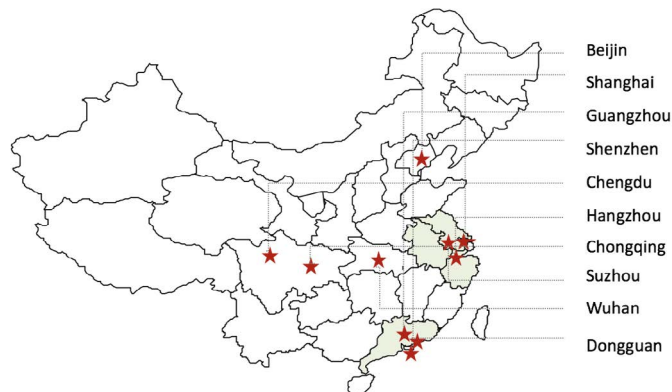


Figure 5-3 Top 10 Active Cities of Yu'e Bao Users

Source: Ant Financial

5.2 Transforming Traditional Wealth Management

5.2.1 Banking Industry

The advantages of traditional banks include large asset size, mature risk management systems and the wide-spread branch networks that provide physical foundation for high quality financial services. However, unlike internet firms that are flat in management structure, traditional banks are more bureaucratic and have clearly defined divisions and product lines, making it hard for them to quickly respond to newly emerging financial needs. In addition, traditional banks are also difficult to be associated with users' life scenarios.

There has been increasing amount of wealth management products from commercial banks, with underlying investment in mutual funds, equity, bonds, foreign exchange, precious metal, etc. In 2016, there were 74.2 thousand investment products from 497 commercial banks in China. In 2016, outstanding value of wealth management products in China amounted up to RMB 29.05 trillion, over ten times that of internet wealth management market. These products could also be divided into various groups based on buy-side demands. Among the total amount, RMB 7.52 trillion was of institution exclusive products and RMB 8.08 trillion was of private bank and inter-bank products³³.

1. Revitalize Bank Wealth Management Products

Traditional closed-end wealth management products of commercial banks do not allow early redemption. In 2016, China Zheshang Bank introduced “Cai Shi Chang”(Wealth Market)– the online transfer platform for wealth management products and “Zeng Jin Cai Fu Chi”(Value-Added Wealth Pool)– the wealth management system, both of which allow clients to publish information, manage transactions and settlement process and other financial intermediary activities to help

33. China Banking Industry Wealth Management Annual Report, 2016, CBRC

individual clients to transfer qualified wealth management products to other people. “Zeng Jin Cai Fu Chi” helps extend the Bank’s corporate services to retail clients and enables pledging of various types of financial asset to obtain consumption credit up to 90% of the value of pledged assets. “Zeng Jin Cai Fu Chi” is an innovative business model: new clients can obtain liquidity without the need to sell their investment products, thus profitability and liquidity can be achieved at the same time. Individual clients just need to submit the electronic certificate of deposit and the transaction sheet for the investment products to pledge such products in order to obtain credit worth up to 90% of the face value of the financial assets pledged. The whole process of submitting the electronic certificate of deposit and the transaction sheet of the investment products can be completed online to avoid tedious loan procedures. Other banks are also actively trying on this new concept. However, product transfers or pledging are limited to the same bank.

2. One-Stop Wealth Management Platform

At the time of internet finance, commercial banks face various challenges. They attempt to breakthrough from their own operation models and business models, leveraging their data and risk management advantages to provide stable returns to investors and build one-stop wealth management platforms. Besides, wealth management also brings along other businesses and the synergies among these business segments. This differs from the traditional highly segmented business lines in commercial banks. Banks are transforming to more integrated financial solution providers.

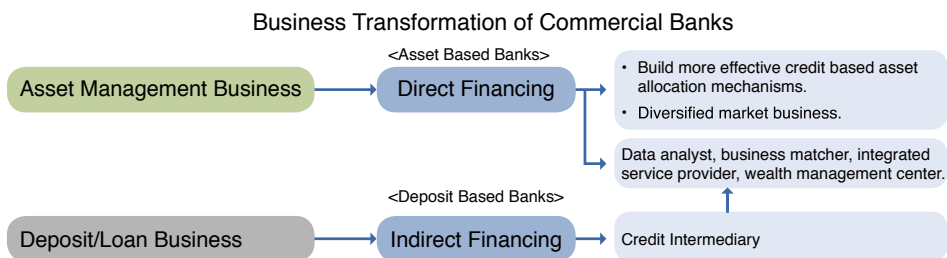


Figure 5-4 Transformation of Commercial Banks

Source: “Wealth Management Report in China, 2015”, Boston Consulting Group

In 2015, Citic Bank together with its eight subsidiaries collectively built the “Citic Wealth Management” brand to provide inclusive and personalized wealth management solutions to clients. In April 2016, China Minsheng Bank pioneered with its online wealth management platform among all commercial banks in China. Key services included high yield financial products, wealth diagnoses, professional investment planning and one-to-one investment consultancy. Bank of China and other big commercial banks also introduced their wealth management services.

Consistent with many internet companies, traditional financial institutions are also planning to build an open financial services platform to offer products and services and build an integrated on-line and off-line service network. At the same time, professional credit rating agencies, legal teams and accounting firms are also being introduced onto the platforms, to help investors identify good products from bad ones, minimizing information asymmetry.

5.2.2 Securities Investment Industry

With in-depth development and internationalization of securities industry in China, regulator-promoted online securities business would inevitably be on a fast track. Development of data and technology reduces service cost of securities firms and increases the availability of investment products for retail customers. In terms of operating models, simplified procedures are adopted to attract clients on the left-tail of normal distribution to achieve the “inclusiveness” of investment services.

1. Internet Securities Business

All parties involved in securities transactions need to rely on the internet to complete their transaction electronically. In the 1.0 era, all procedures and business models were tied to the internet. The first attempt of internet securities business was to develop APPs to provide related news and information. In the 2.0 era of internet securities business, a large number of left-tail clients were brought in thanks to the data flow advantages of internet giants. When it comes to 3.0 era, the focus was shifted from the front end to the back. Optimization focused on asset management.

Efficiencies of treasury operations, settlements and information flows were substantially improved.

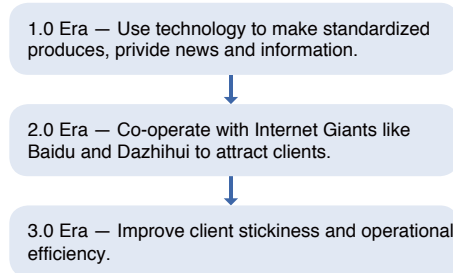


Figure 5-5 Evolution of Internet-Based Securities Business

Source: Huadong Securities

Internet securities business opened the vast left-tail market and dramatically reduced cost of retail business. At the same time, securities companies went further to explore demands of existing clients, taking advantage of internet technology.

2. Intelligent Brokerage

With the appearance of business models such as robo-advisory and “grassroot (meaning low-income segments) investment advisory” services, securities firms attempted to undertake the differentiation strategy and increase investment in AI technology in order to reduce service cost and client acquisition cost.

One example is the “Beta Bull” from Guangfa Securities. The robo-advisor can make initial recommendations before trading date, provide equity portfolios and continue to make recommendations during the whole investment process. iVatarGo, the AI service system from Changjiang Securities can draw investor portrait through calculation and analysis from large amount of transactions. At the same time, the AI system can do credit rating and labeling of financial assets and help with the ultimate matching recommendations. Investors lacking relevant knowledge and experiences can still receive theoretically optimal investment planning within their risk tolerance level. Thus, the investment needs of the mass retail clients can be better met.

5.2.3 Telecom Operators

In a mature state of business life cycle, telecom operators have very close connections with upstream and downstream agencies. In this vertical structure, there will inevitably be idle funds and thus demands for financial services. So far, telecom operators have gradually started financial wealth management businesses. The next focus is to strengthen cooperation with financial institutions.

The optimism of telecom operators came from three facts: large number of existing telecom users, channel advantages and funding advantages. The top three telecom players have already started adjusting their business model. Cooperation between internet companies, traditional financial institutions and telecom operators has risen. Borders between industries are being broken down, marketing and service resources are being shared, and additional business models are being created.

We take Wobaifu, a money market product from China Unicom for example. It aimed to turn the telecom client into investment client, through one of the following three ways: free phone for investment clients, pre-paid call charges investment and exclusive investment. These three models are designed for mobile end pre-paid deposits, pre-paid call charges and idle funds, respectively. The table below shows the gradual shift of service offered from telecom services to investment services.

Table 5-1 Wobaifu Wealth Management

	Source of Fund	Business Model	Investment Objective	Investment Type
Telecom User ↓	Prepay the retail price of the mobile phone at the terminal	Free phone for investment clients	Get a mobile phone and investment returns.	Money market fund
	Prepay 1000-10000 call charges at the terminal	Call charges investment	Frozen prepayment invested in fund account, earns investment return	Money market fund
Investment Client	Idle fund investment	Exclusive investment	Purchase investment products co-developed by telecom operator and financial institutions.	Equity style, debt style, mixed style, etc.

Source: Wobaifu Official Website

Digital Insurance

CHAPTER



In the realm of insurance, data application and management have become increasingly critical to client acquisition and service. Digital technology can broaden product choices and enlarge the client size to include the long-tail customers, achieving inclusiveness of insurance.

6.1 Overview of Digital Insurance

The notion of “Insurance Technology (InsurTech)” was first introduced by China Insurance Regulatory Commission on 3 August 2017, at the press conference on the “Operating Condition of Insurance Market in China for the First Half of 2017”. CIRC stressed that innovative activities in the insurance sector remained robust and the application of insurance technology increasingly expanded. Within the category of innovative internet insurance products, 4.67 billion contracts were signed, increased by 123.55% compared to last year. Among them, 2.7 billion are of “return freight insurance”, a 53.1% year-over-year increase; 419 million are “liability insurance”, 17.36 times that of the previous year; 698 million “guarantee insurance”, 13.27 times of the preceding year’s number, 336 million are “accident insurance”, a year-over-year growth of 145%. The insurance sector also played an active role in green smart transportation and insurance was used for bicycle sharing, facilitating safe bike commute and providing risk coverage for sharing economy. Artificial intelligence technologies were widely applied through the whole insurance business process and business functions including underwriting, damage assessment, claim settlement and customer service were getting increasingly sophisticated, greatly improving operational efficiency and service quality. The industry also advanced research and application of blockchain technologies, an example of which was to apply blockchain technologies in agribusiness so as to explore new routes of precision poverty alleviation.

Technology-Driven Value Generation in Insurance, an industry report jointly released by ZhongAn Insurance and Oliver Wyman, showed that China’s InsurTech market was expected to reach RMB 1.4 trillion in 2021. According

to this report, cloud computing can help the insurance industry to build a more complete interactive platform and data management center; the Internet of Things can connect the insurance industry's information systems with customer terminal equipment; Big Data advances analysis and discoveries; artificial intelligence can partially or completely digitalize 90% of the work in the insurance industry; blockchain can significantly increase the mobility and reliability of the data in the insurance process. Distributed technology can be used to store and analyze massive customers' behavioral data, so as to gain an insight into their potential and real needs. Data sources were increasingly diversified. In addition to traditional business data and financial data, customer service, voice, official websites, social media, geographic information, wearable devices and some data outside of the industry will all become the new sources of data for the insurance industry in the context of Big Data.

6.2 InsurTech Development

6.2.1 Breakthrough from Insurance Service Providers

“Insurance + Technology” is the future of the insurance industry and will promote the transformation and upgrading of the industry. The internet insurance companies have already demonstrated their technical advantages. Established in October 2013, ZhongAn Online P&C Insurance Co., Ltd. was listed on the main board of the Hong Kong Stock Exchange (HKEx) on September 28, 2017. ZhongAn Online stated in its report that the company's mission is “to seek to redefine insurance by connecting ecosystems and applying cutting-edge technologies.” As an internet InsurTech company, ZhongAn Online operates a core insurance system through its proprietary cloud-based platform called “Wujieshan” and has developed advanced artificial intelligence capabilities to rapidly optimize product features, enhance customer experience and strengthen risk management. Examples include health insurance products based on biological data from wearable equipment, DNA testing

and other sources. Through in-depth and comprehensive understanding of customer behavior, ZhongAn Online can develop innovative products and solutions, provide dynamic pricing, automatic claim settlement and ensure effective risk management. Driven by the infrastructure for cloud computing architecture, the company is able to handle a large number of transactions at the same time. During the “11.11” shopping festival in 2016, ZhongAn Online’s platform underwrote more than 200 million insurance policies and the number peaked at approximately 13,000 policies per second. With the automation of the platform, the system allocates resources on the basis of actual utilization. This can also significantly reduce operating expenses.

Traditional insurance companies are also developing their technological skills and using the Internet to serve all aspects of their business. This makes it easier to reach customers and reduce channel costs. For example, Ping An of China has now grown into a comprehensive financial group and is in its transition process from a large traditional financial group to a comprehensive FinTech group. In July 2017, Ping An of China held the “Unveiling Ping An Group’s FinTech Transformation” Open Day event in Hong Kong and for the first time comprehensively disclosed the company’s five major innovation technologies, including face recognition technology, voiceprint identification technology, predictive AI technology, decision-making AI technology and Ping An Blockchain technology. The five major innovation technologies focus on Ping An Group’s two major industries, namely financial assets and healthcare and are used in depth in the following large ecological systems: “Financial Services Ecosphere,” the “Medicare Ecosphere,” the “Automobile Service Ecosphere,” and the “Real Estate Finance Ecosphere”. These areas are closely related to the needs of the general public. Take Ping An Medicare as an example, it has begun to assist the government in managing medical insurance through Big Data and scientific and technological means. It had covered 3.34 million people among Shanghai residents for serious disease insurance and had paid out RMB 20 million. For another example, Ping An’s voiceprint recognition technology can extract customer’s effective language through the double sound track separation technology and conduct identity verification. This technology has already been applied for trial in multiple scenarios such as Lufunds. The accuracy rate achieved 95%. Ping An’s research and

development of artificial intelligence has advanced from identification technology to more sophisticated predicting and decision-making technologies. More specifically, predicting AI technology has been experimented in Chongqing for disease prediction and decision-making AI technology based on computer vision has been applied to vehicle damage determination. Ping An Technology currently owns the largest Big Data platform among Chinese financial institutions, with a data size of 8.5PB.³⁴

6.2.2 Third-Party Platforms

Third-party platforms and technology companies have built a diversified insurance ecosystem based on the advantages of insurance technology and the penetration rate of InsurTech is continuously increasing.³⁵ In this context, a large number of third-party platforms serving the insurance industry such as OKDrive, Wukongbao, BigIns, Baozhunniu, Daxiang Insurance and Nanyan InsurTech are also making progress. Up to hundreds of millions of Yuan of social capitals amounts have been continuously invested in, adding impetus to insurance and technology funding.

Lets take Beijing Liangzibao Technology Co., Ltd. as an example. Established in September 2016, the company provides customized granular and scene-based insurance products for corporate users, integrates industry resources from multiple channels and offers a complete “Insurance + Service” solution to customers based on the “Internet + Big Data” technology and its experience in the insurance industry. The so-called “granulation” means breaking the original insurance model to offer fragmented and customized insurance products and services. At present, setting up scene-based and fragmented insurance products has become a stepping stone for technology-based insurance. The “return freight insurance” of Taobao is a typical scene-based product, which has boosted the integration of insurance and the Internet and has also driven a rapid development of internet business. By relying on its four major advantages, namely, insurance product engine, blockchain technology, Big Data risk control and open platform, Liangzibao builds efficient online claim procedures, designs dynamic premium rules and creates granular insurance products with lower costs.

34. “Du Yongmao From Ping An: New Era, New Start; Building A New Ping An Using Technology”, by Jin Ying, 29 December 2017, Pengpai News Online

The company's main business involves shared transportation, express delivery, on-site service, e-commerce platform and so on. Shortly after it was open for business, it completed the country's first "fresh flowers preservation insurance" which was custom-made for "Reflower", the country's leading online floristry. "Reflower" will automatically insure the order. Once there is a problem with the quality of the flowers, the user may upload pictures by clicking on Reflower's "fresh flowers insurance" button and get compensation after the system's verification. Reflower has set three levels of compensation in terms of the type and severity of the problem and compensates the customer accordingly.

6.2.3 Uses of Blockchain Technology in insurance

At present, blockchain has become a hotspot in the field of science and technology and its application in the insurance field has been continuously promoted.

In November 2017, China Insurance Regulatory Commission stated that insurance technology was widely employed in the first three quarters of the year and technologies such as blockchain had gradually been applied to various business processes and services. A chronic challenge in the insurance industry was that it was difficult to create a trust mechanism between insurers and insured. Incorporating blockchain technology in insurance could build innovative mechanisms of risk aggregation and distribution as well as improve efficiency. It could also decentralize insurers' risks and cultivate trust based on algorithms among all parties involved in an insurance pool.

In August 2017, Trust Mutual Life adopted Ant Financial's blockchain technology and launched China's insurance sector's first "Loving Care Account", which is also the country's first ever mutual insurance offering that employs blockchain technology. At the 2017 Tencent Global Partner Conference (TGPC), Tencent Cloud officially launched Blockchain as a Service (BaaS), a finance-related blockchain solution and announced that it would team up with Aixin Life Insurance to initiate a blockchain alliance that would involve healthcare institutions, insurance companies and health information platforms, etc. Aixin Life is not the first or the last insurer to adopt

blockchain technologies. It is said that Aixin Life and Tencent Cloud are engaging in in-depth strategic cooperation to connect a number of related links through blockchain and store digital records in the blockchain safely and efficiently, so as to fundamentally solve applied technical issues such as security and relatedness of digital medical information. This can achieve real interconnection and secure sharing of medical, insurance and other information. At the same time, it can also provide customers with efficient and secure healthcare and insurance services in competitive prices through fast and intelligent claims settlement.

In addition to Aixin Life, quite a few other insurance companies had attempted to link blockchain technology with insurance services since as early as 2016. In March and July 2016 respectively, Sunshine Insurance launched “Yang Guang Bei” (Sunshine Treasure) rewards program and “Fei Chang Hui” (Frequent Flyer Discount) aviation accident insurance on WeChat insurance card, with blockchain as the underlying technology architecture, becoming the first insurer that applies and conducts research on blockchain. In April 2016, Ping An China announced to join R3 blockchain consortium, cooperating with the world’s forty largest financial institutions to develop a pioneering business application based on sharing distributed ledger technology for the financial services industry. Its 12 financial and medical application scenarios included interbank asset transactions and supply chain finance. ZhongAn Insurance also established a technology subsidiary in November 2016, with Blockchain technology being one of its main business activities. In March 2017, Shanghai Insurance Exchange, in concert with nine insurance institutions, successfully passed the technology verification of blockchain data transactions.

6.3 Benefits of InsurTech

6.3.1 Enriched Products and Application Scenarios

In recent years, innovative insurance products based on Big Data such as UBI (Usage-Based Insurance) auto insurance, authentic product insurance, broken phone

screen insurance, cancer prediction insurance and aviation delay insurance have proved their popularity among consumers. The use of internet technology enhances insurance companies' capability of risk identification, pricing and management, so that some of the past uninsurable risks become insurable, further expanding the coverage of risk types and reflecting the function of insurance as a means for economic and social risk management.

Digital technology helps the insurance industry to better support the real economy in improving risk resilience. The insurance industry uses internet technologies to proactively develop new insurance products such as business property insurance, engineering project insurance and liability insurance and provide risk protection for smooth operations of the real economy sectors such as construction engineering, equipment manufacturing, agricultural production and transportation. For example, insurance companies developed the “loss insurance” to cover economic losses caused by inadequate operation of engineering equipment such as excavator. Insurer directly obtains data of machines' working hours through the Internet of Things technology and when the actual working hour is less than the stipulated hour, the insured will get compensation. This eliminates customers' worries for the uncertainty of working hours of the machines³⁵. Another example is the “weather index insurance” for commercial fishing. Insurance companies will get real time weather information by connecting with the system of forecast service institutions and settle the claim automatically when catastrophic weather comes and meets the stipulated condition for indemnity, improving the protection for the fishing industry.

Digital technology fosters consumption scenarios, which provides a fertile ground for innovative insurance products. Examples of innovative insurance products related to e-commerce include “return freight insurance”, “margin insurance”, “merchant's promise insurance” and “account security insurance”, etc. In terms of

35. One example of insurance company based on the concept of “Internet of Things” is Jiu Long Property Insurance. It introduces products based on “Internet of Things”, such as “Wind Power Index Insurance”, “Digger Index Insurance” etc. and applies UBI-based pricing model. For one insured client ‘san Yi Group’, each machine is connected to the “Internet of Things”, which has real-time information for over 300,000 machines spanning over 10 years. Data includes location, working status, hydraulic oil level, overloading condition etc. for each machine at each particular time. It can also stop a machine remotely. The availability of such data significantly improves insurance companies' modelling and risk management ability.

consumer finance, insurance companies engage in the market mainly by providing credit guarantee and services related to consumer credit data and lending technology. Credit guarantee can be effective in innovative CLOs based on consumer credit levels. In the medical and health field, ZhongAn Insurance has cooperated with Xiaomi Technology to incorporate the data collected by wearable fitness equipment into the health insurance pricing process. In China, it is generally very difficult to make appointments with prestigious doctors in well-known hospitals. While E An Insurance currently provides a product that allows consumers to have priority in making doctor appointments, compensation will be provided if the registration is unsuccessful. In the auto insurance market, InsurTech companies can use advanced algorithms and Big Data technologies to price its insurance products based on its observed risk level supported by technologies that are able to capture driver behavior data (such as vehicle-mounted communication equipment). In the tourism market, some travel risks have been covered using innovative products designed by InsurTech companies. For instance, flight delay insurance can compensate passengers in the event of a flight delay, while weather insurance can cover part of the loss when the customer has to cancel the trip or skip some activities during the trip due to severe weather conditions.

6.3.2 Improved Accessibility

Digital technology has improved the accessibility of above mentioned insurance products and services, making them more reachable to a broader range of clients. Adding insurance products and services on well-known e-commerce or payment platforms is one way to improve accessibility to insurance. In the first half of 2017, Alipay launched a critical illness insurance product, which in just 20 days was purchased by approximately 13 million people, most of whom belong to the Post-90s generation and had no previous experience in buying insurance. This product, branded as “Free from Critical Illness (Welfare Edition)”, is underwritten by Taikang Online Property Insurance Co., Ltd. and all consumers under the age of 60 who uses Alipay payment service can click on a button to purchase the product and activate the coverage right away. The lump-sum benefit of the policy will accumulate along with

the number of payments the client makes until it reaches its ceiling. The policy period is one year and no physical examination is required before the policy is underwritten. In case that an insured is diagnosed with one of the 25 critical illnesses covered by the policy, s/he can apply online for claims directly in Alipay. As of mid-May 2017, seven claims have been settled. Although the product does not cover all of the medical expenses in case of serious illness, it nonetheless provokes market's interest in health insurance.

In the past, people tend to have negative attitude toward insurance. Raising market interest and demand for insurance had always been a predicament faced by the entire industry. For a long time, China's internet insurance products had been mainly those highly standardized such as auto insurance and accident insurance. Due to the complexity of health insurance and life insurance products, they were hard to be moved online. The collaboration between Alipay and Taikang Online, in which insurance policies were offered to Alipay payment users, had found a breakthrough. For this product, users' enthusiasm came from three reasons: coverage could be accumulated, robot interaction and convenient claims settlement. Like other internet insurance products, "Free from Critical Illness" (Welfare Edition) was standardized and simplified. For example, the policy covered 25 most common major diseases and there was no waiting period. At the same time, after being moved online, the product also increased the frequency of interaction between the insurance company and consumers. When launching the service, Alipay introduced robots for smart customer service, which proved very popular among the Post-90s cohort. According to data provided by Alipay, on average approximately 40,000 people consulted smart customer service (a robot) on insurance issues every day. Frequently asked questions included "how to increase the coverage amount", "how many times can health insurance be claimed and how much", "the scope of coverage and whether a certain disease is included".

6.3.3 Higher Service Quality and New Business Model

Digital technology helps regulators to standardize industry practices and

therefore ensures service quality. On June 18, 2017, China Insurance Regulatory Commission issued the Interim Measures for the Retrospective Management of Insurance Sales Practices, which demands that insurance companies and insurance intermediary agencies collect audio, visual and electronic data through technical means such as audio and video recording and record and preserve key insurance sales process, to be able to trace selling practices, search important information and confirm responsibility in case of problem. Insurance companies and insurance intermediary agencies shall record and back up all telephone conversations in telemarketing. The above regulations can help regulate insurance companies' selling practices and gradually put an end to the misleading or false statements to consumers during the selling process.

New business models emerged due to InsurTech. With the continuous advancement of medical technology, the probability of detecting abnormal signs in health checks had gradually increased and the number of customers who reported problems in health disclosure during the insurance information collection process had also increased. Many insurance companies have added scientific and technological means in the underwriting process. The “We Medicare” product launched via the WeChat channel provides customers with intelligent underwriting services. By simulating the thinking pattern of mankind, it queries customers' abnormal physical signs according to a pre-set disease questionnaire and determines whether to provide coverage to the specific client. Another example is the Ant Insurance platform provided by Alipay under Ant Financial. Ant Insurance has entered into partnerships with many of China's leading insurers including ZhongAn, Taikang Life, Guohua Life, Ping An, PICC, China Pacific and Allianz to provide health, accident, travel, property, life and auto insurance products. When a customer enters Alipay's insurance platform, first it takes him/her about 30 seconds to complete an insurance demand assessment that evaluates the risk level in terms of his/her health, finance, travel, etc. Based on risk identification and assessment, the platform recommends corresponding products for the customer to choose.

InsurTech also optimizes the process of claim settlement. Automated

underwriting and claim adjustment can be effectively done utilizing Big Data analyses and modeling. Typical applications include Chubb Group's Claim Vision processing system and the "e-Accident Settlement" APP jointly invented by Beijing Traffic Administration Bureau, China Insurance Regulatory Commission Beijing Bureau and Beijing Insurance Association. Officially launched by Alipay in January 2017, the latter App was aimed at the fast clearance of the accident site, rapid recovery of traffic, quick responsibilities and damage confirmation and fast claim settlement. The ultimate goal was to finish the complete procedures online.

6.4 Comments

To conclude, advances in digital technology have proved to be a strong driving force for business innovations in the insurance industry. It has helped to provide more and better insurance products and services to a broader range of clients more efficiently and effectively, realizing the inclusiveness of financial inclusion.

However, at present, the use of insurance technology in China is still in the starting phase, facing challenges in business model changes, data infrastructure, network security, changes in regulation and supervision, etc. The lack of the incentive mechanism for standardization and the missing industry ecology that allows information sharing for practitioners in the insurance industry is one of the obstacles to the large-scale application of new technologies in the insurance industry. The deep integration of insurance and the Internet may subvert our past habits and cognitions and it also raises new issues for the current supervisory system based on the traditional model. Some of the previous risks no longer exist, while new risks such as product pricing, system operation and data security are gradually emerging, which need to be followed up in a timely manner and studied carefully.

Attempts to better regulate and stimulate the industry might include: to sort through the existing supervisory regulations and lines of responsibilities systematically; to formulate specialized supervision guidelines that cover geographic regions, institutions, senior managements, products, services and internal control; to

invalidate inapplicable regulatory requirements; to strengthen the management and control of information and fund security according to the general idea of “opening the front end and securing the back end” and the characteristics of internet insurance, etc. It is also necessary to refine the information disclosure rules of internet insurance products and publicly disclose requirements of insurance liability, notification obligations, exemption clauses, rights and obligations for cancelation, etc. We should urge insurance companies to integrate online and offline resources, establish information disclosure standards in terms of insurance coverage, enquiry, claim settlement and to protect consumer’s right to know and choose and constantly increase market transparency. In recent years, the China Insurance Regulatory Commission has issued *Administrative Guidelines on the Informatization of Insurance Companies (Trial)* and *Administrative Guidelines for the Safety of Information Systems of Insurance Companies (Trial)* to guide the informatization of insurance companies.

CHAPTER

Regulation



In previous chapters for each element of DFI, we have discussed the regulatory requirements for each element in each chapter respectively. In this chapter, we shift our focus on the macro-regulatory environment for the DFI industry. We firstly review the historical evolution of the regulation and then make recommendations based our discussion.

7.1 Evolution of the DFI Regulation

In China, the evolution of digital finance regulation can be divided into three phases: the “Friendly Regulation Phase” (prior to 2013), the “Initial Development Phase” (2013 – 2016) and the “Special Rectifications and Comprehensive Supervision Phase” (since 2016).

7.1.1 Friendly Regulation Phase (prior to 2013)

During this period, as digital finance emerged, third-party payment and internet-based lending and wealth management services just started expanding. Regulations at this phase tended to focus upon the protection of data security and early warning of risks. At this stage, albeit with large number of new institutions and product offerings, the total transaction volume was relatively low and regulatory jurisdictions corresponding to different lines of business within the sphere of digital finance were yet to be defined, nor were any regulatory policies and tools available.

7.1.2 Development Phase (2013-2016)

The year of 2013 is known as the first year of the “DFI Era”. Since 2013, a variety of business models were invented, following the national strategic imperative of “Internet+”. Internet finance gained rapid growth. This development phase, however, was also characterized by seemingly never-ending problems. Based on understanding of the development of internet finance business models, regulators started designing mechanisms and detailed rules to regulate the industry, gradually clarifying the

regulatory bodies and duties, leading the internet finance industry into a better regulated period.

7.1.3 Special Rectification and Comprehensive Supervision Phase (after 2016)

If the year of 2013 is called the first year of the DFI era, then the year of 2016 can be called the first year of the DFI regulation. 2016 is the first year after Internet Finance had been included in the nation's Thirteenth Five-Year Plan. And in tandem with the industry's rapid growth, a series of regulations were introduced, among which the Implementation Plan for Special Rectification on Risks in Internet Finance heralds a new regulatory paradigm driven by technologies.

7.2 Comments on Regulation

7.2.1 Building Risk-Control Oriented, Long-Effect Regulatory Mechanisms

In the Implementation Plan for Special Rectification on Risks in Internet Finance (hereinafter referred to as the "Implementation Plan"), issued by the General Office of the State Council in April 2016, it is mandated that a long-term vision be adopted and that with the special rectification taken as an opportunity, experiences be summarized and distilled in a timely manner so as to form institutional rules and achieve a long-effect mechanism for the regulation of internet finance.

Given that the constantly changing state of digital finance creates significant unpredictability and uncertainty to the future financial system and financial regulatory framework, it is necessary to build a dynamic long-effect mechanism for its regulation. China needs to improve its existing regulatory infrastructure for digital finance, build and refine corresponding legal and regulatory system and absorb digital and inclusive finance into the traditional financial regulation system in order that increasingly improved laws and regulations provide discipline and protection

to the development of the digital finance market. Regulatory authorities also need to gradually improve governance mechanisms and systems and organizational structure of the regulation of digital finance, keep a high standard on market access and create a transparent and ordered regulatory environment that enables effective interactions so as to facilitate disciplined and sustainable development of internet finance.

Strengthening disclosure of data and information, increasing interaction and communication with regulatory bodies and improving monitoring and analysis to potentially risk contagious businesses are all consistent with the risk-control oriented regulatory principle. Regulation process should adhere to subprinciples of factuality, fairness and openness. Consistent rules and standards should be adopted for the same types of operations across different geographic regions to prevent regulatory arbitrage. At the same time, “over regulation” should also be avoided for this new market. The least desired outcome is a market which has lost innovating and developing force due to overly strict monitoring and regulation.

7.2.2 Categorized and Tiered Regulation

The Implementation Plan stresses the principle of corresponding regulations for different categories of internet finance business. In 2016, the central bank and three regulatory commissions issued detailed implementing rules regarding the special rectifications on online lending, equity crowd funding, mobile payment and internet insurance in an attempt to resolve the risks in an orderly and prudent manner and maintain the stability of the financial market.

As financial inclusion embraces above categories, regulation of risks associated with those activities, therefore, should not follow a simplistic one-size-fits-all approach but adopt the principle of “category-based control and business charter-based supervision”. The requirement of “business charter-based” is to differentiate the good from the bad and only ensure survival of the fittest. Regulatory authorities should on one hand regularly assess the internet finance activities under their supervision and adjust regulatory directions and forces in a timely manner and on the other hand, enhance regulatory coordination so as to create and improve operating mechanism and discipline for internet finance.

In addition, we should apply the “layered regulation” philosophy. Currently,

layered regulation has already been applied to third party payment institutions. It is recommended that similar approach be applied to small loan companies and internet finance companies. For example, more relaxed regulation to be applied to higher rated institutions, such as to allow higher account limits, while strict monitoring applied to lower rated institutions.

7.2.3 Regulatory Technology

Regulatory technology (RegTech), which leverages machine learning, artificial intelligence, data encryption and cloud computing, among other emerging technologies, assists firms in their regulatory compliance efforts.

In 2017, the Financial Technology Committee of the People's Bank of China stated that practical applications of RegTech were to be enhanced and regulatory tools enriched by proactively leveraging Big Data, artificial intelligence, cloud computing and other technologies to improve the capabilities to identify, prevent and mitigate cross-industry and cross-market contagious risks. To facilitate the development of RegTech in China, regulators should assume a guiding role, in which they should make applicable regulatory planning and set technical standard, develop national RegTech regulatory system, effectively supervise market access and exit and cultivate a fair and orderly competitive environment. Also, as RegTech also involves the conducts of financial institutions and FinTech firms, the digital finance sector as a whole should also proactively collaborate with regulators, adhere to and facilitate the sustainable growth of RegTech development mechanism.

In summary, for a prolonged period in the future a prevailing attitude of the regulators towards the development of DFI in China would be paying equal amount of attention to encouragement and discipline, protecting the market while simultaneously preventing risks, maintaining the order of competition and facilitating fair development of all sectors. As a new era is dawning for the global development of DFI, China also needs to actively engage in international collaboration and learn from its global peers while summarizing its own practices in DFI so as to facilitate the cooperation and development of global financial inclusion.

7.3 Regulatory Documents

To draw a detailed roadmap of the evolution of regulations and supervision of digital finance in China, it is necessary to list policy documents issued by relevant government authorities concerning digital finance and financial inclusion, grouped by subjects, as follows.

7.3.1 Overall Financial Inclusion Regulation

Table 7-1 Financial Regulation Documents

Time	Event/Entity	Document	Content
12 Nov 2013	The 3rd Plenary Session of the 18th Central Committee of the Communist Party of China	“The Decision on Major Issues Concerning Comprehensively Deepening Reforms	“[D]evelop financial inclusion, encourage financial innovations, and enrich layers of and product offerings in the financial markets”
29 Oct 2015	The 5th Plenary Session of the 18th Central Committee of the Communist Party of China	Recommendations of the Central Committee of the Communist Party of China for the 13th Five-Year Plan for Economic and Social Development of the People’s Republic of China (2016 – 2020)	“[D]evelop financial inclusion, improve financial services to micro, small and medium-sized businesses, and rural areas, particularly poverty-stricken areas”
31 Dec 2015	State Council	Plan for Advancing Inclusive Finance Development (2016 – 2020)	“[P]romoting development of inclusive finance, improving the coverage rate, availability of and satisfaction with the financial services and making people have a greater sense of gain”
27 Jan 2016	CPC Central Committee & State Council	No. 1 Central Document	“Accelerate the construction of multilayered, extensive and sustainable rural financial services system and develop rural inclusive finance”
2016 NPC and CPPCC sessions	State Council	Report on the Work of the Government	“[Make] a major push to develop inclusive and green finance”

Time	Event/Entity	Document	Content
17 Mar 2016	The 4th Plenary Session of the 12th National People's Congress	The 13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016 – 2020)	"[D]evelop inclusive finance and a variety of forms of micro, small and medium financial organizations", and also reiterates the importance of developing rural inclusive finance
Sep 2016	G20 Summit	G20 High-Level Principles for DFI	"Promote a digital approach to financial inclusion"

7.3.2 Internet Finance Regulation

Table 7-2 Internet Finance Regulation Documents

Time	Event/Entity	Document	Content
12 Nov 2013	The 3rd Plenary Session of the 18th Central Committee of CPC	The Decision on Major Issues Concerning Deepening Reforms	"[D]evelop financial inclusion, encourage financial innovations, and enrich layers of and product offerings in the financial markets"
Mar 2014	State Council	Report on the Work of the Government	"[P]romote the healthy development of Internet banking, improve the mechanism for coordinating financial oversight, keep a close watch on the cross-border flow of capital, and ensure that no systemic or regional financial risks occur"
Aug 2014	Shanghai municipal government	Opinions on Facilitating the Healthy Development of Internet Finance in the City	"Encourage qualified companies to establish varied types of chartered financial institutions that use the Internet as a major vehicle of their business activities or mainly engage in Internet-based services; and support e-commerce platforms and other major internet companies to establish new type of financial institutions in the city
Mar 2015	State Council	Report on the Work of the Government	Mentions twice internet finance and mandates that healthy development of internet finance be facilitated
May 2015	National Development and Reform Commission	The Opinions on Key Work for Deepening the Reform of the Economic System in 2015	Requires that guidelines be issued to facilitate healthy development of Internet + finance
Jul 2015	State Council	Guidelines on Actively Propelling the Internet Plus Action Plan	Lists Internet-plus inclusive finance among the eleven development priorities and point out three directions for the development of internet finance

Time	Event/Entity	Document	Content
Jul 2015	People's Bank of China and other nine ministries	Guidelines on Promoting Sound Development of Internet Finance	Proposes a series of policy measure aimed at advancing a sound development of internet finance in accordance with the overall requirements of "encouraging innovation, preventing risks, seeking advantages and avoiding disadvantages, and sound development"
Nov 2015	The 5th Plenary Session of the 18th Central Committee of CPC	Recommendations of the Central Committee of the Communist Party of China for the 13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016 – 2020)	Internet finance is included in the nation's five-year plan for the first time
Mar 2016	National Internet Finance Association of China (NIFA)	Self-Regulation Pact for Members of NIFA, and Initiative on the Sustainable Development of Internet Finance	Self-regulation approached for NIFA members
Mar 2016	Legal Affairs Department and Technology Department of the People's Bank of China; National Internet Finance Association of China	Standards on Information Disclosure of Internet Finance (First Draft)	Clarify separate requirements of information disclosure for P2P lending, equity crowdfunding and Internet-based consumer lending
Apr 2016	State Council	Implementation Plan for Special Rectification on Risks in Internet Finance	Launched a nationwide special rectification on internet finance
Jul 2016	State Administration for Industry and Commerce	Interim Measures for the Administration of Internet Advertising	The first ministerial rule governing advertising on the internet

Time	Event/Entity	Document	Content
Oct 2016	General Office of the State Council	Notice on Issuing the Implementation Plan for Special Rectification on Risks in Internet Finance	“The requirements of the Guidelines shall be implemented, various models of internet finance shall be regulated, the market competition environment shall be optimized, the situation that some modes of internet finance deviate the correct innovation direction shall be reversed, investors’ risk prevention awareness shall be improved, a long-term regulatory mechanism that is suitable for the development characteristics of internet finance shall be established and improved”
Oct 2016	State Administration for Industry and Commerce and sixteen other government agencies	Implementation Plan for Special Rectification on Advertising of Internet Finance and Risks Associated with Financial Activities of Self-Proclaimed Investing and Wealth Management	Pursuant to the principle that “those responsible for approval are responsible for regulation; and those in charge are responsible for regulation”, supervise advertising of internet finance and financial activities of self-proclaimed investing and wealth management and prevent and mitigate potential risks
Oct 2016	The People’s Bank of China and other thirteen government agencies	Implementation Plan for Special Rectification on Risks Associated with Wealth Management and Other Financial Activities via Internet by Non-Chartered Institutions	Build and improve incentive and discipline mechanism, whistle-blowing mechanism, and information disclosure and investor protection mechanism, achieve dual emphasis on discipline and innovation, and facilitate the sound development of the industry
Oct 2016	National Internet Finance Association	Notice on the Launch of Information Reporting Platform for Internet Finance	Launch an information reporting platform and add whistleblowing function to the Association’s WeChat account

7.3.3 Third-Party Payment Regulation

Table 7-3 Third-Party Payment Regulation Documents

Time	Event/Entity	Document	Content
21 Jun 2010	The People’s Bank of China	Administrative Measures for the Payment Services Provided by Non-Financial Institutions	No non-financial institution or individual may engage in payment business without the approval of the People’s Bank of China whether explicitly or otherwise

Time	Event/Entity	Document	Content
3 Dec 2010	The People's Bank of China	Detailed Rules for the Implementation of the Administrative Measures for the Payment Services Provided by Non-Financial Institutions	Emphasizes on the supervision of the business activities of the third-party payment system
Apr 2014	China Banking Regulatory Commission and the People's Bank of China	Notice on Strengthening the Administration of Cooperative Business between Commercial Banks and Third-Party Payment Institutions	Strengthens the supervision of the cooperative business between commercial banks and third-party payment institutions in order to safeguard clients' fund and bank accounts
Jul 2015	The People's Bank of China	Administrative Measures for the Online Payment Business of Non-Banking Payment Institutions (Draft for Soliciting Opinions)	Payment account can be opened only in a client's real name. For comprehensive payment account, cumulative amount of balance payment transaction shall not exceed RMB200000 per annum; and for consumption payment accounts, RMB100000. In addition, the Draft also proposes more transaction caps
Dec 2015	The People's Bank of China	Administrative Measures for the Online Payment Business of Non-Banking Payment Institutions officially issued	A categorized supervisory regime is introduced for payment accounts, which categorized into three classes, among which Class I is a class newly created in addition to the original regulation. Online payment transaction caps are only applicable to account balance, whereas online payment and flash payment of bank cards are not subject to the new regulation
Oct 2016	The People's Bank of China and other thirteen ministries	Implementation Plan for Special Rectification of Risks Associated with Non-Bank Payment Institution	To encourage payment institutions to adhere to the mission of serving e-commerce and providing small-amount, fast and convenient payment service to the public and to the nature and function as a payment intermediary
Jul 2017	The People's Bank of China and other ministries	Notice on Furthering the Efforts of the Special Rectification on Risks Associated with Internet Finance	The acceptance deadline of the special rectification extended to the end June 2018

7.3.4 P2P Lending Regulation

Table 7-4 P2P Lending Regulation Documents

Time	Event/Entity	Document	Content
15 Jan 2014	General Office of the State Council	Notice on Issues Concerning Strengthening the Supervision of Shadow Banking	Includes into shadow banking institutions non-chartered credit intermediaries including internet finance firms and third-party wealth management firms
Mar 2015	China Banking Regulatory Commission	Establishes Financial Inclusion Affairs Department	Includes P2P lending in the sphere of financial inclusion, indicating authority's recognition of the industry's inclusive nature
Aug 2015	Supreme People's Court	Provision on Several Issues Concerning the Application of Laws in Trials of Private Lending Cases	Sets interest rate ceiling of 24% per annum for private lending, and defines the nature of P2P lending platforms as intermediary, stipulating that such platforms fulfill transaction matching functions and therefore, not be liable for the performance of the lending contracts
Nov 2015	State Council	Guidelines on Maximizing the Leading Role of the New Consumption and Accelerating the Fostering and Formation of New Supply and New Engine	Proposes that consumption environment be thoroughly optimized, qualified market entities be encouraged to establish consumer finance companies, and pilots of consumer finance companies be extended nationwide
28 Dec 2015	China Banking Regulatory Commission	Interim Measures for the Administration of the Business Activities of Online Lending Intermediary Institutions (Draft for Soliciting Opinions)	Clarifies system and mechanism of online lending and responsibilities of relevant entities; stipulates that online lending platforms be forbidden to engage in twelve activities, including taking deposit from the public, pooling funds, and furnishing guarantee of any form to borrowers, etc.
Mar 2016	The People's Bank of China and China Banking Regulatory Commission	Guidelines on Enhancing the Financial Support for New Consumption Areas	To forcefully boost the development of consumer finance market, proactively build up consumer finance organizational system, and constantly facilitate management model and product innovations in consumer finance

Time	Event/Entity	Document	Content
Apr 2016	General Office of the Ministry of Education and General Office of China Banking Regulatory Commission	Notice on Strengthening Risk Protection, Education and Guidance Concerning Malicious Online Lending on Campus	Requires that supervisory and punitive measures be enhanced towards online platforms engaging in malicious lending activities on campus, students be protected from being entrapped in campus lending, and be educated and guided so as to nurture proper consumption attitudes
Aug 2016	China Banking Regulatory Commission	Interim Measures for the Administration of the Business Activities of Online Lending Intermediary Institutions	Regulates P2P lending platforms' business activities, defines the nature of online lending, establishes regulatory system for online lending, and clarifies rules governing business activities so as to ensure online lending industry's sound development
Oct 2016	China Banking Regulatory Commission	Implementation Plans of the Special Rectification on Risks Associated with P2P Lending	"[T]he integration of key rectification and root governance, risk prevention and innovative development, as well as clearing, rectification and crackdown in accordance with the law shall be adhered to, risk incidents shall be properly disposed, and the tendency of frequent risk incidents in the field of P2P lending shall be contained so as to maintain the economic and financial order and social stability"
Feb 2017	China Banking Regulatory Commission	Guidelines on Online Lending Fund Depository Business	To improve supervision of fund circulation in the P2P lending transactions through fund custody mechanism so as to prevent embezzlement and safeguard investors' fund
Apr 2017	China Banking Regulatory Commission	Guidelines on Risk Prevention and Control for Banking Sector	Continue the special rectification of risks associated with P2P lending and clean up campus loans and "cash loans"
Jun 2017	China Banking Regulatory Commission, Ministry of Education and Ministry of Human Resources and Social Security	Notice on Further Strengthening the Supervision of Campus Loan	Requires explicitly that all online lending firms stop as of now all the lending activities targeted at college students currently enrolled and gradually liquidate existing loan portfolios. Banks began to take over campus lending market

Time	Event/Entity	Document	Content
Jul 2017	General office of the Internet Financial Risk Special Rectification Leadership Working Team	Notice on Cracking down and Cleaning up the Cooperation between Online Platforms and Various Types of Trading Venues to Illegally and Illicitly Conduct Business Activities	Demands that internet platforms stop undertaking illicit business activities in cooperation with various types of trading venues by July 15 while properly settle existing illegal and illicit activities

7.3.5 Crowdfunding Regulation

Table 7-5 Crowdfunding Regulation Documents

Time	Event/Entity	Document	Content
Dec 2014	China Securities Regulatory Commission (CSRC) and Securities Association of China	Administrative Measures on Private Equity Crowdfunding (Tentative) (Draft for Soliciting Opinions)	Stipulates that equity crowdfunding be conducted as private placement offerings targeted at specified investors, namely real-name registered users who are verified by the equity crowdfunding platforms as being qualified pursuant to the provisions of the Administrative measures, and the cumulative number of investors not exceed 200
May 2015	National Development and Reform Commission (NDRC)	Opinions of the Pivotal Work of Deepening the Reform of the Economic System in 2015	Explore to build market switch mechanism in a multilayered capital market, draft and enact interim measures to regulate private equity funds, and launch pilot programs for equity crowdfunding
Oct 2016	China Securities Regulatory Commission and other fourteen ministries	Implement Plans for Special Rectification on Risks Associated with Equity Crowd Funding	Regulate internet-based equity financing activities, crack down illegal internet-based financial activities including illegal offerings of securities and illegal soliciting of funds, and protect investors' lawful rights

7.3.6 Big-Data Credit Reporting Regulation

Table 7-6 Big-Data Credit Reporting Regulation Documents

Time	Event/Entity	Document	Content
Jan 2015	The People's Bank of China	Notice on Preparation of Personal Credit Reporting Operations	Requires that eight firms, including Sesame Credit, Tencent Credit, Shenzhen Qianhai Credit, Pengyuan Credit Service, China Chengxin Credit, Intellicredit, Lakala, and Sinoway Credit, be ready for personal credit reporting operations

Time	Event/Entity	Document	Content
Aug 2015	State Council	Action Outline for Promoting the Development of Big Data	Promote the development of Big Data to provide technical support to credit information operations, signaling the beginning of opening up government's data, which in turn lays the foundation for the building of credit information database
Jun 2016	Credit Information System Bureau, the People's Bank of China	Administrative Measures on Credit Information Operations (Draft)	Makes stipulations on all the activities of credit reporting operations including data collection, cleaning, storage, processing, providing, credit reporting products, disputes, complaints and security
Nov 2016	General Office of the State Council	Guidelines on Strengthening the Construction of Individual Credibility System	Reiterates that the construction of individual credibility system should be led by the government, involve the whole society in a joint effort, and leverage internet information platforms to achieve synergy, making individual credibility a shared value for the society and personal morality to which individuals adhere voluntarily

7.3.7 Internet Insurance Regulation

Table 7-7 Internet Insurance Regulation Documents

Time	Event/Entity	Document	Content
Dec 2014	China Insurance Regulatory Commission (CIRC)	Interim Measures for the Regulation of Internet Insurance Operations (Draft for Soliciting Opinions)	Insurers should guarantee that when buying insurance, lodging claims and procuring other insurance services, consumers of internet insurance are entitled to service standard no lower than via other channels, and that the security of insurance transaction information and consumer information should be safeguarded. Insurers should undertake underwriting, claim, surrender, complaint, customer services and other essential activities directly in house and shall not outsource the operation and administration of such operations of such activities to any third-party online platform
Jul 2015	China Insurance Regulatory Commission (CIRC)	Interim Measures for the Regulation of Internet Insurance	Signals the official launch of China's internet insurance regulatory regime, clarifies the positioning of the internet insurance participants, encourages insurers to innovate service modes, ensures the efficiency and convenience of customer service, and vigorously protect insurance consumers' lawful rights

Time	Event/Entity	Document	Content
Jan 2016	China Insurance Regulatory Commission (CIRC)	Notice on Strengthening the Supervision of Surety Insurance of Internet Platforms	Requires that insurance companies take extra cautions when selecting internet platforms for cooperation and not enter cooperation with platforms that engage in provision of credit enhancement, fund pooling, illicit soliciting of funds, and other activities hazardous to national interest and public wellbeing
Oct 2016	China Insurance Regulatory Commission (CIRC)	Implementation Plans for Special Rectification on Risks Associated with Internet Insurance	Regulates the operation models for internet insurance, optimizes environment for market development, improves rules and regulations, achieves dual emphases on innovation and risk prevention, facilitates sustainable development of internet insurance, and leverages internet insurance's unique strengths in facilitating the development of financial inclusion and serving economy and society

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Chinese Academy of Financial Inclusion at Renmin University of China

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