

China: A New Paradigm in Branchless Banking?

Leesa Shrader and Eric Duflos

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GENERAL BENCHMARKS

Population: 1,351 billion (2012) (World Bank 2012b)

Urban population: 52% urban, 48% rural (2012) (World Bank 2012b)

Population below poverty line: 13.4%—128 million (2011) (World Bank n.d.)

GNI per capita \$9,040 (2012) (World Bank 2012b)

Gini coefficient: 0.474 (2012) (Economist 2013c)

Number of SIMs: 1.104 billion (December 2012) (Ericsson 2013, p. 2)

Commercial bank branches per 100,000 adults: 7.72 (2012)¹

ATM per 100,000 adults: 37.51 (IMF 2012a)

Towns/villages with no access: 1,865 from total 40,466 (2012) (Tianqi 2013)

% of adults who have used a bank account in the past 12 months: 64 (World Bank 2012a)

Household loan accounts with commercial banks per 1,000 adults: 846.74 (IMF 2012a)

Internet users: 564 million (2012) (China Internet Network Information Center 2013)

¹ World Bank, Commercial Bank Branch Data 2012, accessed 29 January 2014.

<http://data.worldbank.org/indicator/FB.CBK.BRCH.P5>

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List of Abbreviations

ABC	Agricultural Bank of China
AML/CFT	Anti-Money Laundering and Combating the Financing of Terrorism
CBRC	China Banking Regulatory Commission
CCB	City Commercial Bank
CGAP	Consultative Group to Assist the Poor
FATF	Financial Action Task Force
G2P	Government to Person
GDP	Gross Domestic Product
IFC	International Finance Corporation
MCC	Microcredit Company
MFI	Microfinance Institution
MNO	Mobile Network Operators
MSME	Micro, Small, and Medium Enterprise
NFC	Near Field Communications
NGO	Nongovernment Organization
NPL	Nonperforming Loan
P2P	Person to Person
PAM	Poverty Alleviation Microfinance Institution
PBOC	People's Bank of China
PKSF	Palli Karma-Sahayak Foundation
POS	Point of Sale
RCB	Rural Commercial Banks
RCC	Rural Credit Cooperative
RMCC	Rural Mutual Credit Cooperative
SOE	State-Owned Enterprise
VTB	Village and Township Banks
WB	World Bank

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Executive Summary

While many banked people already use mobile banking in China,^{2,3} the country also has the potential to emerge as an important success story for branchless banking and financial inclusion and potentially a new paradigm. The story will be very different from those of the markets in Africa, which are dominated by large mobile network operators (MNOs). China will likely draw instead from a convergence of forces coming from banks and financial institutions, as well as from innovative technology companies and internet giants providing payments, e-commerce, and social networks that link low-income people to the digital super highway, providing access to markets, services, and information.

Despite dramatic poverty reduction over the past 20 years, more than 100 million people still live under the poverty line in China, nearly all of them in rural areas (World Bank n.d.). However, while China wrestles with many of the same challenges and constraints that other nations face, a number of critical factors are aligning to set the stage for breakthroughs and new potential models in branchless banking and financial inclusion for the rest of the world to consider. This paper is based on desk research, interviews, and field research conducted over the course of 2013. It examines a confluence of key factors contributing to China's evolving story, including the needs of clients, enabling infrastructure, the role of regulation, and finally retail branchless banking experience. The analysis holds that a number of forces are converging that appear poised to drive branchless banking outreach.

In terms of findings on clients' demand, a large majority of people in China have access to a bank account, but people in the poorest and most remote communities are often excluded. The high level of banking penetration is largely driven by low-barrier access to accounts and strong government policy that allows government transfer payments and subsidies, such as agricultural subsidies and medical insurance reaching over 900 million people (Allianz.com n.d.), to be channeled through bank accounts. While the Chinese population is relatively well-banked compared with those in many developing countries, it still has one of the largest poor and unbanked populations in the world measured in absolute terms.

The Chinese population faces significant challenges related to the disparity between rich and poor, massive internal migration, and an aging population. There are also great opportunities since the Chinese show a rapid adoption of technology, including internet, mobile, and smart phones, which gives the average Chinese greater access to services, markets, and information than ever before. In this environment, with 1.104 billion mobile phone subscriptions estimated to cover 84 percent of the population (Butani 2012), there is a great opportunity to leverage technology to address the large economic divide between urban and rural areas, in particular when it comes to financial inclusion.

Much of the core infrastructure needed to drive branchless banking in China is in place, through the establishment of and mass adoption of mobile phone networks, internet, and low barrier-to-entry bank accounts, as well as an environment where third-party payment players proliferate. Additional infrastructure, including payment associations, credit bureaus, and interoperable automated teller machines and point-of-sale (POS) switching through China Union Pay, also help pave the way for increased access to financial services by establishing common industry standards promoting product innovation, improving transparency, and building a greater number of client service points.

² The use of a mobile phone to access financial services and execute financial transactions.

³ One out of every five people using mobile banking comes from China (Calum 2012).

The Chinese government has consistently employed a wide range of policy and regulatory approaches to drive goals of financial inclusion, particularly in western and central China's less-developed areas. The Chinese regulatory framework for branchless banking is evolving rapidly; it supports a wide range of pilots and experiments in branchless banking, including recent instructions and guidance on improving cash withdrawal and mobile money services in rural areas. Current pilots enable diverse organizations, including banks, MNOs, third-party payments companies, e-commerce companies, and microfinance institutions, to test new approaches to reach remote areas and underserved populations. It remains unclear, however, whether regulations will support real commercial viability and also whether they will enable China to fully reach its remaining unbanked population. Competitive tensions among online payment giants, banks, and China Union Pay may also lead to regulatory intervention. To move regulation for branchless banking forward, regulators may need to consider expanding allowable products to meet client needs and the potential role MNOs can play in financial inclusion.

Innovation in retail branchless banking models abounds in China. In 2011, the People's Bank of China launched agent banking pilots with leading banks that quickly built out networks of over 500,000 merchant agents processing cash-out transactions, payments, and transfers using POS terminals and debit cards. Although major state-owned banks are the focal points of the agent banking pilots, MNOs, smaller banks, technology vendors, and third-party payment providers are also involved and are quickly following suit with their own products and approaches, leveraging China's strong national providers of banking technology. In terms of financial inclusion, China's rural credit cooperatives (RCCs), which are the largest formal providers of microloans to low-income clients in rural areas, are increasingly embracing technology to bring their clients branchless banking solutions, including the SIM overlay provided by F-Road.

The popularity of the internet and online payments, with over half a billion active users, has fueled growth of a massive e-commerce market in China, where 2,000 e-commerce providers will propel China to be the largest e-commerce market in the world by 2015. Global e-commerce leader, the Alibaba group, has recently led the way into microfinance with a dedicated lending arm called Alifinance, which relies on platform data and credit scoring to lend to micro and small enterprises trading on the platform. By mid-2013 Alifinance had become a significant source of microfinance, making over 400,000 loans to small-scale vendors spanning the country with an average loans size of 20,000–30,000 RMB (US\$3,500–\$5,000).⁴ The role of China's MNOs, including China Mobile as the world's largest MNO, is still unclear in terms of financial inclusion. While many pilots around mobile payments are in progress, regulatory limitations on the use of mobile wallets have curtailed attempts to develop the types of mobile money solutions that are well-known in other parts of the world.

Despite these advances, the goal of full financial inclusion remains to be reached in China and the complexities of Chinese markets may well divert or slow branchless banking initiatives in the future. And while innovation is taking place, policy makers must ask whether it is transformative and effectively reaches and serves the poor. Moving forward, there is untapped potential to draw on low-cost, accessible channels, such as mobile wallets, particularly for younger, technology-savvy populations and millions of domestic migrant communities that face high costs in the banking sector. New models in agent banking, digital payments, e-commerce, and mobile money have promise to be transformational, but must be supported by meaningful products and viable business models to drive a new phase of technology-enabled rural growth and poverty alleviation.

⁴ Interview with Daniel Gu, senior manager, Alibaba Group, August 2013.

Several issues will require further research and dialogue for the regulator to develop conducive policies and regulations, most importantly around gaining solid learning from the ongoing pilots and converting that learning into clear regulation and scalable, impactful, and sustainable business models. These questions may illuminate the need for additional research and a deeper analysis of the regulatory framework that is outside of the scope of this snapshot. In addition, China can use the ample global research and findings available on transformational branchless banking. The confluence of smart government policies, growing market forces, and innovation may be what drives China into a leading role in branchless banking in the future.

1. Introduction

More than 60 percent of adults in China have a bank account provided by a diverse and rapidly growing array of financial service providers (Demirguc-Kunt and Klapper 2012, Sparreboom and Duflos 2012). From a regional perspective, this places China well ahead of Indonesia and the Philippines, but not yet to the level of Malaysia or Thailand. Most of this progress toward financial inclusion began with China's 1978 market reforms that have yielded nearly 10 percent year-on-year growth and lifted more than 500 million people out of poverty over the past 20 years (World Bank n.d.). The 40 percent of adults who are not yet financially included are primarily poorer people living outside the cities, in lesser-developed regions of China, or migrant workers from those areas. Despite efforts by the government and private-sector providers, it has so far proved challenging to include everyone in the financial system. Emerging branchless banking initiatives in China hold promise for addressing this challenge.

A 2012 CGAP report on financial inclusion in China recommended that further research was needed on the opportunities of branchless banking (Sparreboom and Duflos 2012). (See Box 1 for a brief definition of branchless banking, as the term is used in this paper.) Experience from other countries demonstrates that branchless banking can scale up to provide access to almost everyone at significantly lower transactions costs than can be achieved by traditional financial service delivery systems. For example, there are more mobile telephone subscribers in China than any other country in the world, with 84 percent the population connected by early 2013 (Ericsson 2013, p. 2). Providing access to accounts on mobile telephones could by itself significantly extend services to the unbanked.

Box 1. Definition of branchless banking

Branchless banking involves the delivery of financial services outside conventional bank branches, using agents or other third-party intermediaries as the principal interface with customers, and relying on technologies such as card-reading point-of-sale (POS) terminals and mobile phones to transmit transaction details. Although the term "banking" is used, branchless banking and banking beyond branches is not limited to bank services; it may include a broad array of financial services often provided by nonbanks.

Source: CGAP (2011)

This report describes the branchless banking landscape in China. Within the framework of available information, it highlights key accomplishments and remaining challenges to advance financial inclusion and provides a basis for additional research and policy considerations. In particular, this paper focuses on transformational services that can serve clients who might not be reached by traditional, branch-based financial services, highlighting a potentially new paradigm for branchless banking driven by digital payments through innovative channels such as agents and e-commerce

To conduct this assessment of branchless banking in China, CGAP worked in close collaboration with the International Finance Corporation (IFC) to collect information, including through field visits to Beijing, Shanghai, Guangzhou, Huzhou, Yunnan, and Chongqing, to better understand the branchless banking ecosystem, including the first agent banking pilots initiated by the People's Bank of China (PBOC). Thus far, agent banking pilots have achieved remarkable scale, with more than 500,000 participating agents, according to interviews with regulators and participating financial institutions. Despite this fast growth, the agent pilots are still in the early phases of development, product uptake, and learning.

This report suggests that many of the necessary preconditions may be developing in China for branchless banking to profoundly increase financial inclusion, including the following:

- Rapid adoption of mobile and internet technology across rural and urban populations and all income groups
- High uptake of bank accounts with growing accessibility for the poor through branchless banking innovation, although issues of low account use may require attention
- Strong government policy and regulatory focus on financial inclusion linked to social transfers made through bank accounts already reaching more than 900 million people
- Quickly developing banking and payments infrastructure with key players such as China Union Pay (CUP) promoting interoperability
- Highly competitive and innovative third-party payment industry reaching hundreds of millions of people and leveraging digital data to expand the services on offer

This paper brings together data and analysis on these converging factors. It begins by considering clients, both banked and unbanked, in Section 2. It then goes on to describe the enabling infrastructure for branchless banking in Section 3, the regulatory and supervisory environment in Section 4, and the financial service provider landscape in Section 5. It ends with concluding remarks in Section 6. For a glossary of key terms, see Annex A.

2. Understanding Client Demand for Financial Services

CGAP and other international organizations that promote financial inclusion are putting increasing emphasis on and resources into understanding low-income clients' characteristics and behaviors to better adapt financial services to their specific needs and ensure that financial services have positive impacts on their lives. This section presents information about current access and usage of financial services and then focuses on key forces that affect demand for financial services, with a focus on new technologies. Some of these forces will contribute to building a stronger case and need for branchless banking.

Access and Use of Financial Services

Supportive policies for financial inclusion must take into account several aspects, many of which are also relevant for technology-driven financial solutions (World Bank 2012c):

- **Access.** The indicators needed to reflect the depth of outreach of financial services, such as penetration of bank branches and number and distribution of ATMs and POS devices.
- **Usage.** The way in which clients use financial services such as average savings balances, number of transactions per account, etc.
- **Quality.** The ability of the financial service or product to meet the needs of the consumers, the range of product options available, convenience, product fit, transparency, safety, and consumer protection.
- **Impact.** The direct benefits poor people get from financial services (e.g., savings, transfers, insurance, credit).

While there is very little information available on quality and impact, there is no doubt that China has made tremendous progress in terms of expanding access. The World Bank Global Financial Inclusion (Findex) database indicates that 64 percent of Chinese adults individually hold a formal bank account, which is higher than the global average and that of most countries in the region. In comparison, indicators for most European countries are above 90 percent. The Findex study, conducted in 2011, is based on face-to-face and phone interviews with a nationally representative sample of over 4,000 households (Demirguc-Kunt and Klapper 2012, p. 1). China's account penetration is dramatically lower, however, for its poorest quintile, where only 39 percent of adults hold a formal bank account.

In terms of account usage, Findex indicates that 32 percent of Chinese adults had saved in their bank account over the past year, which is quite high compared to global standards. Again, this figure is much lower for rural adults (27 percent) than for urban adults (48 percent) and is even lower for the poor, with only 18 percent of the poorest quintile having saved in their account over the past year.

As for payments, only 19 percent of adults used their accounts to receive their wages in 2011, whereas 9 percent of adults received government payments through these accounts. At the same time, debit card ownership is very high, with Findex indicating 41 percent of adults have at least one debit card. Bloomberg (2012a) reports that there were an estimated 3 billion debit cards in China in 2011. The percentage of Chinese adults who have taken a loan from a bank seems relatively low at 7 percent, but many people borrow from friends and family (25 percent of adults) and/or from informal sources detailed in Section 5 of this report. CGAP's 2012 study (Sparreboom and Duflos 2012) on financial

inclusion in China reports a significant unmet demand for microcredit among the rural poor and micro and small enterprises (MSEs) (see below), but more research is needed on this front, such as qualitative and quantitative market surveys (e.g., FinScope studies and financial diaries).

Segments with Low Financial Access

While further segmentation and demand analysis are required, particularly to understand the main barriers for low usage levels, the 2012 CGAP report identified four client segments that have particular difficulty accessing banking services as well as problems with inappropriate product offerings (Sparreboom and Duflos 2012):

- The largest group is rural households, in particular, small-scale farmers, livestock raisers, and fishermen
- The second largest is low-wage workers, especially migrant workers
- The third group is micro, small, and medium enterprises (MSMEs), particularly private enterprises
- The fourth group is the unemployed, particularly laid-off workers from state-owned enterprises (SOEs) and rural job seekers in urban areas

Each group has different financial needs and may respond differently to branchless banking channels and technology. Within these groups, the poorest households and smallest enterprises have the most difficulties. Another key point of exclusion is migration of workers from rural to urban areas.

There are approximately 50 million MSMEs representing 99 percent of total enterprises in China. There is a wide variety of enterprises, including farming. MSMEs represent about 75 percent of total employment, and they are mostly located in eastern and central China. Provincial surveys suggest that the smaller enterprises finance themselves through informal sources and family more than through formal institutions. In terms of service needs, about 50 percent of MSMEs surveyed needed credit to purchase raw materials and inventory, and they gave high importance to quick turnaround (within 5 to 10 days) (Xiaoqiang 2013).

Key Forces Affecting Demand for Financial Services

With 1,351 billion people in 2012, China's population is undergoing significant transformation (World Bank 2012b). Four key forces affect the demand for financial services in China: *migration, income gaps, aging population, and technology*.

Migration

In 2012, China's urban population surpassed that of rural areas for the first time in the country's history, although it stood at only 19 percent as recently as 1979. Urbanization in China along with technology developments in the United States have been cited as the two most important issues that will shape the world's development during the 21st century (Bloomberg 2012b).

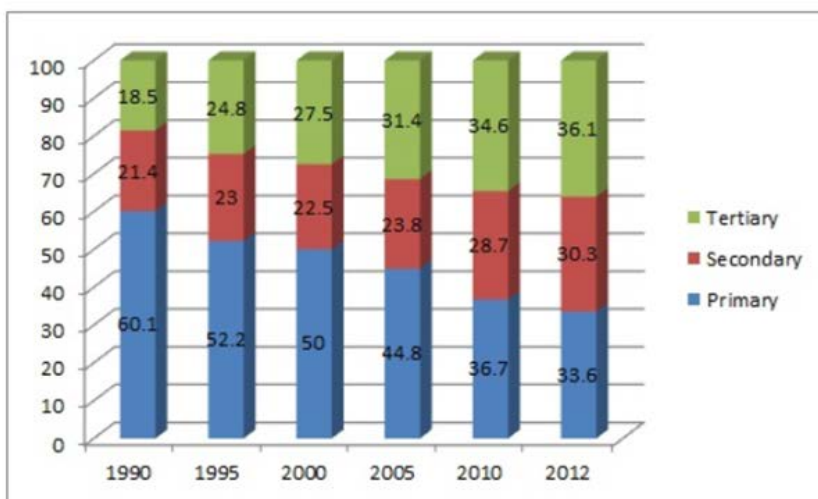
According to the National Statistical Bureau of China there were more than 158 million rural to urban migrants in 2011, half of whom were born after 1980. This migration has dramatic consequences for the social structure of rural areas, with over half of rural youth leaving the countryside by 2011 (Chiang,

Hannum, and Kao 2013). The number of migrants may be considerably higher if one includes unofficial migrants, with some experts estimating the total number at 260 million in 2012 (Oak 2013).

This massive migration has resulted in the emergence of a large new segment, with new financial needs, such as the need to protect salaries paid in cash and reliable channels to send money home. Migrants are often excluded from basic services, and a strict residential registration system (“hukou”) prevents rural–urban migrants from settling in cities and accessing services. It is estimated that 50 million to 100 million semi-employed migrant workers “float” between rural homes and urban work (Council on Foreign Relations 2009).

The current evolution from a rural to an urban society also means a new distribution in the nature of employment in China. As can be seen Figure 1, the share of people employed in the tertiary (services) sector has doubled over the past 20 years, and the share of workers in the primary (agriculture) sector has fallen by half.⁵ Providing branchless banking services to these different segments will have different cost implications for providers and different challenges in terms of both client needs and adoption of technology.⁶

Figure 1. Working Population by Sector 1990–2012



Source: MOHRSS

Income Gaps

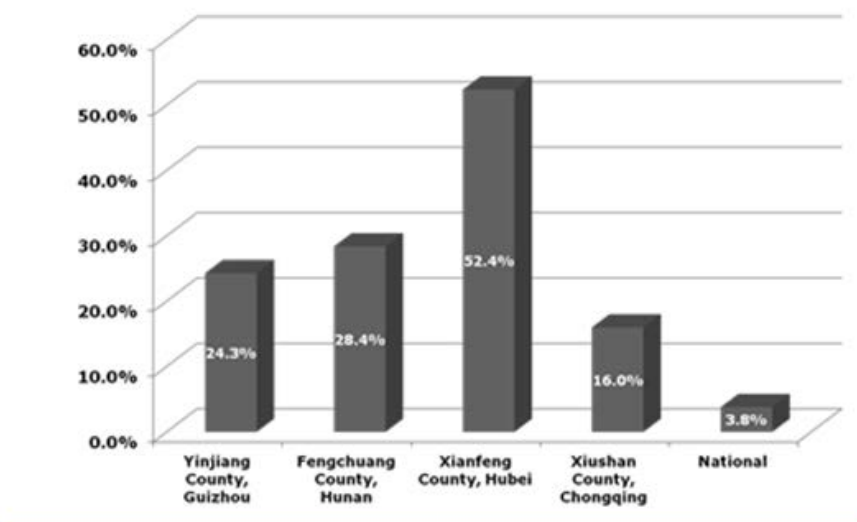
The rapid economic growth in China has contributed to significant poverty reduction. According to the World Bank, China’s double-digit growth in gross domestic product (GDP) has lifted more than 500 million out of poverty. As a result China has reached or almost reached all its Millennium Development Goals (World Bank n.d.). Still, according to the State Council, there are close to 100 million people living under the poverty line in rural China (Xuequan 2013). After India, China has the largest poor population in the world, and China ranks 90th in terms of GDP per capita (World Bank n.d.).

⁵ Translation of table released in May 2013 by the Ministry of Health and Human Resources (http://www.gov.cn/gzdt/2013-05/28/content_2412954.html)

⁶ To better understand low-income client segmentation for financial services, see Faz and Breloff (2012).

The World Bank (2009) highlighted that 99 percent of the poor lived in rural areas—including migrant workers who are often counted as rural. About half of the poor lived in the western regions of China. People who lived in remote and mountainous regions or who were from minority ethnic groups were three times more likely to be poor than people living in central areas or than the Han majority ethnic group. Interestingly, poor people are now more dispersed and not concentrated in poor villages, making it more challenging for policy makers to further reduce poverty (Cannaves 2009). At the same time, some provinces are poorer than others and may require different kinds of financial inclusion solutions, as illustrated in Figure 2.

Figure 2. Poverty Incidence Rate across Selected Counties (2009)

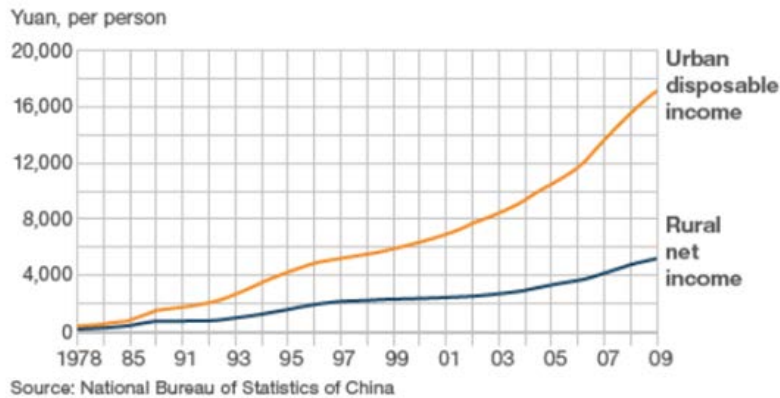


Source: Baseline Study on Poverty Alleviation in Living the New Era

The divide between urban and rural and between the rich and the poor has become a major concern for policy makers, largely as a possible cause of social unrest in the future (Duflos 2012). For example, income for the nation’s city dwellers is more than triple that of its rural residents (Figure 3) (Frazier 2013). In early 2013, the National Bureau of Statistics noted that China’s Gini coefficient⁷ reached 0.474 in 2012, higher than the warning level of 0.4 set by the United Nations (Xuequan 2013).

⁷ The Gini coefficient measures how wealth is distributed in a society: a value of 0 suggests total equality; a value of 1 suggests extreme inequality.

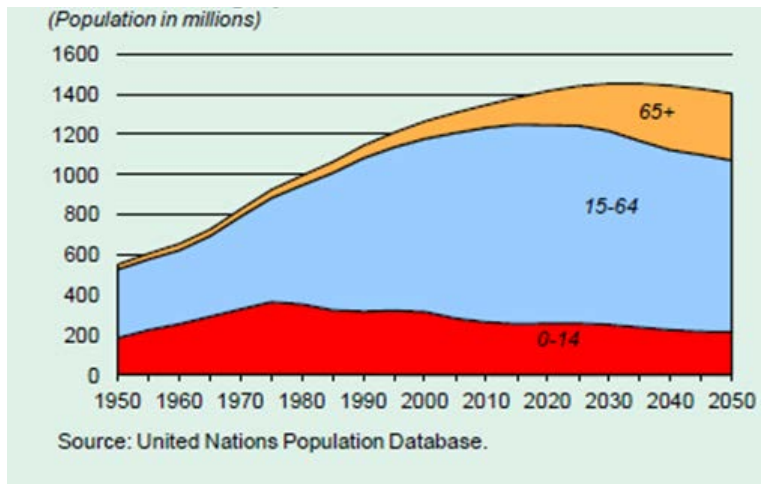
Figure 3. Income Disparity in Rural and Urban China



Aging

Figure 4 highlights the demographic transformation China is facing with regard to an aging population. The age pyramid is changing dramatically as a result of the one-child policy, and this will affect the Chinese economy and the demand for financial services (Lee, Qingjun, and Syed 2013). In early 2013, the National Statistics Center announced that, for the first time, the working population in China had shrunk, which probably means that the young generations will have to bear a higher burden of supporting the elderly. The change of age may also have implications for the demand for financial services (Economist 2013b).

Figure 4: China's Demographic Transformation

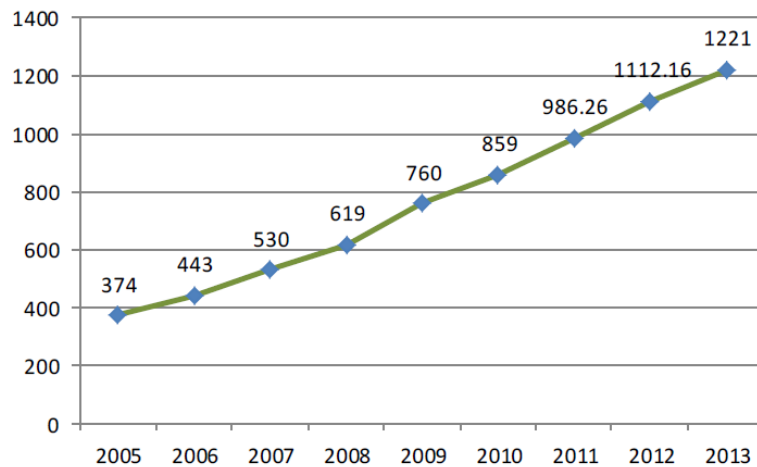


Technology adoption

Technology is also changing the nature of the demand for financial services, driven by rapid Chinese adoption of new technologies, including in rural areas. There are more than 1.15 billion mobile phones in China, which has also become the largest global market for smartphones. As of mid-2013, overall mobile penetration stood at 84 percent (Ericsson 2013), just below the global average of 90 percent,

but also considerably higher than China’s bank penetration rate of 64 percent. It is estimated that in China’s biggest cities, smartphone penetration is approaching 50 percent, higher than that of many developed markets (Wharton 2012). Nearly half of China’s mobile subscribers live in rural areas (Lemon 2012), and as of 2013, 28.9 percent of China’s population had 3G and 4G connections, higher than the world average of 26 percent (mobiThinking 2014). Internet penetration is now at 42 percent and has increased five-fold over the past eight years. Client comfort levels with technology are also based on the high growth of mobile-phone-based payments, which also increased five-fold from 2012 to 2013 (Xinhuanet 2013a).

Figure 5. Increase in Mobile Phone Subscribers in China



Source: ShiftThought (2013)

A key aspect of technology usage is that social media have a greater influence on purchasing decisions for consumers in China than for those anywhere else in the world. China has close to 600 million social media users (Oak 2013, p. 50). A 2012 McKinsey study (Chiu, Lin, and Silverman) found 95 percent of adults living in Tier 1, Tier 2, and Tier 3 cities are registered on a social media site. In addition, the country has by far the world’s most active social media population, with 91 percent of respondents saying they visited a social media site in the previous six months, compared with 30 percent in Japan, 67 percent in the United States, and 70 percent in South Korea.

Chinese consumers prize online peer-to-peer recommendation sites largely due to lack of trust in formal institutions. Because there is no access to Facebook or Twitter, Chinese sites Qzone, Sina, Weibo, and Renren dominate. New online payment regulations have been recently issued, allowing social networking sites such as WeChat to process payments, with explosive initial activity (MacKenzie 2013). It is also noteworthy that a very large share of the population shops and trades online, with over 220 million online buyers (Oak 2013). It appears the growth of this virtual marketplace may be a driver for branchless banking, as all population segments seek to both buy and sell on these platforms and need to be enabled to make electronic payments. The use of social media data in China may well become a future global model to help financial service providers tailor their products and segment their client base.

However, while all households have a mobile phone and a bank card, cash is still king, particularly in rural areas. As gleaned from CGAP visits to Yunnan and Chongqing from August through October 2013, banks and rural community centers (RCCs) engaged in rural branchless banking are struggling with

technology and literacy to drive mass adoption and viability. Many people also are concerned about hacking threats and security around branchless banking. The success of technology-driven business models for the poor rural population will depend significantly on how providers adapt their products and their communication to these specific market segments moving forward.⁸

Conclusion

The Chinese population is relatively well banked compared with those of many developing countries, but it still has one of the largest poor and unbanked populations in the world and huge markets to be tapped for financial services and new financial channels. The nature of the demand from the population is also changing rapidly with the massive migration, rising incomes, and aging of the country. In spite of the challenges, Chinese unbanked populations may have a comparative advantage over many unbanked in the world in its ease of access to and rapid adoption of technology. Given the large divide between rich and poor, it is important to better understand specific segments' behaviors and demand to ensure that financial services are designed in a "client centric" and responsible manner. Better understanding clients will enable providers and regulators to serve the unbanked poor segments with services that they can use regularly and safely.

⁸ CGAP's Applied Product Innovation research is an example of research that could benefit Chinese providers as they seek to serve low-income client segments. <http://www.cgap.org/blog/getting-better-insights-design-better-financial-products>

3. Enabling Infrastructure for Branchless Banking

China's developing story in branchless banking is built on a foundation of many layers, including less visible but critical infrastructure, technology, and regulation, that support the broad array of retail players and offerings competing for clients. This section examines the key elements of the infrastructure for branchless banking that have been put in place. Over the past five years, electronic payment options in China have undergone a rapid transformation. While cash is still widely used, the ratio of cash-to-GDP has steadily declined from 16.7 percent in 2001 to 11.4 percent in 2009 (IMF 2012b, p. 7). China has seen phenomenal growth in access across both urban and rural areas to internet, mobile phones, affordable 3G services, and smartphones, creating an environment conducive to innovation and growth in branchless banking.

A recent study by McKinsey for the Bill & Melinda Gates Foundation found that electronic or digital payment systems, including mobile money and electronic account deposits, offer the highest potential for financial inclusion because they are efficient and can reduce transaction costs by up to 90 percent for the poor. Only countries with widespread access to digital payments through banks or mobile money providers achieve high levels of financial inclusion. In countries where more than 70 percent of people can pay digitally, financial inclusion is over 85 percent (Voorhies, Lamb, and Oxman 2013, p. 24).

Over the past five years, China has moved rapidly toward a tipping point for branchless banking uptake, due in large part to a strong enabling environment for growth and innovation. At the core of this pathway, the ecosystem for digital payments and financial inclusion in China has grown to encompass a wide range and number of players. China is one of the few countries allowing third-party payment providers to engage in digital payments, with 223 third-party payment licenses currently issued (Butani 2012). The branchless banking and digital payment space includes banks, MNOs, and third-party payment providers, with a number of key institutions such as CUP and credit bureaus that enable the ecosystem, linking closely with regulators.

There is an exceptionally strong mandate from the government to provide customers, particularly in rural areas, new touch points for financial services beyond bank branches, which has driven innovation, particularly coming from nonbank players. While some models are implemented by a single player, such as a bank or MNO, increasingly models are becoming multi-party, leveraging new technologies and financial value chains.

The banking and payment ecosystem is supported by two major credit bureaus, the National Consumer Credit Bureau, which is public, and the Shanghai Credit Information Services, which is private. Credit bureaus are making some progress in opening credit reports to nonbank institutions. Likewise, the ecosystem is reinforced by China's national ID system, which provides an ID to all nationals over age 16. This card is the only identification needed to open bank accounts or mobile wallets.

Perhaps one of the most important enablers for interoperability and financial access is CUP, also known as Union Pay. CUP is the only domestic bank card organization in China. It is a major focal point for interoperability, branchless banking, and digital payments. And it is central to a broad range of innovative payment pilots designed to increase financial inclusion, including the agent banking pilots in rural China (see dedicated section later in report). Founded in 2002, CUP is a state-owned association for China's banking card industry, operating under the supervision of PBOC and with about 400 domestic and overseas member banks. It is the only interbank network in China, excluding Hong Kong and Macau, linking the ATMs and electronic funds transfer at POS throughout mainland China (CUP n.d.).

By the end of 2012, CUP was working to increase its POS terminals to 15 million units, driving a scalable bank card acceptance network in China. CUP has more cards in circulation than any other payment network globally—2.9 billion cards or 45 percent of the world’s total in 2011, which can be used in 135 countries around the world. CUP is in direct competition for market share with Visa and MasterCard, which CUP surpassed in customer spending in the first half of 2012 (Zijing 2012). Debit-card transactions drive most of CUP’s revenue, but CUP has also partnered with all the MNOs in mobile payment initiatives, including contactless payment pilots. CUP also sees mobile payment as a core channel of its activities, including the 2013 launch of its own mobile wallet, a near-field communication (NFC)-based mobile wallet platform that eight Chinese banks have committed to supporting (NFC World 2013).

While credit card adoption is still relatively low, Chinese banks had 3.08 billion debit cards circulating as of September 2012, a 21 percent increase from a year earlier, according to PBOC. China will also overtake the United States as the largest market for credit cards by 2020, with cards featuring CUP numbering 285 million and debit cards totaling 2.7 billion as of 2011, according to a Nilsson Report (Zijing 2012).

Chinese technology companies are also aggressively producing low-cost mobile POS devices very similar to the Square device, driving fast growth of merchant acceptance points, led by Chinese companies Lakala (which supplies most Chinese retailers with POS units) and IBoxPay. China is also considered a hotspot for Europay, MasterCard, and Visa (EMV)—global standard for interoperability—card migration to ensure the security and global interoperability of chip-based payment cards.

A range of coordination bodies, including the Mobile Payments Industry Alliance, which was founded by CUP in 2010, has also been launched in recent years to drive clarity and standards in the market for branchless banking. Alliance is a platform through which banks and wireless operators can jointly offer mobile payment services to firms in various industries, such as bus, metro, water, electricity and gas, cinema, petrol, hospitals, etc. Members include 18 national and local commercial banks, such as the Industrial and Commercial Bank of China, Agriculture Bank of China, Construction Bank of China and Bank of Communications; two mobile communication operators, China Unicom and China Mobile; mobile phone manufactures, such as Nokia and Lenovo; and related institutions, including several smart card and chip producers, system integrators, and academies.

In May 2011, the Payment & Clearing Association of China (PCAC) was established through an initiative of MNOs and third-party payment companies. PCAC is a self-regulatory body of the payment and clearing service industry of China and is overseen by PBOC. On 29 February 2012, PCAC released the Self-Regulatory Pact for the Payment and Clearing Industry of China (Oak 2013, p. 85). In April 2012, the Cloud Computing Industry Alliance was founded by Beijing University of Aeronautics & Astronautics, CBC Capital, Baidu, UFIDA Software, China Unicom, Longfor Properties, TCL, Lenovo, Alibaba Group, Tencent, and Peking University. Members of the alliance collaborate on research and share data, and jointly promote the use of cloud computing technology in China.

In terms of infrastructure, China is also home to the world’s largest MNO, China Mobile. China has more than 1.104 billion total registered mobile subscribers as of 2012 among the three major MNOs, with an estimated 84 percent mobile penetration rate (Butani 2012). About half of China’s mobile subscribers live in rural areas (Schen 2012). In 2012, the Chinese regulator, Ministry of Industry and Information Technology (MIIT), reported mobile subscriber growth in 2012 was driven by increased rural demand in central and western China, while growth in the more urban areas of eastern China was slowing.

The Chinese government has been a strong supporter of increased communications and internet infrastructure as a driver for economic growth and has worked to ensure communications costs are relatively low. As a result, internet penetration is also growing quickly and 3G now accounts for almost 80 percent of the new connections in the country, according to Wireless Intelligence data (Calum 2012). According to a research report by *Flurry*, China currently has 167 million iOS or Android devices, compared to 181 million in the United States, and China has pulled ahead of the United States in the number of smartphones sold (Farago 2012).

An additional growth factor for digital payments in China is the growth of e-wallets, offered through mobile networks, as well as banks and third parties. These wallets traditionally have been mainly accessible online via personal computer, but are now growing quickly for use on mobile devices and are generally tied to a bank account. Market intelligence firm Celent has estimated that users of digital wallets will reach 410 million people in 2014. Online payment provider Alipay alone has more than 100 million active e-wallets (Bischoff 2012).

China's rapid adoption of technology, including mobile phones and mobile internet, has accelerated the pace of adoption for branchless banking and put affordable technology and connectivity within reach of the poor. In CGAP's August 2013 field research, for example, within a very small random sample of 10 agent banking clients in rural and periurban in Yunnan, every client was using a smart phone, including those living on less than US\$200 per month. Access to mobile internet provides clients with a broader and more responsive range of services and also financial use cases that help clients gain a financial identity and use the digital payment highway to access new economic opportunities.

Conclusion

Much of the core foundation of infrastructure needed to drive branchless banking in China is in place, through mass adoption of mobile phone networks, internet, and low-barriers to bank accounts, as well as the proliferation of innovative third-party payment providers. The role of CUP in building an interoperable environment for ATM, POS, and now mobile transactions may prove an important enabler to reach a critical mass of digital touch points for financial inclusion. Additional infrastructure, including the single national ID, payment associations, and credit bureaus also help pave the way for increased access to financial services by establishing common industry standards promoting product innovation, improving transparency, and building a greater number of client service points. Competitive pressures in this dynamic space are growing; however, as international players such as VISA and growing national players such as Alipay compete for CUP business, we can expect to see continued change in China moving forward.

4. Regulatory and Supervisory Framework for Branchless Banking

A key force in the success of branchless banking is the regulatory and supervisory framework. It is widely recognized that for branchless banking to foster financial inclusion, regulations need to be in place to allow innovation and scale to benefit the poor, while ensuring the stability and the integrity of the financial system and protection of the customer. China has a strong supportive environment for innovation, but a key question is how regulators will enable innovation to fully benefit those vulnerable segments of the population such as poor farmers and migrant workers.

This section describes the regulatory and supervisory framework for branchless banking and focuses on regulations most relevant to expanding financial inclusion.⁹ It does not provide an in-depth analysis of the regulatory and supervisory framework, which would require a standalone review involving a full team of lawyers and regulatory specialists. The authors faced significant constraints in accessing relevant documentation in English. At a minimum, it is hoped that the report raises key questions and points toward areas for future research.

Policy context

In the past 10 years, the government has issued several policies and regulations to encourage financial inclusion. As summarized in CGAP's 2012 report, China has launched new types of institutions geared at serving low-income people and SMEs such as MCCs and village and township banks (VTBs) that have contributed to doubling loans to farmers between 2007 and 2010 (CBRC 2013).

In November 2013, during the recent plenary sessions of the Central Committee in Beijing, the Communist Party of China reiterated its goal to reduce the economic divide between rural and urban

Box 2. The push for financial inclusion

"We should accelerate the establishment of a modern payment and settlement network that covers most rural banking institutions and promote the application of modern payment instruments such as online banking, mobile banking and telephone banking in rural areas. We should strengthen the publicity and education of financial knowledge for migrant workers and constantly raise financial awareness and enhance the capability of using modern financial instruments and products"—CBRC (2013b)

populations (Xinhuanet 2013d). This meeting was followed by decisions to undertake land reform, which could enable farmers to use land as a guarantee (Xinhuanet 2013b). The objective of reducing the divide between the rural and urban population is not new, but it clearly remains a top priority for the government.

In terms of branchless banking, in the past few years, PBOC has issued a number of guidelines for pilot projects on mobile money and use of agents for banking (see next section). The China Banking Regulatory Commission (CBRC) has also issued several statements related to digital finance for rural areas. For example, in 2006, CBRC introduced a

Guideline of Financial Innovation for Commercial Banks, which encourages commercial banks to make innovations by adopting new technology, developing a new methodology, serving new markets, and developing new products. In this guideline, CBRC commits to create a favorable policy and regulatory environment for financial innovation. Most recently, in its October 2013 notice on improving financial services for migrant workers, CBRC acknowledges the potential role of technology-driven "modern payments" to expand financial services in rural areas (see Box 2).

⁹ See Lyman, Pickens, and Porteous (2008).

During the 12th five-year plan, which started in 2011, CBRC is committed to continue the reform of the RCCs, and earlier this year its chairman highlighted the need to use new technologies to expand financial services (CBRC 2013c). A key driver for new regulation and the emerging story in branchless banking has been the desire to transfer government subsidies more efficiently to rural areas.

Supervisory framework for Branchless Banking

Several supervisors are fully engaged in reforming the sector to take advantage of technology to promote financial inclusion, although the framework is somewhat fragmented (Knowledge@Wharton 2012). The main three supervisory bodies for branchless banking are PBOC, CBRC, and MIIT.

PBOC was established in December 1948 and its function as a central bank started in September 1983, and was confirmed by the Law of the People's Republic of China on PBOC in 1995. In 2003, PBOC underwent a major reform, and the supervisory responsibility of PBOC for banks, asset management companies, trust and investment companies, and other depository institutions was passed on to CBRC (see below). PBOC's role in making and implementing monetary policies was strengthened.

According to the PBOC website, the amended Law on PBOC of 2003 highlights many roles of PBOC, which include the following roles that are particularly relevant to branchless banking:¹⁰

- Making payment and settlement rules in collaboration with relevant departments and ensuring normal operation of the payment and settlement systems
- Providing guidance to anti-money laundering work in the financial sector and monitoring money-laundering-related suspicious fund movement
- Administering credit reporting industry in China and promoting the need to build up a credit information system

PBOC has been the leading advocate for financial inclusion among different policy makers and is particularly relevant for digital finance as it is responsible for regulation and supervision of payments and of third-party payments companies. As a part of its strong commitment to financial inclusion, PBOC is also the originator and the regulator of the recent branchless banking pilot described later in this section. Through CGAP's field reviews, it was clear that PBOC provincial offices play a leading role in the implementation of these pilots. PBOC has also been very active over the past few years in organizing events on branchless banking. It also has been active internationally and has joined the Alliance for Financial Inclusion, together with CBRC.

CBRC was created in 2003 as the country's independent banking regulator. CBRC has played a major role in ensuring the banking system meets the standards set by the Basel Committee and the World Trade Organization. Not only has it partially liberalized the banking sector and enhanced supervision, it also put emphasis on promoting the "san nong" (rural areas, agriculture, and farmers) and promoted SME development (Sparreboom and Duflos 2012). CBRC has 36 provincial offices, 300 field offices, and 1,735 supervisory agencies, according to its 2010 annual report.¹¹ CBRC's main focus is prudential regulation and supervision of deposit-taking institutions, such as banks, but also RCCs, VTBs, and all institutions that raise deposits. On its website, CBRC defines its objectives as the following:¹²

- Protect the interests of depositors and consumers through prudential and effective supervision
- Maintain market confidence through prudential and effective supervision

¹⁰ <http://www.PBOC.gov.cn/publish/english/952/index.html>

¹¹ <http://zhuanty.cbrc.gov.cn/subject/subject/nianbao2010/english/jianjie.pdf>

¹² <http://www.cbrc.gov.cn/showyjhhjindex.do>

- Enhance public knowledge of modern finance through customer education and information disclosure
- Combat financial crimes

In 2012, CBRC issued a circular that emphasizes the use of technology to develop modern financial services (Chan and Tian 2012). CBRC is also responsible for supervising electronic banking, and issued Rules Governing Electronic Banking, in 2006.

MIIT is responsible for regulating MNOs, internet, and software companies and production of electronic and information goods (Oak 2013, p. 54). It works to incentivize innovation in the communication sector. In 2013, it issued a draft proposal for mobile virtual network operator licenses, whereby third-party companies can purchase telecommunications services in bulk and then resell it to customers under their own brand. Pilot participants must sign agreements with two service operators and cannot build out their own infrastructure. Pilots have been approved, and an estimated 100 companies have applied (Ong 2013). It is expected that social media players will enter this space, including TenCent (with 784 million users on QQ, 300 million users on WeChat, and 80 million on TenCent Weibo) and Sina (with 140 million on its Sina Weibo platform).

Regulations relevant for branchless banking

In 2009, PBOC issued an instruction on improving the Rural Payment Environment that aimed at upgrading the payment infrastructure and encouraging electronic payments and card usage in rural areas. While many regulations are at least indirectly related to branchless banking (see full list in Annex), there are two highly relevant regulations for transformational branchless banking:

- The PBOC “Instruction/Circular on Improving Cash Withdrawal Service in Rural Areas” from July 2011, which regulates the pilot project that CGAP visited, and mainly uses POS and debit cards to enable rural populations to cash out subsidies and make other transactions.
- The 2012 PBOC “Guidance on the Pilot Program of Mobile Money Service in Rural Areas,” which is an attempt by PBOC to foster payments through mobile phones, also using agents. CGAP did not visit this pilot but reviewed an unofficial translation of the guidance.

In light of CGAP’s global experience, many regulations can affect the development of branchless banking for financial inclusion. CGAP argues that a conducive regulatory framework would include (i) conditions for the use of banks’ and nonbanks’ agents; (ii) risk-based anti-money laundering and combating the financing of terrorism (AML/CFT) regime; (iii) a clear regulatory regime for nonbanks to issue electronically stored value; (iv) consumer protection rules tailored to the branchless banking context; and (v) payments system rules that allow broad interoperability and interconnection (Christen, Lauer, Lyman, and Rosenberg 2012). This section provides a review of China’s new regulation linked to each of these issues.

Conditions for banks’ and nonbanks’ agents (CGAP 2011)

In the current regulatory framework, there seems to be no significant barriers to develop regulations that enable banks to use agents, building on the guidance and the instruction issued by PBOC. One important issue, however, will be the ability of clients to cash in through agents and the role of MNOs and third-party payment companies and their agents, since cash-in transactions are officially not allowed in the current pilots. Cash-in transactions are particularly important for the majority of low-income people who are still paid in cash and need a safe and convenient way to save in a bank account

without going to a bank branch. It may also be useful for migrant workers who want to save some of their earnings. For agents, cash-in transactions can be an important source of liquidity and fee revenue.

The Instruction on Improving Cash Withdrawal Service in Rural Areas authorizes banks to use agents in rural areas for cash-out services using deployed POS devices and phones. A key objective of the pilot is to facilitate the transfer of subsidies and government transfers to rural households, and as of August 2013, it encompassed 500,000 agents. Services consist of agents providing cash-out services using POS devices for banked clients with debit cards. The main goal is that cash withdrawal services basically cover all township and villages without nearby access to bank branches by the end of 2013.

In parallel to the agent banking pilots, which relies on bank cards, PBOC issued guidance related to mobile money, which is linked to use of financial services through mobile phones (the Guidance on the Pilot Program of Mobile Money Service in Rural Areas). It describes the broad range of providers involved in each province (banks and nonbank third-party payment companies, such as CUP and MNOs).¹³ The guidance explains the reporting responsibilities of the parties involved to PBOC provincial authorities, who are the sole supervisors. For example, pilots are supposed to report on their implementation plan, advertising plans, staff training, and agreement template with agents. An annex of the guidance provides a template cooperation agreement between agents and providers.

Both the Circular and the Guidance clearly spell out who can be an agent. Possible agents include agriculture organizations (e.g., agriculture supply cooperatives), MNO and post office outlets, and convenience stores, supermarkets, and other convenience service outlets “permitted by other regulatory bodies.”

Both pilots are currently authorized to undertake the following transactions: bank transfers, account top-ups, balance inquiries, remittances, tax/bill payment, cash out of subsidies, and petty cash withdrawal. Interestingly, agents are not allowed to open accounts or accept deposits. The observation of the pilots in Yunnan and Chongqing showed that clients mostly used the service for cashing out but also for bill payments, person-to-person (P2P) payments, and person-to-business (P2B) payments.

Flexible AML/CFT regime

AML/CFT is gaining attention in China. According to the Financial Action Task Force (FATF), the number of money laundering convictions rose to 32,510 in 2008–2010 from just 150 in 2002–2006 (Koh 2013). In several countries, know your client (KYC) requirements can slow down financial inclusion. One key advantage of China over many countries is its ubiquitous national ID system.

PBOC is the main regulator for AML/CFT; it has full authority to issue regulations to monitor financial transactions and supervise financial institutions and payment institutions. In addition, CBRC, the China Security Regulatory Commission, and China Insurance Regulatory Commission also have responsibilities for AML/CFT within their domains. The fact that all four agencies are involved in supervising AML/CFT may create coordination issues in the future.

¹³ Namely, Agriculture Bank of China (Jiangsu, Guangdong, and Guizhou branches), Postal Saving Bank of China (Hunan and Sichuan branches), CUP (Hunan, Sichuan, Jiangxi, and Shanxi branches), China Mobile E-Commerce Co Limited (Guangdong and Hunan branches), BestPay (Tianyi), E-Commerce Co. Limited (Guangdong and Jiangxi branches), UniPay Co Limited (Hebei branches), SmartPay Information Technology Co. Limited Shanghai (Anhui branch), and Qiandai.com Information Technology Co. Limited Beijing (Hebei branch).

There are many regulations that mention AML/CFT. For example, the 2010 PBOC Regulation on Payment Services for Non-Financial Institutions requires that all providers of payment services comply with AML/CFT regulations. In the PBOC Guidance on the Pilot Program of Mobile Money Service in Rural Areas, the reporting procedures of agents need to combat criminal activities. PBOC provincial offices are supposed to develop procedures to report any illegal activities and take preventive measures in association with other relevant government departments. The guidance also requires that “the pilot unit” (the provider) should strictly check and verify the user’s identity. To reduce risks, transfer amounts for each transfer are topped at 1,000 RMB, and a maximum of 10,000 RMB per annum, which is relatively low by international standards.

Likewise the instruction that regulates the pilot that we visited includes some conditions that relate to AML/CFT. For example, maximum cash out per day is 1,000 RMB. The maximum is the same as that of the mobile money Guidance.

Clear regulatory regime for nonbanks to issue electronically stored value¹⁴

In some countries, such as Kenya and the Philippines, MNOs and other nonbanks have been authorized to issue e-money, which provides a means for low-income people to save and transfer money using their e-wallet and without having a bank account. It seems that e-money is widely used in China and that the actual issuance of e-money¹⁵ is authorized for nonbanks, but this issue will require further research that could not be completed in the scope of this report.

In China, the use of e-wallets is widespread among banks, MNOs, CUP, and third-party providers, but typically these wallets are directly linked to an individual bank account, unlike in the well-known Kenyan model for M-PESA, where wallets are typically loaded through encashment at M-PESA agents and are therefore more accessible for the unbanked. By contrast, e-wallets in China are most often mobile applications with payment functionality linking bank accounts to specific payment opportunities (Amazon, Alibaba [with 100 million e-wallets in use (Bischoff 2013)], MasterCard payment gateway, etc.), but the regulation does not allow MNOs or third-party payment companies to let customers cash out of e-wallets, even though this service has been tested by a limited number of actors in the past.

In late 2012, PBOC published technical standards for China’s financial mobile payment industry, comprised of five categories and 35 standards in total. The standards establish the technical systematic framework based on the principle of “networked application, safety and creditability” (China Financial Standardization Technical Committee 2013). The regulatory framework for mobile payments will continue to evolve, with recent announcements that PBOC will issue additional regulation in early 2014 (Xinhuanet 2013a). Mobile payments increased more than five times in volume between 2012 and 2013 to 800 billion yuan (US\$130.4 billion) (Xinhuanet 2013c).

Consumer protection tailored to the branchless banking context

The Chinese financial consumer protection environment is changing rapidly, and it includes several layers. Many policy documents refer to the need to protect and educate clients (see policy section). It is encouraging that Chinese financial authorities are strongly emphasizing these issues since the branchless banking story will be a success only if clients are well protected.

¹⁴ See Tarazi and Lauer (2012).

¹⁵ See this paper’s definition of e-money in Annex 1.

In October 2013, China adopted the Law on Consumer Protection, which includes additional focus on protecting internet and e-commerce clients. The new law also increases the power of the consumer associations and the protection of data privacy (Jordan 2013).

When it comes to financial-sector consumer protection, if we exclude insurance, PBOC and CBRC are the main actors. In the past two years PBOC and CBRC have set up specific bureaus within their organizations to be in charge of consumer protection. The PBOC consumer protection bureau has representation in the 31 PBOC provincial-level branches. PBOC's main role is to conduct research on consumer protection and work with other departments to set cross-sector rules as well as carry out consumer protection work within its boundaries. PBOC has set up a hotline number for complaints and organized campaigns to train rural residents to use bank cards safely. It has also issued some guidelines on personal financial information protection (Xinhuanet 2013c).

CBRC is responsible for setting regulations and detailed policies on banking consumer protection dealing with bank consumers' complaints and practicing consumer education. An independent Consumer Protection Bureau at the China Insurance Regulatory Commission is responsible for consumer protection of insurance. In some cases, the regulators may overlap in their functions (Tianqi 2013).

Financial institutions are increasingly encouraged to better handle complaints from consumers. The China Consumer Association (CCA) is an important channel to resolve some of the complaints. It helps consumers with judicial advice and cooperates with regulators. China is also active in financial education and has drafted a National Strategy on Financial Education (Tianqi 2013).

For branchless banking, the PBOC Guidance on the Pilot Program of Mobile Money Service in Rural Areas includes several conditions to ensure good client protection. For example, when it comes to transparency, each agent is required to display in an "eminent place the unified mark identifying the pilot project." When it comes to complaint management, the provider and the agent are required to stipulate error correction procedures and customer dispute resolution procedures. In case of problems the providers (called pilot units) need to assume the responsibility for paying in advance the financial loss suffered by customers and caused by other reasons than customers themselves. Finally the guidance put strong emphasis on educating both the agents and the clients through training for agents and through public radio, press, events, etc., for clients

The instruction on improving cash withdrawal also includes several items related to consumer protection, for example, on the need for agents to have an identification plaque. Some provinces have adopted fixed fees for all providers whereas others have adopted flexible fees. In Yunnan, fees are fully standardized by CUP, PBOC, and all participating financial institutions. In Szechuan, however, Postal Savings Bank of China sets a minimum and allows agents to charge more than that, at their discretion. In all cases, balance enquiry and bill payments are supposed to be free. In case of complaints, the instruction requires agents to provide a phone number to their clients.

When it comes to electronic banking, the CBRC Guidelines on Safety Assessment of Electronic Banking, of March 2006 stipulate that financial institutions that conduct electronic banking business must undertake security assessment at least two times a year, either using third-party assessment institutions or using an independent assessment department within the financial institutions. The security assessment must include security strategy, internal control, risk management, system security, plans for emergency, and risk alarming system.

Payments system that allow broad interoperability and interconnection

In June 2010, PBOC released the Administrative Measures on the Payment Services of Non-Financial Institutions. The paid-up capital is 100 million RMB, and third-party payment companies can get their licenses from PBOC (30 million if they operate in more than one province). As for mobile financial services, they need to register both with PBOC and MIIT (Oak 2013, p. 74).

CUP is a major contributor to the ecosystem that may enable the growth of branchless banking.

Conclusion

The Chinese regulatory framework for branchless banking is evolving rapidly and could contribute to a financial inclusion success story. Supervisors are clearly concerned about expanding financial inclusion and in fostering usage through new technologies. The pilot regulations already enable a diversity of organizations, such as banks, MNOs, third-party payments companies, e-commerce companies, etc., to operate in the financial inclusion ecosystem.

While we see a rapid evolution in making transactions easier for clients who are already banked, including for poor rural people to expand their use of bank cards toward full banking services, it is unclear whether current branchless banking initiatives will enable China to reach the remaining unbanked population. To achieve a branchless banking success story, regulators will need to balance risks with the potential benefits of innovation for the unbanked and explore several issues that we raise in the conclusion.

5. Retail Branchless Banking Initiatives

The final critical element of China's evolving story is how retail institutions are building on the foundation and regulatory frameworks for branchless banking to effectively serve low-income people, both the unbanked and underbanked. In terms of retail services to clients, there are three main groups to consider: financial institutions, MNOs, and third-party payment providers. Branchless banking in China is developing within the collaborative and competitive space among them.

As reviewed in the previous section, China's government is working with key industry players to implement a range of branchless banking pilots to test models and approaches, including agent banking pilots using bank cards and POS devices (reviewed in the field by CGAP in 2013) as well as NFC and other mobile phone-based payment pilots launched with MNOs, CUP, and others. Experience and lessons learned from these pilots could play an important role in shaping the future of branchless banking in China.

While China is clearly a bank-led environment, the strong growth of the internet incorporating e-commerce, payments, and social media has created an efficient digital platform—reaching hundreds of millions—that is now being leveraged for financial services. Banks are scrambling to address this new competition by building online payment platforms and e-commerce sites. A growing division between online banking (offered by banks) and internet finance (offered by third-party internet players) is beginning to take shape, with the potential for internet-based finance to reach even deeper down market than traditional banks, leveraging big data and offering interesting products that attract low-income users and efficient payment pathways.

5.1 Formal Financial Institutions

Banks have been the first movers in the branchless banking space and have embraced a growing number of innovations in branchless banking. As of 2011, only 1,600 towns and townships out of more than 40,000 had no physical banking outlet (Sun 2013). In many townships and villages, banks have developed innovative approaches to creating branchless access points by establishing ATMs and POS devices with retailers and other nonbanking institutions. Commercial banks, CCBs, VTBs, and RCCs are all active in the branchless banking space, using a combination of approaches detailed below.

A core driver for branchless banking innovation is government's need to distribute transfer payments and subsidies via bank account and provide more convenient encashment capability in rural areas. Two examples of the scale of these transfers include state-provided medical insurance now reaching nearly 900 million people and an annual subsidy of 600 RMB to all rural families (McKinsey 2012).

To understand how branchless banking can and does impact the poor and unbanked in China, it is important as a next step to understand the key actors engaged in financial inclusion as well as the types of financial services that are reaching the poor through conventional and technology-enabled channels. In 2012, CGAP released a study on financial inclusion in China that goes into this topic in detail. Here, we provide an overview as background for how branchless banking can be leveraged to reach the poor.

In recent years, China has become one of the world's fastest growing and most profitable markets for banking and insurance. China will likely overtake the United States as the world's largest banking market by 2023 (Yung 2011). By the same token, China has also made significant strides over the past 10 years in terms of the depth and breadth of its microfinance sector and increased financial inclusion, engaging in a wide range of institutional experiments that are now beginning to yield results across a spectrum of financial actors.

In terms of financial inclusion and institutional experimentation, the Chinese government has made rural access a top priority. The rural financial services market encompasses nearly half the population of China in an area covering 2,800 counties, 40,000 townships, and around 400,000 villages (Deloitte 2012). Following the launch in 2006 of the three new type financial institutions, MCCs, rural mutual credit cooperatives (RMCCs), and VTBs, there has been a rapid expansion of financial services in these rural areas, and they now represent one of the fastest-growing areas of the banking sector in terms of percentage. According to the CBRC 2011 Annual Report, the government has also promoted increased access to services in rural areas by allowing innovative alternatives to physical facilities (see section below for specific examples).

Table 1, adapted from CGAP's 2012 report on financial inclusion in China, presents a summary of the major institutional actors serving rural and SME clients in China, with more detailed presentation to be found in the following narrative report.

Table 1. Financial Institutions Contributing to Inclusion

Important Providers of Financial Services to Rural Households and MSMEs (adapted from CGAP, 2012)						
Regulated/Unregulated	Type of Institution	Short Description	Number of Outlets or Institutions	Number of Retail Clients or Outstanding Portfolio	Year of Estimate	Depth of Outreach
Banks and RCCs	Rural Credit Cooperatives (RCCs)	Small rural-based providers or multiple financial services including savings, loans and money transfer services; gradually transforming into rural commercial banks through reform process.	2,646	77 million	2011	High
	Agricultural Bank of China (ABC)	One of the country's original five large commercial banks; formerly state-owned and now partly privatized. ABC has a history of failed subsidized programming. New sustainable programming directives launched in 2007 resulted significant turnaround. ABC has 320 million retail customers and nearly 24,000 branches and as of 2010 had provided 96 million "Kins Farmer Benefit Cards". Now 8th largest bank in the world, following world's largest IPO. Significant agent banking pilots underway.	46,502	409 million retail customers	2012	Mixed
	Postal Savings Bank of China (PSBC)	State-owned commercial bank, formed originally from the postal savings and remittances bureau, now also offering credit and insurance products, with significant agent banking pilots underway in rural areas. Still planning expand by tapping 70,000 additional post office branches.	39,000	400 million retail clients	2013	Mixed
	City Commercial Banks (CCBs)	Small-urban-based providers of multiple financial services, including innovators such as Harbin Bank.	147	NA	2010	Mixed
	Village and Township Banks (VTBs)	One of the three new-type small rural financial institutions, initiated by commercial banks, offering a wide range of banking products. Moreover, only one VTB is permitted per county, creating a more predictable competitive environment. This has drawn the involvement of some of the larger commercial banks, foreign banks and city commercial banks who are keen to expand beyond their city borders such as ANZ, HSBC, Minsheng Bank and Standard Chartered.	726	outstanding portfolio 131.6 billion yuan (\$19.3 billion)	2011	Mixed
	Rural Mutual Credit Cooperatives (RMCCs)	One of the three new-type small rural financial institutions, initiated by rural cooperatives, offering savings and credit services for members only, designed to work as true cooperatives but as fully licensed financial institutions.	50	outstanding portfolio of 27.6 billion yuan (\$4 billion)	2011	Mixed
Nonbanks	Poverty alleviation MFIs (PAMs)	Credit-only institutions that are mostly registered as social welfare organizations original numbering 300. As unregulated bodies, they have lower costs, but are not able to mobilize deposits and most cannot attract new capital. Many have converted to MCCs.	100	NA	2011	High
	MicroCredit Companies (MCCs)	One of the three new-type small credit-only institutions that are registered as private companies. Experiencing very strong growth in terms of portfolio and numbers, but typically with low social performance. Can only borrow up to 50% of equity, which constrains growth. As of 2012, there were over 6,000 MCCs.	7,086	outstanding portfolio 704.3 billion yuan (\$103 billion)	2013	Low
	Peer-to-Peer (P2P) Platform Mangers	Financial advisers that link individual investors with individual borrowers. In 2010 it was estimated that 30 P2Ps existed, with significant growth through 2012.	200	outstanding portfolio 10 billion yuan (\$1.3 billion)	2012	Mixed

Formal financial institutions dominate in the provision of branchless banking in China. According to the CBRC 2011 Annual Report, the formal banking system comprised 3,769 banking institutions, with more than 80 percent of assets classified to commercial banks—although 49 percent were held by China’s “big four” state-owned banks, including the Bank of China, China Construction Bank, Industrial and Commercial Bank of China, and Agricultural Bank of China (ABC). They were followed by joint-stock commercial banks, China Development Bank, policy banks, and city commercial banks. The Tier 2 banks are generally healthier in terms of asset quality and profitability and have lower nonperforming loan ratios than the big four. Foreign investment in the banking sector has increased considerably, with 90 foreign banks in China in 2012. Commercial banks are still under pressure to implement guidelines issued by financial authorities and to favor state-preferred enterprises. And while banks are free to price loans, for the time being, deposit rates are fixed, although this may change in the near future.

The state-owned ABC plays an important role in financial inclusion, with branches and sub-branches in every province. ABC has a long history of failed subsidized programming in rural areas, but following significant reforms in 2007 to ensure commercial viability of the bank, ABC led with delivery of an innovative card-based solution called the Kins Farmers Benefit Card, a debit card accessible via phone, internet, ATM, and POS device. As of 2012, ABC had issued more than 500 million cards and initiated a wide range of partnerships with insurers and other players in areas where it has no outlets, including agent banking pilots with PBOC. ABC is also an important wholesaler in the microfinance space. As of 2012, ABC has provided the China Foundation for Poverty Alleviation (CFPA) with 260 million RMB with simplified collateral requirements and preferential rates. ABC reports that it has supported CFPA to serve more than 7 million rural households in over 16,000 administrative villages.¹⁶ Following its recent initial public offering (IPO), the largest in history, it is unclear how its rural focus will be taken forward and much of the small-scale rural financing mandate may be transferred to Agricultural Development Bank of China.

Another key player in terms of financial inclusion and branchless banking is the Postal Saving Bank of China (PSBC), which was created in 2007 when the government transformed the Postal Savings and Remittance Bureau, with the mandate to develop commercially viable loan products for rural enterprises, migrant workers, and farmers. As of 2013, the bank had established 39,000 service outlets, of which two-thirds were at the county level and below. The bank had more than 893 million accounts, including 400 million individual clients. It has issued over 400 million debit cards focused largely on students, self-employed entrepreneurs, migrant workers, and pensioners (Sparreboom and Duflos 2012). By mid-2013, PSBC, with 14 million loans to MSMEs, was probably the largest single supplier of microcredit and small business loans in terms of number of clients. But while it is the nation's fifth biggest bank by deposits with 4.5 trillion RMB (\$724 billion), it has lent out only a fraction of that cash. Its loan-to-deposit ratio stands at less than 20 percent, compared with a Chinese industry-wide average closer to 70 percent (Guohua 2013).

Although ABC and PSBC are the two major commercial banks impacting financial inclusion, the scale of market need has prompted Beijing to invite foreign banks to serve rural populations that lack access to funding. At the end of 2006, Beijing kicked off a reform to give wider access to private capital and foreign investors to establish rural commercial banks (RCBs), MCCs, and rural mutual funds. HSBC opened its first RCB in Hubei in December 2007 and now owns nine rural lenders on the mainland, making it the biggest foreign player in the sector. Foreign investors are also teaming up with Chinese banks to set up a rural presence. Spain-based Banco Santander Central Hispano and China Construction Bank will set up a holding company under which 100 rural lenders will be established in three years. Bank of China and Temasek Holdings may invest as much as 20 billion yuan (HK\$22.7 billion) to build its RCB business. The companies are in talks about setting up as many as 400 RCBs (Deloitte 2012). Some of these banks are now actively embracing branchless banking to drive growth in underserved areas.

It should be noted that rural lending in China does not necessarily target deep rural areas or low-income groups, and the future direction of these banks within such a large market may tend more toward mass market (low- and middle-income clients) outreach. Rural financial services located in areas where the vast majority of China's poor populations are found continue to undergo reform efforts, aimed at supporting agriculture, farmers, and villages. In addition to major banks ABC and PSBC, this space is dominated by rural commercial banks, rural cooperative banks, and RCCs. Some of these institutions

¹⁶ ABC website, www.abchina.com/en/; figures are cumulative.

reach significant scale, with the Chongqing Rural Commercial Bank, for example, recently raising nearly \$1.5 billion upon IPO (Ho 2012).

China's RCCs are perhaps the most important institutions related to financial inclusion, as the CGAP Financial Inclusion study indicated, this is the type of microfinance institution (MFI) that consistently serves low-income people. RCCs have a 50-year history and consist of a large and diverse set of small-scale, locally based rural financial institutions, which in 2011 included 212 rural commercial banks, 190 rural cooperative banks, and 2,265 RCCs (Sun 2013). The Chinese government has undertaken reform of the system at a number of junctures since 1996 aimed at improving operations and targeting products and services to rural populations. By 2003, 90 percent of RCCs were partners in the implementation of a nationwide microcredit program at scale, and half of RCCs offered group loans. By 2011, RCCs had 77,000 branches and were providing 77.4 percent of loans to farmers and villages in China, totaling 6.7 trillion RMB, or nearly US\$1 trillion, having increased total assets more than five-fold over the past 10 years (Sun 2013, p. 13).

Ongoing reform of RCCs has resulted in considerable progress, and their business performance has improved. Small, local RCCs are typically organized with operational and technical links to province-level RCCs.¹⁷ Increasingly, regional apex RCCs are using technology, such as the F-Road SIM overly (detailed in the Branchless Banking section below), working to bring operations online, and offering clients full branchless banking services. RCCs are playing an important role in the agent banking pilots ongoing with PBOC. Clear trends point to the gradual commercialization and increased competitiveness of the sector, as well as to its increased role in promoting branchless banking.

5.2 Informal Financial Sector Players

Despite the advances of institutional and formal financial services over the past decade in China, households and MSEs still rely heavily on family and friends and other informal sources of funds. Historically, Chinese banks are discouraged from extending credit to private businesses, and state banks have been pressured to lend to SOEs to minimize unemployment and instability. The following data from a recent survey of MSMEs in the Yangtze Delta area show the relative roles of friends, family, banks, RCCs, and informal lending options (see Table 2). The following section provides a brief overview of the main players in the informal financial sector, with highlights around potential to leverage technology.

¹⁷ Interview with Su Hidong, president, F-Road, Shanghai, August 2013.

Table 2. Sources of Micro and Small Enterprise Financing (Yangtze Delta by sales, RMB 10,000, %)

Annual Sales	≤500	500-1000	1000-2000	2000-3000	MSEs in Total
Size by MIIT	Micro	Small	Small	Small	
Relatives/Family	51	42	36	27	47
Banks	28	41	53	70	35
RCC	25	32	27	27	26
Informal lending	24	23	20	15	23
Others	7	9	1	1	8
Never borrowing	24	21	2	11	23

Source: Liu (2013).

Despite this scale and the rapid growth of providers including MCCs, P2P platforms, and others, nonbank microfinance providers do not yet play a major role in branchless banking, mainly due to regulatory and capacity constraints, although this may change as more third-party payment providers adapt microfinance models and institutions to reach low-income markets more effectively with credit.

MCCs began to be established in 2005, when PBOC designed and pilot tested MCCs as privately funded, credit-only institutions, linked to limited geographies. By the end of 2013, 7,300 MCCs had been established, and they issued nearly 150 billion yuan (\$23.83 billion) in loans over the year (Global Times 2013). At this stage, a vast majority of MCCs are focused on lending and do not engage in payments. However, e-commerce giant Alibaba and other technology players have also created MCCs to build their own microfinance portfolio for member traders, tapping into payment system data and digital credit scoring models (see detail later in report). The spotlight of shadow banking has recently been directed to MCCs, though, and they can expect additional scrutiny.

Historically, the most consistent MFIs in terms of reaching the poor have been the poverty alleviation microfinance (PAMs) institutions, which were launched in the early 1990s following a nonprofit model for microcredit only that tends to target the rural poor. Very few of these institutions, however, have managed to scale to more than 10,000 clients, CFPA being a notable exception with over 130,000 active borrowers (MIXMarket 2012). As unregulated bodies, they have lower costs, but they are not able to mobilize deposits and most cannot attract new capital. In 2010, it was estimated that there were approximately 100 remaining PAMs, from an initial 300 institutions. Many have converted to MCCs, but some, including CFPA, are exploring ways to bring branchless banking options to their clientele, despite regulatory constraints.

Launched in 2006, P2P platforms have been a fast-growing phenomenon in the Chinese informal finance landscape; they have rapidly expanded to more than 200 platforms, according to CreditEase (2013). P2P platforms intermediate between individual investors and borrowers via the internet in urban and rural areas and tend to be registered as nonfinancial companies earning transaction fees on intermediation. Investors in P2P platforms are offered rates of 8–20 percent per annum, versus the 3.5 percent they would earn on a bank deposit account. Platforms typically charge borrowers 10–50 percent interest. Well-known examples of the P2P model include CreditEase, Renrendai, 51Qian, and Tuandai (CreditEase 2013).

A growing number of P2P lending platforms have been shifting offline, which essentially allows them to operate like small loan companies, seeking investors online and borrowers offline. While much of this lending ultimately funds consumer needs, some P2P platforms, such as CreditEase, target the rural unbanked as part of their client portfolio.

This increasingly competitive environment has attracted many speculators into the market. P2P platforms are growing at an annual rate of 300 percent per year as Chinese citizens look to drive higher returns through facilitated lending, but CBRC has increasingly raised red flags about abuses in this largely unregulated space, hinting at the need for more regulation and potential to include P2P platforms in the shadow banking category (see Box 3) (Securities Times Online News Center 2013). At the same time, P2P platforms may soon gain access to state-owned credit bureaus to decrease credit risk and facilitate more lending and possible applications within the branchless banking arena

5.3 Mobile Network Operators

In much of the developing world, MNOs are playing a critical role in driving financial services to low-income clients through mobile money, allowing people the options to store and transfer small amounts in their mobile wallets, cashing in and out through large agent networks inexpensively and in real time. In China, however, the role of MNOs in financial inclusion has been quite different. MNOs serve mainly as a communications and internet infrastructure enabler, rather than a direct service provider. That said, MNOs are undertaking a range of payment pilot activities that could more actively contribute to financial inclusion.

There is certainly strong potential for Chinese MNOs to enable financial inclusion, with 1.104 billion mobile phone users in the country (Shu 2012). China Mobile, with 710.3 million wireless subscribers and 87.9 million 3G users, is the world's biggest mobile operator by subscriber base. China Unicom is the second operator, followed by China Telecom. Over the past five years, the three operators, which are all state-owned, have also established their own payments service companies, partnering with CUP, as well

Box 3. Shadow Banking and Financial Access

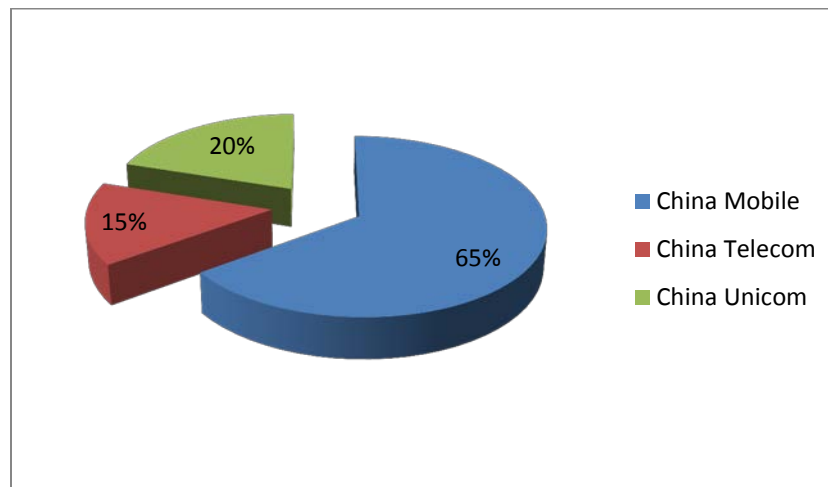
The ongoing debate around shadow banking in China increasingly involves players engaged in financial inclusion. Shadow banking is a term often applied to a range of nonbank financial intermediaries that provides services similar to traditional commercial banks, but does not have banking licenses and doesn't accept deposits like a depository bank and therefore is not subject to the same regulations. Many experts note, however, that regulated banks are the largest shadow banks because they conduct many of their transactions in ways that don't show up on their conventional balance sheets and are not visible to regulators or investors (Fein 2013). As of 2013, academic research has suggested that the true size of the shadow banking system globally may be over \$100 trillion, almost double its size before the financial crisis in 2008 (Masters 2011).

The shadow banking system in China is complicated, diversified, and has a large presence in the Chinese marketplace. These institutions include various types of investment companies, guarantee companies, pawn shops and "grey" private loan companies, focused on provision of loans, although the form of credit varies. One of the key drivers of the shadow banking system is the low interest rate (average 2 percent) Chinese depositors are paid on accounts in licensed banks.

Understandably, depositors seek higher returns elsewhere, choosing to speculate on property and embrace shadow banking, including P2P platforms, microcredit, and wealth management products. A related driver of the system is the lack of credit, particularly small-scale loans, available through commercial banks. State-affiliated companies and well-connected, private-sector borrowers take the bulk of funds for loans, leaving very little for SMEs, which make up 99 percent of Chinese enterprise (Ministry of Commerce 2014). Recently, MCCs were included in the CBRC listing of shadow banking institutions, with the potential to add P2P platforms as well.

as other market players, including banks and online payment platforms, including Sina Weibo and Alipay.

Figure 6. MNO Market Share (2012)



But despite the scale of China's MNOs, operators have struggled to establish a relevant role in providing financial services, such as many African operators have established around mobile money. Most players believe that the predominance of bank accounts degrades wallet utility. This phenomenon is explored in more depth in a recent CGAP paper on market archetypes in branchless banking (Faz and Mozer 2013). Regulatory limitations are also a factor, with recent regulation limiting total transactions on a mobile wallet per year to 1,000 RMB (approximately \$160),¹⁸ as well as significant limitations on cashing in and out of mobile wallets. MNOs indicate that rural markets are likely to be the source of interesting initiatives in the future. China Mobile, for example, presented at the GSMA annual conference on its mobile information service for farmers that has reached over 50 million customers, with the potential to reach 700 million to 800 million farmers in China. However, although many have pointed to mobile wallets as an important tool for financial inclusion to serve rural and migrant populations, this potential is untapped. While all mobile operators do offer mobile wallet services, they typically enable clients to link bank accounts to smartphones to make mobile payments and are not a real driver for financial inclusion. They are therefore still additive rather than transformational.

5.4 Third-Party Payment Providers

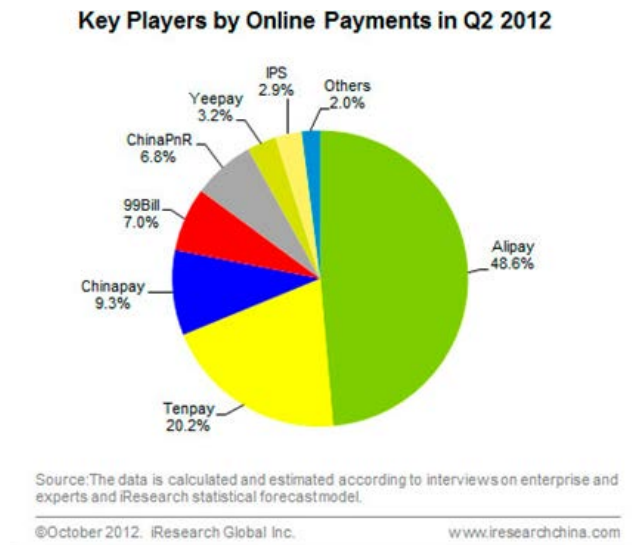
In the overall story of China's evolving branchless market development, third-party payment providers are a source of major innovation in the payment space in China, with 223 third-party payment licenses as of 2012 (Butani 2012). Analysts point to online payment providers and other payments start-ups in China as the most active innovators and pioneers in the market, able to bring their online experience to bear in the mobile market. These providers settled online transactions estimated to be \$619.4 billion (3.8 trillion CNY) in 2012, triple their turnover for 2011 (Wang 2013).

By the first quarter 2012, there were 1.089 billion registered accounts in China's third-party internet payment market. A November 2012 report on market share showed that Alipay, a major third-party payment services under e-commerce giant Alibaba, was at the top with 48.9 percent share of the

¹⁸ Interview with Ma Tengyan, project manager Data Services, China Mobile, March 2013.

market, followed by Tenpay with 20.2 percent market share, UnionPay, 99bill, and ChinaPnR (Chen 2012).

Figure 7. Market Share of Third-Party Online Payment Players (2012)



Currently, third-party payment enterprises in China show two main kinds of development models (Research in China 2013). While Alipay and TenPay focus largely on the needs of individual users in business development and product innovation, other third-party payment parties, including 99Bill, ChinaPnR, YeePay, and iPS, treat corporate users as the focus of business development, providing integrated solutions to enterprises so as to meet their requirements (Research in China 2013).

E-commerce is the leading driver of China's online payments, where nearly 80 percent of users are buying consumer goods, followed by air time top up, bill pay, and other services (Research in China 2013). The growth rate is estimated to be 4.1 times larger than China's GDP in 2012, according to a Ministry of Commerce (MOC) report released in 2013 (Knowledge@Wharton 2012). Chinese e-commerce is expected to triple by 2015, when sales could reach \$420 billion, becoming the world's largest e-commerce market.

The clear market leader in e-commerce is Alibaba.com, founder of Alipay, which has features of Amazon, Ebay, and Angie's List. The company's English-language international marketplace serves to bring together importers and exporters from more than 240 countries and regions. The China marketplace is developed for domestic business-to-business trade in China, known as the TaoBao Marketplace, or simply TaoBao, which is the biggest consumer-to-consumer online shopping platform in China.

In terms of relevance for development impacts, Alibaba estimates that the trading platform has helped create 2.67 million jobs directly through business growth, as well as indirect job formation through their collaboration with logistics companies and other partners. As a part of its efforts to understand the impact of the e-commerce model, Alibaba tracks TaoBao Villages, which are rural villages where nearly all households are using the TaoBao platform in some capacity. The benefits include the following:

- Providing low-income, remote, and other populations access to a broader range of goods and services at lower wholesale and retail prices
- Providing small-scale producers with new sales channels
- Reducing operational and startup costs for MSEs

Alipay had over 800 million registered accounts at the end of 2012 and logs more than 1 million transactions per day. It provides a payment service called escrow, in which consumers can verify whether they are happy with goods they have bought before releasing money to the seller. This has been a significant benefit of the service because China's weak consumer protection laws reduce consumer confidence.

While Alipay's online payments (i.e., computer-based) still dominate with 80 percent of total transactions, mobile phone-based payments grew from 10 to 20 percent of total transactions last year. And while big cities topped in spending, underdeveloped regions experienced the fastest growth, as Tier 4 cities grew 64 percent in online payment users. People can use Alipay to pay for utilities, medical insurance, airtime, goods and services, credit card and microloan repayment, charitable donations, and wealth management products.

Social media is also beginning to play major growth roles in mobile payments. Wechat, China's most popular instant-messaging service, developed by Tencent, added a mobile payment service on its platform in August 2013, and Baidu, China's leading search engine, followed by introducing its own mobile payment service—Baidu Wallet SDK (Xinhuanet 2013c). Given China's high use of social networking, Baidu's wallet has already seen phenomenal growth since its introduction in August (MacKenzie 2013). A key policy question is whether the ease of access to electronic payments and e-commerce through technology is a meaningful driver of financial inclusion through the creation of new use cases for branchless banking that are meaningful for low-income groups seeking market opportunities, as well as basic goods and services. Regulators are also beginning to pay more attention to and crack down on innovative payment solutions that online giants are developing with a view to data security; they are also under pressure from banks and CUP, which are impacted by these disruptive players (Rabinovitch 2014).

5.5. Branchless Banking Initiatives

Mobile Banking

The number of mobile banking users in China reached 150 million in 2012, accounting for more than 40 percent of mobile banking users worldwide. Major commercial banks saw more than 100 percent growth in mobile banking users in 2012 and more than 300 percent growth in mobile transaction value (Zhang 2013). A 2012 Deloitte banking survey notes that nearly all commercial banks already offer mobile banking solutions for their clients, with differing levels of sophistication. With the continuous expansion of the mobile user base and increasing demand for mobile financial channels, coupled with the urgent need of traditional banks to adopt new delivery options, mobile banking is poised for growth. Few Chinese commercial banks target or effectively serve low-income market segments or specifically design mobile services for this market, however. Shanghai Pudong Development Bank is a notable exception with an innovative account-to-cell remittance product and mobile enterprise solutions

tailored for small business. In terms of financial inclusion, mobile banking thus far has proven to be more additive than transformational in China, serving clients who are already banked, rather than using these innovations to reach unbanked and underserved markets. While this is common worldwide, it does miss the opportunity of using low-cost and accessible mobile channels to drive financial inclusion.

Agent Banking Pilots

In 2010, PBOC initiated a branchless banking pilot project nationwide to expand financial inclusion, as well as to improve access to accounts for the banked in rural areas so they can receive government transfer flows. The number of agents in China launched by banks and RCCs in this period is staggering—reaching a high of 620,000, before recently decreasing to approximately 500,000 largely due to high costs and low transaction volumes at some agents.¹⁹ CGAP field work confirmed low transaction volumes across many agents, but also noted strong commitment by banks and policy makers to the potential of agent banking. Regulators note that the first phase is focused on getting the model right for clients, with a subsequent focus on the economics for participating banks.

In August 2013, CGAP, working in partnership with IFC, CUP, and participating banks and RCCs in Yunnan and Chongqing, conducted a short review of the agent banking pilots. Yunnan and Chongqing have developed highly varied approaches to the pilot that impact outreach and viability (see annexes for detailed profiles of Chinese agents). Currently, agents are allowed to process cash withdrawals from bank accounts, as well as conduct bank transfers and payments. Cash deposits and account openings, however, are not allowed, although the review of the pilots indicated significant client demand for such services. Table 3 summarizes the findings from the agent review.

Table 3. Summary of Agent Findings from Yunnan and Chongqing

KEY AGENT INDICATORS (sample of 12)	% or #
Percentage of rural agents	58%
Percentage of female agents	67%
Average number of bank accounts	4
Percent of smart phones used by agents	92%
Percent of agents making online purchases	75%
Average percentage increase in foot traffic as agent	26%
Average number of transactions per day	4
Average monthly income from agent business	\$ 59.03
Percent of agents citing issues with system downtime	75%
Percent of agents citing demand for deposit services	75%
Percent of agents citing demand for account opening	50%

In Yunnan, the mission focused on the Chenggong district where 45 percent of the population is rural. In Yunnan the Benefit to Farmers Program started in 2010 and is being implemented with CUP in the lead, providing an interoperable POS solution used by all agents with partner financial institutions, made up principally of RCCs, followed by PSBC, ABC, and China Construction Bank to a lesser extent. The regulator has also played a highly active role in negotiating interoperability arrangements, providing start-up

¹⁹ Interview with Product and Innovation Department, China Union Pay, Yunnan, August 2013.

financing, training, and marketing for agents in Yunnan, stressing the high levels of poverty and low bank branch penetration across particularly mountainous terrain. Agents have POS devices that process debit cards from any bank, based on standardized pricing mandated across the province, which provides slightly more than half of the fees for cash out, transfers, and bill pay to the agent, with the remainder shared among CUP, acquirers, and issuers.

Banking penetration levels are high in Yunnan, with only 1.3 million adults unbanked out of 46 million. But while urban populations have accepted cards and branchless banking, in rural areas, card usage is still low, with populations preferring passbooks and cash. PBOC recognizes that the elderly, in particular, find it difficult to adopt cards, and more work is needed to train agents and increase publicity around the services. Still, 11,720 agents have been established in Yunnan, many in combination with air time top-up locations for China Mobile, serving an estimated 4 million households. While transactional fees are low, impacting bank profitability (see annexes for additional detail), the model has potential for success. CUP believes that agent interoperability is a key success factor in Yunnan, pointing to its exclusive agent banking partnership in Sichuan project with 50,000 China Construction Bank agents, which have lower transaction volumes.

The second location for agent review was Chongqing, one of the four direct-control municipal areas in China, with a population of 32 million, 20 percent of which is unbanked. The main actor is PSBC, which serves nearly half of the adult population in the region. Under PSBC in Chongqing, agents operate on an exclusive basis, although they technically can process “off us” payments through POS machines. Fee structures of the agents are not fully standardized. PSBC agent formation is driven largely by its partner China Post, leveraging a franchise chain of 2,000 agricultural input suppliers that work in partnership with the post office. These shops have limited cash and stock and are not always open, but are trusted by farmers. Transaction levels in Chongqing are lower than in Yunnan, but appear to increase the farther the agent is from an urban center.

Box 4. Profile of a High Performing Agent in Yunnan

He Shaolong is an agent for an RCC in Yunnan’s Chenggong District, a semi-rural area near the capital where a new university has been constructed. He owns his grocery store, located close to a small outdoor market in a community of approximately 3,000 people, with no bank branch or ATM in the immediate area. He has been a client of RCC for 15 years and has accounts at four other banks. He provides a range of services for any bank card holder, including cash out, bill payments and bank transfers via POS devices as an agent for RCC and also sells airtime for China Mobile via his laptop.

His main banking customers are migrant workers, university students, and farmers. His shop is open every day from 7 am to 10 pm. He sees additional client demand for account opening, deposits, and higher maximum withdrawal limits and would like more marketing support from RCC to expand the service.

Key Results for this Agent’s Business:

- ✓ 20% increase in foot traffic
- ✓ 15 transactions per day
- ✓ earning \$3.75/day in fees

In both Yunnan and Chongqing, the banks’ main motivation to participate in the pilots is to gain access to lucrative government transfer streams, but there were questions from CUP and banks around how to make the model more profitable by using mobile phones, as well as POS, and also by finding safe ways to accept deposits and make loans through agents in rural areas. Most importantly, despite its scale, agent banking is still considered in pilot, and full regulations have not yet been passed to promote full establishment of this branchless banking approach.

The SIM Overlay for RCCs and Small Financial Institutions

A good example of innovation in the banking sector is being driven by private-sector player F-Road, which is working with smaller financial institutions to provide SIM overlay technology. Shanghai-based technical company F-Road sells its solution to smaller banks and RCCs to provide a mobile banking platform that enables end-clients to access basic banking services,

including money transfer, remittance, bill payment, card operations, lending, and account management, via nearly any type of mobile phone. SIM overlay technology was initially developed by Chinese MNOs nearly a decade ago as a mobile phone solution to support multi-operator access, designed to avoid roaming fees. Canadian company Roamly uses this technology for the same purpose today globally. F-Road believes it is the first company to use the solution for financial services and branchless banking.

The SIM overlay consists of a paper-thin plastic sheet with an embedded chip that can be adhered to the top of any SIM card. Touch points built into the overlay filter information between the two layers. The hardware provides a means to store and carry any program logic independent of the SIM, allowing F-Road partner banks to provide the solution to their clients, regardless of the SIM they carry, while minimizing communications costs driving mobile banking functionality for customers through a simple, telecommunications-agnostic technology. F-Road uses SMS, rather than mobile applications over internet. Although many F-Road clients initially took this to be older technology, it has the advantages of being operational on 95–97 percent of both smart and functional phones and being more secure than internet channels, which are under constant hacking threat in China.

F-Road offers the solution to smaller banks and RCCs, some of which have millions of low-income clients. After four years of work, F-Road serves nearly 650 financial institutions across China with its SIM overlay product, reaching 4 million active users. The growth curve is picking up, with partner banks onboarding 20,000 new clients per week. F-Road estimates that it will reach 7 million active users by the end of 2013, reaching a combination of both the banked and underbanked served through RCCs.²⁰

In terms of financial inclusion, F-Road is important in that it includes service to RCCs that are the key market players reaching the poor, collectively serving 73 million people in rural areas throughout China (Sparreboom and Duflos 2012). Because the solution works on basic- feature phones as well as smart phones, it is more accessible to the poor than standard mobile banking applications. Preliminary research indicates the main users for mobile banking among F-Road clients' banks are MSE owners, who use the channel to pay suppliers and make payroll, as well as for e-commerce and mobile payments, where the entrepreneurs buy wholesale goods online via mobile from online giants such as Alibaba and Tencent (see section below on the virtual marketplace's role in driving MSE growth).

"Mini-Branch" Self-Service Points

China has also been an innovator in self-service banking models. One example is Bank of Huzhou, a mid-sized city commercial bank formed through the merger of eight RCCs, with an acknowledged strong information technology team. The bank has developed a relatively low-cost "mini branch" model that includes a suite of five self-service machines for very small villages and peri-urban areas with no bank branches. The machines, which were custom designed and built in China for the bank, can open accounts and issue bank cards in real time, taking advantage of China's universal ID card and easy account opening standards. Another machine uses a high-resolution scanner to process checks for deposits. The mini-branch suite of self-service machines can perform 95 percent of all branch functions, with no bank staff, allowing the bank to open mini-branches without heavy regulatory requirements and cost. Community volunteers man the mini-branch to help new clients use services. Bank of Huzhou needs approximately 5,000 active clients for each mini-branch to break even and plans to expand the model, based on initial experience indicating fast uptake of accounts. Thus far, Bank of Huzhou has launched only four mini-branches, as full regulatory approvals are still pending.

²⁰ Interview with Su Hidong, president, F-Road, Shanghai, August 2013.

Television Banking

Chongqing Three Gorges Bank is a medium-sized bank tasked to serve populations displaced by the three gorges hydropower project. The bank has worked with its area cable operator CCTV to buy rights to a cable channel to deliver banking services via television as the client interface. Bank clients with a television and a standard cable service can elect to add this channel and manage their accounts using the basic television remote to maneuver through banking operations, including making payments, enquiries, and transfers. While this is a new service launched early in early 2013 and has reached only 2,000 clients in its initial months of implementation, Chongqing Three Gorges Bank believes it will provide greater accessibility and more intuitive interfaces than personal computer banking, particularly for older urban clients. Younger client segments, however, appear to prefer to use smart phones to manage their bank accounts, with its advantage of mobility. Costs of operation and setup for the service are relatively low, and more Chinese banks are adding this type of service, which is now being offered by ABC, Bank of China, and other major banks trying to tap this ubiquitous digital channel.

Mobile Payment Pilots

Chinese MNOs are innovating in the area of NFC technology, which is largely focused on urban commercial pilot projects for financial institutions, mobile operators, and other companies. However, in 2012, the PBOC launched pilot projects for mobile payment services in selected rural areas. To use the services, rural residents must apply for a credit card, along with a SIM card linked to their bank account. The mobile services allow users to process taxes, make remittances, and withdraw small amounts of cash. ABC, PSBC, CUP, and three Chinese telecommunications operators are among the first batch of companies participating in the pilot projects (C114 2012). CUP is conducting training programs for some agricultural product dealers, to promote mobile payment services in rural areas.

Chengdu, the capital of Sichuan province, signed a strategic cooperation agreement with China Mobile and CUP in 2012 for its development as a model city for mobile commerce. The companies will jointly support the city's goal by promoting the mobile wallet and deploying NFC terminals to support mobile payments. The deal with Chengdu is one of the first concrete projects from the China Mobile–CUP agreement to collaborate on mobile payments services, such as integrating banking details into SIM cards and NFC-based digital wallets (Balaban 2012). In a similar initiative, China Unicom has partnered with China Merchants Bank to launch a mobile wallet service in Shanghai for NFC-enabled phones. These pilots are developing slowly due to extensive technology requirements and will require time to demonstrate relevance for lower-income markets. China Mobile cites a number of factors that have contributed to NFC's slow movement, including the lack of mass-market NFC handsets, complex SIM card upgrades, and insufficient experience in making and accepting transactions among the public and businesses (Dyer 2013). Given hand phone requirements and urban deployment factors around NFC, this is also not likely to be a technology serving the poor in the short and medium term.

The rapidly growing smartphone market in China is fueling even bigger, more fundamental changes in how consumers interact and engage online with each other, service providers, retailers, etc. A recent KPMG report notes that while mobile payments have stalled in the United States and Europe, they are skyrocketing in China. In 2013 there was a five-fold increase in mobile payments (Xinhuanet 2013c). The Development Research Center of the State Council described 2012 as the beginning of "a new era" for mobile payments.

E-commerce, Third-Party Payments, and Microfinance

Alibaba's TaoBao platform has 16 million participating vendor businesses, nearly 90 percent of which are SMEs that find it difficult to access finance to fuel their growth. In 2011, AliFinance was established to provide loans to vendors on the TaoBao and Alibaba platforms. Alibaba has built its own credit scoring model based on online vendor activity, using its e-commerce platform data to understand borrowers' behaviors and characteristics and offer responsive financial services, overturning traditional banking models and leveraging the group's cloud computing services to keep response time to customers fast and operational costs low. Alibaba's credit scoring model taps over 1,000 data sets related to each client, including the following:

- Revenue growth
- Transaction data
- Position/rating of the client in their own industry
- Changes in rating within industry
- User ratings and purchases
- Any experiences with poor behavior and "punishment records" on TaoBao
- Number of users who rate the seller as a favorite
- Usage levels and repeat buyers

AliFinance currently has 409,444 borrowers spanning the country with an outstanding portfolio of 105 billion RMB (\$17.2 billion). Loans are 100 percent unsecured and require three months of platform trading activity to qualify. The average loan size is 20,000–30,000 RMB (\$3,500 to \$5,000), and repayment terms are flexible. Clients qualify for a credit limit based entirely on their credit score. No contact is needed between borrower and lender, with communications, contracting, and payment handled online, helping reduce costs and risk. Nonperforming loans on the portfolio is 50 million–60 million RMB out of 105 billion RMB outstanding, or less than 0.0005 percent.

Alibaba's new microlending efforts, which are registered as MCCs, may soon qualify as part of China's shadow banking system. Some analysts point to the potential for online lending to make small-scale lending more transparent. Traditional banks are weighing their options while internet companies, such as AliFinance, are jumping into the business of microfinance, armed with big data and millions of active clients. According to the *Financial Times*, despite its fast growth, AliFinance still makes up only about 0.1 percent of the total number of loans issued by China's banks (Guo 2013). However, AliFinance has been given regulatory leeway to leverage its microlending operations beyond standard limits on its registered capital, growing roughly 40 times as big as a normal MCC is allowed. Some questions have been raised about how far the model can scale without a banking license, although AliFinance actively partners with banks in the lending process. Jack Ma, founder of Alibaba, recently argued that the Chinese financial industry is over-regulated. He noted, "There are two big opportunities in the future financial industry. One is online banking, where all the financial institutions go online; the other is internet finance, with is purely led by outsiders. The financial industry needs spoilers to make a revolution" (Guo 2013).

Conclusion

Financial inclusion in China is beginning to benefit from the regulatory advances over the past 10 years that clear the way for a great array of diverse institutions that now engage in providing financial services to low-income markets. This space now includes banks, nonbank financial institutions, MNOs, and third-

party payment providers competing for each client. Interoperability and strong infrastructure are providing the basis for exponential growth.

The phenomenal growth of electronic payment channels has opened up new virtual marketplaces where millions of MSEs and hundreds of millions of consumers across China can participate via electronic payments, driving the use case for both bank accounts and e-wallets. Based on China's strong mobile communications infrastructure, the country could now move in directions that access mobile information services tied to mobile financial services to further build utility and value. Technology-enabled payment systems have also been tapped elsewhere in the world to enable business model innovations in clean energy, agriculture, education, water and sanitation, transportation, and health. And while the payment industry is clearly growing in terms of use and profitability, the ability of low-income people to access and effectively use online and digital payments as a part of financial inclusion is only beginning to be seen.

6. Conclusions

Building on its strong banking, regulatory, payments, and communications frameworks, China has immense potential to use branchless banking to build a success story in financial inclusion, but the missing link is how to extend these innovative channels and products to the 40 percent of the population that remain unbanked. The next wave of inclusion could well be done through agents, the internet, and other branchless banking channels. However, branchless banking is still in its early days of piloting, trial, and learning. The goal of full financial inclusion remains to be reached in China, and the complexities of Chinese markets may well divert or slow branchless banking initiatives in the future.

While technological innovation is taking place, policy makers must ask what can be transformative and what is needed to effectively serve the poor. Globally, CGAP has consistently identified challenges both with client uptake and long-term activity levels around branchless banking, as well as profitability for implementing institutions and regulatory issues. This section raises critical questions for retail business models and regulators with a view to expand transformative branchless banking in China.

Key Considerations for Retail Business Models

A great deal of the innovation in branchless banking in China is clearly oriented toward more affluent and banked populations. New models in agent banking, mobile banking, digital payments, and e-money have promise to be transformational, but must be supported by meaningful products and viable business models that meet the needs of the poor to drive a new phase of technology-enabled rural growth and poverty alleviation.

The following ongoing initiatives have the potential to be transformative but can also face implementation challenges, based on international experience:

- **Agent Banking Pilots.** The large-scale agent banking pilots sponsored by PBOC, CUP, major banks, and RCCs have brought banking services closer to rural populations, including the poor. In CGAP's limited field survey, it was clear that agents are relevant and become even more so the farther they are from bank branches. However, operational challenges for agent banking do exist, such as agent and client dormancy, which are common among many countries implementing these models unless proactively understood and addressed. Regulators and implementing financial institutions should consider how the pilots deal with client and agent dormancy.

In many countries, financial and digital literacy constraints are also significant. In China, there are clear indications that rural clients prefer passbooks and bank branches to bank cards and cell phones. Use of lower-cost mobile phones for transactions has been largely rejected by banks thus far as being too difficult to administer and understand by both agents and end clients. Use of clear performance information to hone business models will be critical to transforming agent networks to effectively drive financial inclusion and utility.

The pilots rely on high-cost card and POS models at agents, which are reported as not cost-effective, but easily understood and operated at the agent and client levels. State-owned banks and MNOs interviewed do not currently see branchless banking in rural areas as a viable business case, but engage due to government mandate as well as long-term vision for profitability as markets evolve, particularly through the delivery of significant government

transfer flows. The implications of this for the ultimate scale and sustainability of these services are tremendously important. While political pressure has proven to be an important driver of expansion of services, the experience with no-frills accounts, e.g., in India and other countries, should serve as a potent reminder of its limits when it ultimately comes down to client adoption, use, and viability. With current regulatory limits on the kinds and amounts of transactions that agents are able to make, banking with agents does not seem to be a profitable business, and a key concern would be the sustainable implementation of agent banking as political imperatives subside.

- **SIM Overlay Technology.** F-Road's strong engagement with RCCs in particular, working through viable regional apex cooperatives to provide services to smaller rural cooperatives, is a key element of its transformative role in financial inclusion. RCCs have demonstrated their ability to bank the unbanked. Early indications are that rural, low-income populations are embracing branchless banking, in particular mobile payments, through F-Road's technology to access e-commerce and other electronic-payment streams. However, the SIM overlay technology operates within some degree of legal uncertainty and needs to demonstrate its full commercial viability moving forward.
- **E-commerce, Big Data, and Microfinance.** E-commerce giant Alibaba did not originally set out to venture into microfinance when it was formed in 1999. However, enabled by Alipay and its rich store of data from the TaoBao platform, Alifinance is lending at smaller loan sizes than nearly any other bank or nonbank financial institution, using technology and its third-party payment platform to provide its borrowers with instant access to funds in a responsible manner. Microfinance is still in its early stages at Alifinance, but it has already reached nearly a half-million borrowers and seems set to expand and shed light on how alternative big data sources and payment platforms can empower access to finance. This evolving space for internet finance, which is quickly expanding to include social network players such as WeChat, may be the future for microlending and also a driver for financial inclusion as low-income people are required to join the digital highway to access these opportunities. Regulatory pressures around mobile phone payments and innovative online financing, however, may increase as online innovators begin to compete more directly with banks (Rabinovitch 2014).

Over the short to medium term other types of providers may also yield benefits for financial inclusion as well, including the following:

- **Self-Service Kiosks.** Self-service banking kiosks, such as ATMs, have been around for a long time and are an important part of financial inclusion. An innovation by Huzhou Bank and others, however, are self-service kiosks that facilitate new account opening, as well as cash and check deposit services. Given China's strong national ID service, relatively low-cost communications networks, and ability to build tailored hardware affordably, rollout of these machines in peri-urban and rural areas with no bank branches could increase the number of people banked, but would need full regulator support for mass uptake.
- **POS, mPOS, Smartphone Payment Applications.** With more than 15 million POS devices held at merchants, the rapid build out of new mobile POS swipe devices (similar to Square), and an increasing number of mobile applications supporting payments on smart phones, such as Lakala, merchant acceptance may skyrocket to rural areas quickly, driving the utility of bank accounts and digital payments by building convenience, ranges of transactions, and accessibility.

- **Mobile Money.** In China, one often hears that mobile money will find its true utility in serving rural areas and populations such as migrant workers that are still paid in cash, living far from bank branches. While e-wallets are clearly focused now on urban micropayments and are currently limited in stored value and encashment functions, given the low cost of communications and coverage of mobile networks, there still could be an important avenue for mobile money and financial inclusion moving forward.

Key issues on policies and regulations

As described in Section 4, regulators have issued several new regulations in the past few years that have driven the growth of branchless banking in China. PBOC is shaping and developing new pilots and analyzing existing pilots to inform new services and regulation, while also cracking down on some new products and services, such as online virtual credit cards, which could pose a risk to consumers. Several issues will require further research and dialogue for the regulator to develop conducive policies and regulations.

- **Regulating innovative approaches.** For many innovative approaches, including agent banking, the SIM overlay, and bank mini-branches, full regulatory approvals are not yet in place, impacting real investment and scale in business models to date. Regulators and institutions are still moving through the early phases of understanding risks and performance of various branchless banking models. In many countries, regulating innovative business models requires coordination among different regulatory bodies and taking a balanced approach between mitigating the new risks associated with technology and enabling innovation to serve financial inclusion.
- **Learning from the pilots.** Upcoming formal reviews of the agent banking pilots could result in empowering the regulatory framework for continued improvements in agent banking. How will PBOC take into account the viability of business models so that it can appeal to the private sector? How will PBOC gather evidence around client adoption and utility, and further incorporate needs for client protection in its regulations for bank agents? Will the pilots be extended? Will the regulation be adjusted based on lessons learned in China and in other countries?
- **Going beyond payments with agents.** After focusing on building cash-out capacity (linked to government transfer payment pressures), little if any attention has gone to building utility of accounts around rural savings or other services. Clients seem to want to cash in but that is not permitted. There is a strong need to consider client need moving forward around regulation, products, and relevant technology. How will PBOC coordinate with CBRC on issues related with deposits? Will agents be able to open accounts to deepen financial inclusion?
- **Determining the role of MNOs.** CGAP field research pointed to high client use of mobile phones, which may be an alternative, lower-cost channel. While it is clear that the card and POS model for the agent banking pilots is fairly easy for clients and agents to adopt, it is also clearly expensive for banks to administer. A key question is whether MNOs and other nonbank institutions will be authorized to issue e-money and enable those estimated 30–40 percent of Chinese adults who don't yet have a bank account to save, receive credit, and transfer money as is the case in Kenya.

- **Understanding the demand from the unserved population.** Since a major risk of failure of branchless banking is a lack of adaptation to specific market segments demand, how will policy makers learn more about clients demand in collaboration with providers? Additional research on clients' needs and behaviors related to technology-enabled financial services will also help the regulators better adapt their policies for impact. CGAP field research pointed to some specific products, including deposits and account opening, that would be of value to clients.²¹ More research is needed on this front, such as qualitative and quantitative market surveys (e.g., FINSCOPE studies and financial diaries).²²
- **Building on global experiences on G2P.** While there are several limitations in the current agent pilot, there is global evidence (e.g., Brazil) that agents can significantly contribute to expanding inclusion. CGAP has conducted extensive research on how G2P payments can lead to better financial inclusion.²³
- **Training supervisors.** Given that new technologies create new kinds of risks, how will supervisors be trained on these new risks and on how to balance them while allowing innovative solutions?

These questions illuminate the need for additional research and a deeper analysis of the regulatory framework that is outside of the scope of this snapshot. Close examination of China's myriad pilot efforts in these areas should yield very interesting and actionable results.

China is very unique and has a great deal of innovation to inform branchless banking initiatives globally. It is an evolving story of a new paradigm in branchless banking and financial inclusion, driven by digital payments and new channels, including agents and e-commerce. Still, there is also much to be learned from branchless banking failures and successes around the world. Organizations such as CGAP, IFC, and AFI can serve as partners to share, contribute, and exchange lessons from other countries with China.

²¹ See, e.g., the experience of Brazil and Mexico in CGAP's Applied Product Innovation program, <http://www.cgap.org/about/programs/applied-product-innovation>

²² Finscope is a demand survey that analyses drivers and barriers to financial access. For more information, see www.finscope.co.za.

²³ See CGAP work on G2P at <http://www.cgap.org/site-search/G2P>

Annex 1. Definition of Key Terms

Additive versus Transformational Branchless Banking. Branchless banking can be either additive or transformational. It is additive when it merely adds to the range of choices or enhances the convenience of existing customers of mainstream financial institutions. It is transformational when it extends to customers who would not be reached profitably with traditional branch-based financial services (CGAP and DFID 2008).

Agent. Any third party acting on behalf of a bank or other financial services provider (including an e-money issuer or distributor) in its dealings with customers. The term “agent” is commonly used even if a principal–agent relationship does not exist under the law of the country in question (CGAP 2011).

Bank-Led Model. A branchless banking model (whether bank-based or nonbank based) in which the bank is the primary driver of the product or service (typically taking the lead in marketing, branding, and managing the customer relationship) (CGAP 2011).

Branchless Banking. The delivery of financial services outside conventional bank branches, using agents or other third-party intermediaries as the principal interface with customers, and relying on technologies such as card-reading point-of-sale terminals and mobile phones to transmit the transaction details. Although the term “banking” is used, branchless banking/banking beyond branches is not limited to bank services; it includes a broad array of financial services often provided by nonbanks (CGAP 2011).

Cash In/Cash Out. Cash in, in the context of e-money, meaning the exchange of cash for electronic value. Cash out, in the context of e-money, meaning the exchange of electronic value for cash (CGAP 2011).

Cash Merchant. A subcategory of agent that conducts only cash-in/cash-out services. Since cash merchants do not engage in account opening or customer enrollment, they are more easily shared among different financial service providers (CGAP 2011).

Digital Payments. Digital payment systems include mobile money, direct electronic account deposits, and online money transfer as means to complete transactions. They tend to have lower costs than paper-based and manual systems, and they also offer greater potential for generating adjacent revenues not tied to user balances (e.g., through capturing data that can then be sold). However, even digital payment systems must include nondigital activities, such as cash deposits and withdrawals. Making digital payment systems more accessible, more robust, and higher volume help to broaden financial inclusion (McKinsey 2013). Digital financial inclusion is the concept of increasing access to digital payment tools and products by the unbanked and underbanked.

Electronic Funds Transfer (EFT) or Electronic Payment. Transfers initiated through a device such as an electronic terminal, mobile phone, computer, or magnetic tape for the purpose of ordering, instructing,

or authorizing a financial institution to debit or credit a consumer's bank or e-money account (see U.S. Regulation E [Electronic Fund Transfers]).

E-Money Issuer. The entity that initially issues e-money against receipt of funds. Some countries permit only banks to issue e-money (see bank-based model); whereas other countries also permit nonbanks to issue e-money (see nonbank based model) (CGAP 2011).

E-Money. A type of monetary value electronically stored and generally understood to have the following attributes: (i) issued upon receipt of funds in an amount no lesser in value than the value of the e-money issued, (ii) stored on an electronic device (e.g., a chip, a prepaid card, a mobile phone, or a computer system), (iii) accepted as a means of payment by parties other than the issuer, and (iv) convertible into cash (CGAP 2011).

E-Wallet. An encrypted storage medium that holds credit card and other financial information that can be used to complete electronic transactions without re-entering the stored data at the time of the transaction. E-wallets can be server- or client-device based.²⁴

Interoperability. A situation in which payment instruments belonging to a given scheme may be used in other systems installed by other schemes. Interoperability requires technical compatibility between systems, but can take effect only where commercial interconnectivity agreements have been concluded between the schemes concerned (CGAP 2012).

Know Your Customer (KYC). Refers to a set of due diligence measures undertaken by a financial institution, including policies and procedures, to identify a customer and the motivations behind his or her financial activity. It is a key component of anti-money laundering and combating the financing of terrorism regimes (Chatain et al. 2011). Financial Action Task Force's Recommendation 5 requires identification of the customer and verification of identification; because identification is not always available to such customers, this can be a hindrance to financial inclusion.

Mobile Banking/Mobile Financial Services. This refers to the use of a mobile phone to access financial services and execute financial transactions. This covers both transactional and nontransactional services, such as viewing financial information on a customer's mobile phone (Chatain et al. 2011). The term "mobile banking" is often used synonymously with "mobile financial services" although "mobile banking" is used by some to refer only to customers with bank accounts. Mobile banking or mobile financial services is a subcomponent of electronic banking that includes a broader array of electronic banking instruments and channels, such as internet, point-of-sale terminals, and automated teller machines.

Mobile Money. A type of electronic money that can be transferred electronically by a mobile network operator. The issuer of mobile money may (depending on local law and the business model) be a mobile network operator or a third party, such as a bank (CGAP 2011).

²⁴ Financial Times IT Glossary, accessed 14 December. <http://www.ft.com/intl/cms/s/0/a921280c-0dc5-11dc-8219-000b5df10621.html#axzz2nQJyjO7z>.

Mobile Network Operator/Telecommunications Company. A company that has a government-issued license to provide mobile phone services. Due to their experience in high-volume, low-value transactions and their experience with large networks of airtime distributors, mobile network operators/telecommunication companies have been critical players in branchless banking and the issuance of electronic money (CGAP 2011).

Mobile Payment. An electronic payment effected through a mobile phone (CGAP 2011).

Payment Service Provider. An entity providing services enabling the placement of funds into an account, the withdrawal of funds from an account, executions of payment transactions (i.e., transfer of funds between, or into, or from accounts), issuance and/or acquisition of payment instruments (i.e., an instrument enabling the holder/user to transfer funds, including checks, e- money, credit cards, and debit cards), money remittances, and other services central to the transfer of money (CGAP 2011).

Third-Party Provider. Agents and others who act on behalf of a mobile financial services provider, whether pursuant to a services agreement, joint venture agreement, or other contractual arrangement. Regardless of the legal characteristic of the third-party provider (i.e., agent or not), mobile financial services providers should be liable for the actions of third parties acting on their behalf (CGAP 2011).

Annex 2. CGAP Agent and Client Profiles from August 2013 Field Research

CGAP has engaged in exchanging knowledge on financial inclusion with China for several years. In 2012, CGAP published a report on financial inclusion in China. In early 2013, CGAP decided to better understand and document the emerging branchless banking in China given the recent launch of banking agents by PBOC. There are an estimated 500,000 pilot banking agents in China. In March 2013, a CGAP team conducted initial desk research and field study, which culminated with a workshop on branchless banking organized with IFC and PBOC. To complement the information collected in March, a CGAP team visited pilot agents in Yunnan and Chongqing in August 2013.

The CGAP team conducted interviews with 12 banking agents and 12 of their clients in Yunnan Province and Chongqing District to understand government pilot efforts. The mission was organized in collaboration with IFC and with great support from CUP in Yunnan and PSBC in Chongqing. This short report summarizes the interviews. It provides interesting information, but the information is anecdotal and, therefore, cannot be extrapolated. The following Table 4 presents key indicators and findings from the twelve agent interviews, followed by four illustrative agent profiles.

Table 4: Detailed Agent Findings in Yunnan and Chongqing

KEY AGENT INDICATORS (sample of 12)	% or #
Percentage of rural agents	58%
Percentage of female agents	67%
Average years of education	10
Average number of years banked	15
Average number of bank accounts	4
Average number of years in business	12
Average daily (non-agent) business	¥ 1,800.00
Average number of phones used by agents	2
Percent of smart phones used by agents	92%
Percent of agents making online purchases	75%
Average number of months working as agent	17
Average percentage increase in foot traffic as agent	26%
Average number of transactions per day	4
Average daily fees from agent transactions	¥ 13.80
avg agent fee/day USD	¥ 2.28
Average monthly income from agent business	¥ 354.17
Average number of hours in training as agent	5.15
Percent of agents citing issues with system downtime	75%
Percent of agents citing demand for deposit services	75%
Percent of agents citing demand for account opening	50%

The first set of field interviews took place in Yunnan. Yunnan Province is located in the far southwestern part of the country. It has a population of 45.7 million, of which 1.3 million are unbanked. Situated in a mountainous area, it is considered one of the poorest areas in China. In Chenggong District, 45 percent of the population is rural. With most families having a bank account, rural populations still tend to use passbooks and resist moving to bank cards.

Agent Profile 1: Chenggong District—Yunnan, Li Yunzhen—RCC Agent

- Li Yunzhen is the owner of one shop and a small side business selling flowers
- As an agent for RCC she can provide cash out, transfer, and payment services to her clients
- She has been an RCC client for 24 years and has five bank accounts
- Main banking customers are migrant workers and farmers
- She sells air time for China Mobile
- She is open every day from 07:00 to 22:00
- Her main problem is having to make frequent trips to RCC for liquidity and having to wait in queue

Key Results for this Agent's Business:

- ✓ 50 percent increase in foot traffic
- ✓ 15 transactions per day
- ✓ Earns \$3.75/day in fees

Agent Profile 2: Chenggong District—Agent in semi-rural area, New Economic District of Kunming.
Chenggong District—Yunnan, He Shaolong—Agent for RCC

The second agent we visited in Yunnan's Chenggong District was in a semi-rural area near the capital where a new university has been constructed. The agent is located close to a small outdoor market in a community of approximately 3,000 people, with no bank branch or ATM in the immediate area.

- He Shaolong owns a grocery shop
- He has been an RCC client for 15 years and has four bank accounts at four banks
- He provides cash-out services (e.g., farmers benefits), payments, and transfer services
- Main banking customers are migrant workers, university students, and farmers
- He sells air time for China Mobile using a laptop
- He is open every day from 7:00 to 22:00
- He sees client demand for account opening, deposits, and higher maximum withdrawal limits
- He would like more marketing support from RCC

Key Results for this Agent Business:

- ✓ 20 percent increase in foot traffic
- ✓ 15 transactions per day
- ✓ Earns \$3.75/day in fees

Based on Broader Province-level data and interviews, the team found the following:

- Yunnan has interoperable agents across a number of banks and RCCs supported by CUP
- Yunnan agents were top performers with 15 transactions per day
- On average, 11,720 Yunnan agents have 1.46 transactions per day, with high agent dormancy

- Clear and standardized fees
- High frequency of bank visits
- High degrees of client interest in deposits
- Increasing foot traffic and convenience for clients are major drivers for agent participation

In Yunnan Province, additional client surveys were conducted as a follow up in October 2013 to gain further insights into the profile of people using China’s new agents as banking outlets. Key findings from this additional field work include the following:

- All were RCC clients
- Each household had 2–6 bank accounts
- All opened bank accounts to make basic payments, while 70 percent used their bank accounts to save
- 40 percent interviewed were women
- 40 percent interviewed were rural
- 80 percent owned their own home
- Clients came from various professions and sectors, including self-employed, factory and farm workers, and private-sector employees
- The average monthly family income was RMB 2,900 or US\$422, including one young woman living on US\$193 per month
- 100 percent of those interviewed had a smart phone
- 50 percent make online purchases, mainly on mobile
- 60 percent save in cash; 30 percent had savings goals related to their children
- Bank branches were only 5.8 km away from their home, while agents were 2.5 km away
- 90 percent gave top marks for agent satisfaction
- 90 percent use agents mainly for withdrawal; a few also use agents to pay bills and make bank transfers
- There is a correlation between frequent use of online payments and frequent use of agents
- Most use agents less than once a month
- There is high literacy around use of personal identification numbers and security
- 60 percent of the respondents would like to be able to make deposits at agents
- 30 percent would like to have account opening feature at agents

The poorest respondent was a young woman working as a waitress and teller at a restaurant that is also an agent. She earns less than \$200 per month and lives with her parents. She doesn’t make online or mobile payments but has a smart phone. Her household (parents and younger sister) has three bank accounts in total. She aspires to open her own clothing business someday. She is paid in cash, so never uses an ATM or any other bank functionality on her account. She opened her bank account to make basic payments and uses the agent only to pay bills—not for cash withdrawal. She indicated she would also use the agent to make deposits, if that facility were available.

Over the course of research in Yunnan, provincial officials shared higher level information about the pilot and overall agent transactional experience, including the following:

- ✓ 11,800 agents in Yunnan were transacting from June 2010 to June 2013
- ✓ Over that period, 4.5 million transactions were made, with a value of \$278 million
- ✓ Data show a growth in monthly average transactions, from 1.4 per month per agent in 2010 to 10.6 monthly transactions in June 2013
- ✓ Still, transaction levels are low compared with international norms
- ✓ Based on interviews, up to 60 percent of agents do not transact
- ✓ While early transactions concentrated on cash out, overall transactions now reflect a more balanced mix of banking needs including bill payments and transfers. While cash out remains the highest transaction in terms of number and volume, it is followed by payments in terms of numbers of transactions and transfers in terms of volume of transactions.

From Yunnan, the research team moved to work in Chongqing Municipality, reviewing agents for PSBC. Chongqing is a major municipality in Southwest China situated on the Yangtze River and one of the China's four direct-controlled municipalities, with 19 districts, 15 counties, and four autonomous counties, with 32 million people, half rural and half urban. Chongqing is one of 13 emerging megacities in China. Twenty percent of its population is unbanked.

CGAP visited PSBC's farmer-focused agent banking pilot, which operates exclusively for PSBC clients. PSBC banks nearly half the population of Chongqing, with 16 million cardholders. Half of its branches are in rural areas. PSBC partners with the post office to drive agent formation through post office franchise businesses distributing subsidized agricultural inputs for farmers. Two hundred out of 2,000 agri-franchises are providing agent services.

Agent Profile 3: Chongqing, Ma Luosong, PSBC Agent in Jielong Town

- Ma Luosong is the owner of an agribusiness franchise in Jielong
- He is also paid as an agent trainer by the post office
- He has been a PSBC client for 13 years and has three bank accounts
- Main banking customers are farmers
- He provides cash-out services (e.g., farmers subsidies), payments, and transfers
- His business sells only a limited range of special inputs and goods for farmers on preorder
- His shop is open only 2–3 days per week, from 08:00 to 17:30
- Main problem is that his shop is next door to an expanded PSBC branch, so clients prefer to go there

Key Results for this Agent Business:

- ✓ 10 percent increase in foot traffic
- ✓ Four transactions per day (open only 2–3 days)
- ✓ Earns \$0.27/day in fees + fixed salary

Agent Profile 4: Chongqing—Zhu Shenghai—PSBC Village Agent

The fourth agent visited in the rural areas of Chongqing was in a small farming village called Xinwan, with a population of approximately 3,000 in the immediate surroundings and no bank branch. Zhu Shenghai is the owner of an agribusiness franchise from the post office in Xinwan Village—a 45-minute drive from district town. As a leading local figure, he has an adjacent café and a successful small construction business; he also rents out farming equipment in the local area. Key notes from this interview are as follows:

- Zhu Shenghai owns a café, as well as construction and agricultural equipment rental businesses
- He has been a PSBC client for 15 years and has 12 bank accounts and credit cards
- He provides clients cash-out payment of subsidies, transfers, and payment services
- His main banking customers are farmers
- His shop is open every day, 12 hours per day
- He notes client need for cash in and also increasing daily withdrawal maximum
- He is clearly not earning any revenue from agent business, but it is a key service in town

Key Results for this Agent Business:

- ✓ 100 percent increase in foot traffic
- ✓ 20 transactions per day
- ✓ Earns \$1.33/day in fees, but receives fixed salary from PSBC of \$100/month

Based on overall Chongqing interviews, PSBC and the Postal Bank have jointly built a highly subsidized model that pays agents a flat salary, with extremely low fees and the following characteristics:

- The service is free for clients, although agents are given discretion to charge “strangers”
- The model also provides services only for PSBC clients, although CUP POS devices can service all cards
- Transactions clearly grow in more rural areas away from bank branches
- PSBC notes the difficulty of finding literate agents, but aims to cover all villages within the next years—growing from 200 to 2,000 agents

Annex 3. Regulation Affecting Digital Financial Inclusion

The following list includes select laws and regulations available in Chinese language (and sometimes in English); urls are included where they are available.

Banking and Microfinance

- PBOC Act of People's Republic of China, revised 27 December 2003 (http://www.pbc.gov.cn/publish/english/964/1952/19528/19528_.html)
- Law of Banking Supervisory and Regulation of People's Republic of China, revised 31 October 2006
- Law of Commercial Banks of People's Republic of China, revised 27 December 2003
- Procedure Governing Rural Household Loans (Draft) (2012)
- Farmer Loan Regulation (enacted in 2012) (Chinese)
- Guideline on Rural Credit Cooperative Rural Household Solidarity Lending (enacted in 2000) (Chinese)
- Guideline on Rural Credit Cooperatives Rural Household Microfinance (enacted in 2001) (Chinese)
- Provisional Rules Governing Rural Household Microfinance with Rural Credit Cooperatives (enacted in 1999) (Chinese)
- Provisional Rules Governing Village or Township Banks (enacted in 2007) (English)
- Guideline on Microfinance Companies Pilot (enacted in 2008) (Chinese)
- Provisional Rules on Microfinance Companies Reforming and Establishing Village or Township Banks (enacted in 2009) (Chinese)
- Provisional Rules Governing Rural Fund Cooperatives (enacted in 2007) (Chinese)

Consumer protection

- Law of Protection of the Rights and Interests of the Consumers (enacted in 1993) (English)
- PBOC Provisional Rules on Management of Individual Credit Information Database (http://www.PBOC.gov.cn/publish/english/964/1957/19576/19576_.html)

AML/CFT

- Law of AML of People's Republic of China, effective since 1 January 2007 (http://www.npc.gov.cn/englishnpc/Law/2008-01/02/content_1388022.htm)
- PBOC Rule on AML for Financial Institutions, effective since 1 January 2007 (http://www.pbc.gov.cn/publish/english/964/1957/19578/19578_.html)
- PBOC Rules on Reporting of Large Transactions and Suspicious Transactions for Financial Institutions. Effective 1 March 2007 (http://www.pbc.gov.cn/publish/english/964/1955/19551/19551_.html)
- PBOC Provisions on AML/CFT for Payment Institutions, effective 5 March 2012

Branchless Banking

- PBOC Instruction on Improving Cash Withdrawal Service in Rural Area, issued on 11 July 2011. Approved banks are allowed to use agents in rural area for cash out service with deployed POS and special telephones.
- Guidance on the Pilot Program of Mobile Money Service in Rural Areas by the People's Bank of China

Laws/Regulations on Payment system

- PBOC Guideline on Electronic Payment (No.1), effective 26 October 2005 (being revised)
- PBOC Regulation on Payment Services for Non-Financial Institutions, effective 1 September 2010 (http://www.pbc.gov.cn/publish/english/955/2010/20100804095715059176127/20100804095715059176127_.html)
- Rules on Implementation PBOC Regulation on Payment Services for Non-Financial Institutions, effective 1 December 2010 (<http://www.dwtimages.com/Detailed%20Implementing%20Rules%20for%20the%20Measures%20for%20the%20Administration%20of%20Payment%20Services%20of%20Non-Financial%20Institutions.pdf>)
- PBOC Rules on Deposit and Management of Clients' Provision for Payment Institutions, effective 7 June 2013.
- PBOC Regulation on Internet Payment for Payment Institutions (Draft for comments, 1 December 2012)
- PBOC Regulation on Bank Card Acquiring Business, effective 5 July 2013 (http://www.pbc.gov.cn/publish/english/955/2013/20130717134724181842584/20130717134724181842584_.html)
- PBOC Regulation on Prepaid Card Business for Payment Institutions, effective 1 November 2012.
- PBOC instruction on improving Rural Payment Environment, issued July 2009

Electronic Banking

- Guideline on Security Assessment of Electronic Banking (enacted in 2006) (Chinese)
- Procedures Governing Electronic Banking (enacted in 2006) (Chinese)
- Procedures on Commercial Banks Branches Setup in Same Town (ATMs related) (enacted in 2002) (Chinese)
- Procedures Regulating Commercial Banks Credit Cards (enacted in 2011) (Chinese)
- Law of Electronic Signature of People's Republic of China, effective 1 April 2005 (http://www.npc.gov.cn/englishnpc/Law/2007-12/05/content_1381960.htm)
- CBRC Circular No. 15 (2006) regarding the engagement of financial institutions in international remittance business (Oak 2013)
- Measures for the administration of payment services of nonfinancial institutions (Oak 2013)
- CBRC Guideline for Internet Banking Security Risk Management (draft for comments, 4 November 2011)

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