FINTECH AND FINANCIAL INCLUSION IN GUANGDONG, CHINA:

RESOURCES, EMBEDDEDNESS, FRAUD AND ROUTINE

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Abstract

In recent years, the emergence of FinTech services and firms have reshaped the financial services and developed new processes and routines to provide a range of financial services, such as payment, banking, insurance and deposits, by applying information communication technologies to banking. FinTech denotes the development of innovative financial services or products that are delivered via information communication technologies (ICT) and technological/computerised platforms. FinTech reflects alterations in the ways in which consumers of financial services engage with providers based on the emergence of new business models providing new forms of financial services. The emergence of FinTech has important implications for regulation and risk management both for FinTech providers, and also wider regulatory frameworks across China.Particularly in Guangdong province, China, FinTech firms have become an alternative funding source to the mainstream financial service providers. Small and medium-sized enterprises (SMEs) in China were experiencing difficulties in access external finance and this encouraged FinTech finance platforms to be developed in Guangdong. Guangdong has become an important region for innovations in FinTech along with California and London. In order to understand the reasons, mechanisms processes and evolution of FinTech firms in Guangdong, this thesis developed a conceptual framework based on the analyses of 98 interview. This thesis aims to explore access and use of external sources of loan finance by SMEs with a focus on understanding alternative forms of debt and loan finance provision by FinTech lenders using new business models and related routines. The focus on debt and loan finance is designed to generate understanding of the exclusion of many Chinese SMEs from mainstream finance but inclusion into FinTech platforms. This thesis will identify and analyse the different business routines, processes, products and embeddedness that have been developed by FinTech firms in Guangdong. This thesis also aims to understand access and business routines of the development of non-bank forms of lending (FinTech) will play an important role in preventing fraud and contributing to more sustained and inclusive economic growth in China and other emerging economies.

FOR MY PARENTS

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Abbreviations

ASEAN	Association of South East Asian Nations
API	Application Programme Interface
CBRC	China Banking Regulatory Commission
CCP	Chinese Communist Party
CCPIT	China Council for the Promotion of International Trade
CDFI	Community Development Financial Institutions
CEPA	Mainland and Hong Kong Closer Economic Partnership Arrangement
CIPS	China's Cross-border Inter-bank Payment System
CIRC	China Insurance Regulatory Commission
CNAPS	China National Advanced Payment System
COE	Collective Owned Enterprise
CSRC	China Security Regulatory Commission
ETF	Exchange-Traded Funds
FAO	Finance Affairs Office
GC	Guarantee Company
HNWIs	High Net worth Individuals
IPO	Initial Public Offering
ITC	Information and technology communication
MIS	Management Information System
MLC	Micro-Lending Company
NDRC	National Development and Reform Commission

NRP	National People's Congress
NPL	Non-Performing Loans
P2P	Peer-to-Peer Lenders
PBOC	People's Bank of China
PFS	Private Finance Street
PRD	Pearl River Delta
RMB	Renminbi
SEO	Searching Engine Optimization
SEZ	Special Economic Zones
SME	Small and Medium Enterprises
SOE	State Owned Enterprises
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TMT	Technology, Media and Telecommunication
TPS	Transaction Processing System
TVE	Township and Village Enterprise
YLCCP	Youth League of Chinese Communist Party

CHAPTER 1
FINANCIAL TECHNOLOGY AND INCLUSION IN CHINA

> *I believe the most remarkable achievement for a banker is to make customers' dreams come true. If I can describe a banker as the crown at the top of a financial career pyramid, I wish to invite every banker, with the equipment of information technology, to join the debate about what is inclusive finance and an inclusive society and to maximize your contribution and to fulfil other peoples' dreams (Madam Xiaoling Wu, ex-Deputy Governor of People's Bank of China, Deputy Leader of Financial and Economic Affairs Committee of National People's Congress, 25th August, 2016, Beijing).*

The long-term future sustainability and resilience of the Chinese economy is, in part, based on the availability of appropriate sources of external loan finance, which can be easily accessed by Small and Medium Enterprises (SMEs) (Mullineux and Murinde, 2014). The Chinese economy has achieved high economic growth rates in the absence of a developed financial system. This high growth has been driven by state-owned enterprises (SOEs), foreign direct investment (FDI) and Chinese SMEs. Yet, SMEs account for 60% of gross domestic product (GDP) and 75% of new growth (Reuters, 2015), suggesting that continued economic growth and job creation is dependent on the development of indigenous SMEs providing local jobs for local people (Mullineux & Terberger, 2006). The recent emphasis placed by the Chinese government on services has increased the role SMEs will play in China's continued economic prosperity as most service firms are small firms (Bryson & Daniels, 2015).

This thesis explores the emergence of FinTech firms in response to the weakness of Chinese inclusive financial system and their role as additional loan finance

provision to people and the SMEs which were financially excluded. It primarily focuses on how the FinTech firms cooperate and compete with the conventional financial institutions at the regional level and how they utilise localised and tacit information to process a loan and prevent fraud risks. Guangdong as a province in China has been selected as a region due to its geographical and industrial significances.

Guangdong is selected as its unique position in the map of FinTech sector worldwide. It is one of the 31 province in China at the south which is proximate to Hong Kong. Guangdong is not only the most popular FinTech community in globe but also the world's largest megacity. Guangdong has benefited from the development of SMEs and its affiliation to Hong Kong, owned the most employees in small firm, number of producer service firms and financial employees nationwide. In particular, one of the city in Guangdong, Shenzhen, has overtaken Silicon Valley and become one of the largest FinTech investment hubs globally (FT, 2016).

In this chapter, brief but fundamental background of knowledge on FinTech and China will be provided to highlight the significance of this research. The research objectives and theoretical framework will be outlined afterwards. A basic portrait of Guangdong, will be also offered as an introduction to this place.

1.1 Background

By 1950, all independent financial institutions had been nationalised under the People's Bank of China (PBC) (Shim & Shin, 2016); the PBC has functioned as a central bank since 1983. In 1995, the Chinese government commercialised the

operations of the four state-owned banks: the Bank of China, the China Construction Bank, the Agricultural Bank of China, and the Industrial and Commercial Bank of China. China's financial system remains under government control with the primary organisations being the central bank, the Big Four, second-tier commercial banks and city commercial banks. The accession by China to the World Trade Organisation (WTO) in 2001 led to some initial public offerings (IPOs) of commercial banks, SOEs and foreign funded financial institutions. Today, however, China's banking industry remains predominantly under government control.

There is an important tension within China's financial system. On the one hand, the Chinese government does not want to undermine the revenue earning potential of the state-owned banks. On the other hand, the government wants to promote innovation fostering the development of wider framework conditions that encourage sustainable economic growth. China's state-controlled financial industry has been criticized by economists for being too focussed on providing financial services to large SOEs and neglecting small and medium-sized enterprises (SMEs) (Sparreboom and Duflos, 2012; Shim & Shin, 2016).

Innovations across China's mainstream banking institutions are been driven by the introduction of disruptive technology by retailers and other alternative financial providers leading to the development of new forms of financial product. This trend also applies to the state-owned banks which have had to develop new products and services based on the application of innovative technologies. The interaction between financial services and information technology has led to the emergence of FinTech. FinTech denotes the development of innovative financial services or

products that are delivered via information communication technologies (ICT) and technological/computerised platforms. FinTech reflects alterations in the ways in which consumers of financial services engage with providers based on the emergence of new business models providing new forms of financial services to SMEs. Many FinTech companies are new to the financial service industry and there have been major disruptions in the provision of financial services. One such disruption has been the introduction of P2P/B lending using FinTech based lending platforms that link investors directly or indirectly with potential borrowers. This new type of lending is providing an alternative to loans provided by mainstream lenders, and because traditional banking has underserved the SME market, many P2P/B platforms target SMEs by offering loans below 500,000RMB. In China, P2P/B lending via a FinTech lending platform provides an additional source of external local finance to SMEs contributing to financial inclusion and potentially supporting indigenous local economic growth.

FinTech is at an early stage in its global development. There has been a boom in FinTech start-ups in California, London and Guangdong. In 2014, investment in FinTech companies grew by 201% globally compared with an increase of 63% in venture capital funding (Accenture, 2015). By 2016, there were 2,595 P2P platforms across China with 1,020 established in 2015. Lending transactions via Chinese P2P platforms reached 982.3 billion yuan (about 151 billion U.S. dollars) in 2015; a 288.6% increase from 2014 (252.8 billion yuan) (Mu, 2016). Developments in FinTech began to emerge in China only in the last decade and in Guangdong the number of P2P lenders has grown dramatically since 2009. The growth in FinTech suggests that China is experiencing ‘last mover’ advantage

as innovative FinTech firms are developed. Financial regulations have not kept pace with developments in Chinese FinTech. Rapid developments in P2P/B lending have occurred as new firms and financial products have been introduced that exploit gaps in existing legal and regulatory systems. In July 2015, the Chinese government released a new policy framework that is intended to try to balance innovation, growth with financial stability and resilience. Currently, FinTech is predominantly regulated at the provincial level. Financial regulators are beginning to develop frameworks to regulate Chinese FinTech. In March 2016, the PBC noted that regulators will act against P2P firms that are providing loans to purchase housing as this type of shadow banking was distorting property markets (Weinland & Yang, 2016).

The emergence of FinTech is another stage in the application of technology to financial services. The shift towards credit scoring based on ICT, databases and software by the mainstream banks led to the centralisation of the lending process (Degryse and Onegena, 2005); local knowledge and relationship banking based on an ability to assess and read character was replaced with an 'objective' assessment. In the credit scoring process, the conventional mainstream banks' risks are mitigated by the existence of a long-term banking relationship between the bank and a potential borrower. Difficulties related to asymmetric information on the part of the bank are partly mitigated by taking in to consideration the potential borrower's banking history (Dell'Ariccia, 2001; Miyajima et al., 2002; Molina et al., 2007). The difficulty faced by FinTech providers is in assessing the viability of loan applications in the absence of direct knowledge of potential customers. This difficulty in the assessment of viability and risk leads to increases

in fraudulent client behaviours. However, the continued development of more robust practices and processes by FinTech firms would go some way towards enhancing lending effectiveness and supporting the growth of SMEs.

There is an urgent need for research to support the on-going development of FinTech in China and in other emerging economies. This research needs to support the continued development of risk mitigated FinTech firms, but also inform developments in regulatory frameworks. FinTech represents both an important opportunity and a critical challenge for China. It is an opportunity, because it can contribute to financial inclusion providing SMEs with an alternative form of access to finance (Bryson & Buttle, 2005). The size of the Chinese market means that the number of financial institutions and types of products available does not meet actual or potential demand. This constrains economic growth and especially non-state firms, SMEs and sectors that do not have access to mainstream financial services. The development of non-bank financial institutions that provide FinTech enabled products provides an important mechanism to support continued economic growth and the development of a more market-based financial system. On the other hand, the challenges relate to the creation of new FinTech operational routines and robust processes, leading to sustainable and resilient alternative non-bank based providers of financial services. FinTech companies, operating with low margins, limited capital investment, scalable models, can experience continuous innovation. For example, a branch network is not a requirement, as the services can be accessed via ICT. The non-bank nature of much FinTech means that relational banking, founded on an established relationship between lender and borrower, is replaced by a lender-borrower relationship mediated by ICT. One of

the unintended consequences is that this relationship structure gives opportunities for fraudulent behaviour to occur, as potential borrowers try to game FinTech systems to their advantage. There have been examples of FinTech P2P/B investment platforms being established on-line that have been created to misappropriate investors' funds (Ge & Ma, 2016; Than & Zhang, 2015).

1.2 Research Aims and Objectives

The recent shift in focus towards financial technology in China has not been fully explored yet by economic geographers and social scientists. New types of actors have emerged which substitute conventional mainstream banking institutions to provide access to finance at a local level. The limited existing research has led to the research question that is explored in this thesisFinTech, which is to understand the emergence of FinTech in China by exploring the emergence of FinTech firms and platforms and the role they are playing in providing access to additional sources of loan finance.

There are four objectives:

Objective 1: To understand the evolution and digitalization of the financial system across China and to explore specific province and cities that have being experienced financial services provided by FinTech firms and platforms;

Objective 2: To identify the characteristics of the actors involved in the FinTech sector in China in selected area(s) concerning their location, reason for joining this business and access to funding sources in the market;

Objective 3: To explore the diversity of financial service provision in a province and the competition or cooperation relationship between actors and existing regulated financial actors, including both national and regional actors.

Objective 4: To identify and explore FinTech operational procedures and process..

In order to fully address these aims and objectives, This thesis builds upon the literature on asymmetric knowledge and resource based views of the firm (Loasby, 1999; Penrose, 2002; Garnsey, Stam and Heffernan, 2006), but combines this with on-going debates in organisational strategy (Teece, Pisano and Shuen, 1997; Foss, 1997; Langlois and Robertson, 2002 Klein *et al.,* 2010; Stam and Lambooy, 2012) and evolutionary economic geography (Boschma and Frenken, 2006; Nelson and Winter, 2009; Boschma and Martin, 2011; Bryson and Ronayne. 2014). Those theories are pre-requisite to understanding the FinTech actors as well as their evolution along with the market and customers.

This research will explore the emergence of new FinTech start-ups and identify the ways in which the relationship between FinTech firms, local ecosystems (including government, local family business networks and financial institutions) and customers is being mediated by resources of firms and the development of appropriate routines by lending platforms. These routine include processes and practices that are embedded in the local network intended to enhance loan repayment and reduce loan default rates (Derban et al., 2005) amongst more marginal borrowers (Bryson & Buttle, 2005). In addition, the operational routines of FinTech firms evolve with customers' adaptation of old routines to prevent fraud.

Employing these theories could address the research aims and objectives consistently and accordingly with the development of narratives through different chapters. From tackling property rights issues from the national level to the power asymmetry at the regional authorities, theories flow and connects with each through the framework and thesis structure. The following section will illustrate further on each theories and their implementation in the thesis in more detail.

1.3 Theoretical Discussion

Much of the literature on alternative providers of loan finance focuses on finance provided by social enterprises rather than private sector providers (Bryson & Buttle, 2005 Derban et al., 2005). Much of this literature focuses on asymmetric knowledge in the lending process (Dell'Ariccia, 2001). Much of the research on access to alternative sources of finance focuses on developed rather than less developed countries (Fungacova and Weill, 2014; NESTA, 2016a; 2016b).

The business strategy literature includes a developing debate on resource and firms (Porter, 1980; Foss, 1997; Penrose, 2002; Garnsey, Stam and Heffernan, 2006). The development of FinTech in Guangdong requires access to finance and funding and the resources to survive and grow in an increasing competitive market. The resource-based view (RBV) argues that firms compete by utilising combinations of resources that may be difficult to copy or imitate (Loasby, 1999; Penrose, 2002; Garnsey, Stam and Heffernan, 2006). Resources are perceived as either tangible or intangible assets that are managed or owned by a firm (Mahoney and Pandian 1992; Wernerfelt 1984, 1995), whereas capabilities are the limits of organising some resources together (Makadok, 2001). In the RBV approach, the resources were also interpreted differently such as competencies

or capabilities (Teece, Pisano and Shuen, 1997; Langlois and Robertson, 2002). Those differences reflected on authors' preference in addressing different perspectives on resources, rather than radical changes of definition itself through timelines of theory evolution.

In addition, the resource based view perceived that firms consist of actors that are asymmetrically connected with each other. The heterogeneous perspective of firms evolved as a critical argument that firms should be regarded as heterogeneous entities because of their unique endowed resource base, rather than a black-box in strategic studies, and which was popular in economic studies (Nelson and Winter, 2009). Wernerfelt (1984), Barney (1991) and Rumelt (1982) echoed these views and argued that "anything virtual" could be regarded as firm resources. Their stance put forward classic resource based theories on the growth of firms (Penrose and Pitelis, 2002; Klein *et al.,* 2010).

This emphasis on firms builds upon the 'more general orientation in economic geography from territorial analysis of endowments or institutions to firm analysis of routines and competencies and their embeddedness in the local and global economy' (Frenkin and Boschma, 2007: 637). Evolutionary Economic Geography shifts the focus from the firm as a black box to one in which a firm consists of routines and capabilities that are established over time (Aldrich et al., 2008; Bryson & Ronayne, 2014). This is to shift the focus of research to understanding intra-firm and inter-firm processes, which provide us with insights in both competitive and cooperative environments. To Boschma and Frenken '. . . organizations compete on the basis of routines, and competition is driven by Schumpeterian innovation based on new products and technologies requiring new routines, rather than on

production costs alone as assumed in neoclassical models' (2006: 278). Routines are settled and repeated patterns of behaviour that may both enable and constrain. Evolutionary economic geography explicitly adopts a dynamic perspective that complements neoclassical and institutional forms of analysis (Boschma and Martin, 2010). Economic geography must begin to explore processes of firm-level change or adaption and the evolutionary approach 'provides a general theory of change while being applicable to specific processes in space and time' (Frenkin & Boschma, 2007: 635). Within EEG, the firms are increasingly regarded as social economic agents that act through bounded rationality (Stam, 2010; Klein *et al.,* 2010; Stam and Lambooy, 2012). Recent work increasingly incorporate firms with EEG as explained below:

> *[t]he firm as a legal entity still matters as contractual relationships are formed between firms and not between individual employees; they are negotiated and formed by social actors embedded in networks, but regulated and governed at the level of the firm rather than the individual (Rusten and Bryson, 2010: 250).*

Grewal and Sloteegraf (2007) further argued the hierarchy of resources is correlated to embeddedness in the EEG framework, particularly at the functional and basic level of firms. The embedded resources increased connectivity between lower-order routines and the higher-order process of the firms, which builds isolation mechanism again imitation (2007, 455). The greater degree of embeddedness leads to the higher probability of sustaining competitiveness or advantage. This view of a resource based view is highly relevant to the research aims and objectives. In order to understand the resources, embeddedness and routines of FinTech firms as well as their competitiveness, this thesis needs further

discussion on how the embedded resources interact with organizational routines and how embedded resources increase the competitiveness of firms.

Chinese-based studies of FinTech are in an equally embryonic stage the as western literature and such studies are dominated by research undertaken by neo-classical economists rather than economic geographers. Consolidated evidence was presented as a positivist approach rather than one of deduction. The unitary research paradigm only partially understands financial service to the SMEs as the unavoidable neglect of causalities. From the existing Chinese literature, there are two major research gaps identified. First, the majority of the literature discusses the accessibility of finance in rural area rather than in an urban context. In particular, recent research has focused on macro-economic data and financial indexes, rather than financial services in production network (Vogel, 1989; Li and Yu, 2004, Lin and Yan, 2006 ; Li, 2014; Chen, 2014). Second, the Chinese literature is also focused on exploring the informal delivery of financial services, rather than firm based services that are more formal and tangible (Lin, 2010). In sum, the existing Chinese literatures addressed the significance of financial exclusion to the firm and individuals in some areas on China, yet failed to distinct the gap between geographies and lack of analysis on the alternative source of funding to the unbankable customers.

One important argument underlying the development of FinTech in China is that some of the standard concepts taken from advanced market economics may not be applicable. For instance, mathematical assumptions in modern financial theories assume the existence of strong property rights, certification and

registration and arbitration of these are granted but these institutional structures need to be developed and applied to FinTech in China FinTech. De Soto (2000) points out that capitalism did not succeed in the developing countries and post-communist regions because of disrespect of private property and formal contract. Alternatively, the government over that regions requested official registration and regulatory interpretation instead of laws. Therefore, the wealth creation in those countries, as De Soto claimed, was based on rent seeking and exploitation by the government and its endorsed privileges. Individuals and SMEs who were not in the elite network suffered from the “dead capital” which was not recognised by the government.

The utilization of property and contract involved the application of local knowledge in several of economic activities at the regional level, which had significant discussion in the literature of economic sociologies and geographies. This thesis will apply the embeddedness theory to the study of Chinese FinTech firms to identify and understand the operation of their routines in a complex institutional context. One aspect of the research will focus on identifying the different types of embeddedness and in developing a comparison of these different embedded lending process at regional level of China. This project will be the first to combine the on-going debate on resource-based views and embeddedness with evolutionary approaches to understanding routines and everyday practices within firms. This is an ambitious and novel approach that provides great benefits for understanding firm behaviour but also for enhancing the effective provision and preventing fraud by FinTech firms to SMEs in Guangodng province of China.

1.4 Guangdong Province

Echoing with the geographical concerns of FinTech sector at the beginning, this thesis specifically explores the resources, embeddedness, routines and practices of individuals, firms and organizations involved in the provision of FinTech enabled financial services to the SMEs located in Guangdong province as one of the response to the overcoming financial inclusion and exclusion. This research aim provides a necessity to justify why Guangdong is selected and how significant it is over other regions and places in the world as well as China in understanding this topic. This section will give a brief introduction to Guangdong province and further discussion will be followed in the next chapters.

The region is located in the southeast of China and comprises 21 prefectures, 121 counties and 1,642 townships. Guangdong had a population of more than 477 million urban inhabitants in 2010 (World Bank, 2016). The Gross Domestic Production (GDP) was about 1 trillion $US in 2014, which took account of 10% of GDP in China and 38% in Great Britain (HSBC, 2016). This region has a long history of private and family businesses and trade with neighbouring provinces and countries (Vogel, 1989; Yeh, 2005). It is a hub of light manufacturing and electronic device assembly, as well as one of the global financial institution clusters (HSBC, 2016).

The Pearl River Delta Economic Zone (珠江三角洲经济区) (PRD) is the economic hub of Guangdong, and located at the south of the region. PRD consists of nine major cities and is adjacent to Hong Kong and Macau, which have become the world's largest megacity since 2016 (World Bank, 2016). The area has a population of 56 million, 79% of the province's GDP and 95.4% of trade volume

within Guangdong (HKTDC, 2013:12). Given the infrastructure and living facilities, PRD attracts wealthy consumers, high spenders and international investment in both manufacturing and service industries. Figure 1.2 below outlines the position of the Guangdong province in China.

The reason for this is that Guangdong is located at the very south of China and is geographically distant from the capital city, Beijing (Vogel, 1989). This geographical distance implies that reforms can be tested in Guangdong without exposing Beijing and adjacent places to political risks associated with failed or troubled policy interventions. Guangdong does not have a significant proportion of China's heavy industrial assets; pilots that negatively impacted on these assets need to be avoided, and they could potentially harm the national economy. Last but not the least, Guangdong is adjacent to Hong Kong, which provides access to foreign capital and technologies (Vogel, 1990). Since 1978, Guangdong has opened up to foreign relationships. The US recognition of the legitimacy of China led to a prediction that Hong Kong as well as Guangdong could regain their role as gateways between the international market and mainland China (Schiller, 2013). The rise of the Association of Southeast Asian Nations (ASEAN) in the 1970s and negotiation between China and UK increased the expectations of internationalization of Guangdong as Hong Kong was growing as a global hub for Asian business and financial services (HKTDC, 2013). Improvements in transport and telecommunication technology reduced travel times between Hong Kong and Guangdong (Schiller, 2013).



Figure 1.2 Location of Guangdong Province in China and its immigrations
Source: China Daily (2012)

1.5 Thesis Structure

This thesis is specifically concerned with the resources, embeddedness and routines of actors of financial inclusion of the Guangdong province, China. The research questions are explored in four chapters. As the research progressed, FinTech firms were identified as important providers of access to loan capital in Guangdong province. As a result, the empirical chapters focused on how FinTech firms, specifically Guangdong based peer-to-peer lenders, contributed to financial inclusion with firm based resources, embeddedness and routines.

Chapter Two outlines the methodology, which explores in detail how and why particular research techniques were selected to access the research questions. 98 Interviews with banks, FinTech firms' founders, managers, loan officers, investment officers their trade associations were undertaken.

Chapter Three explores the evolution of financial service provision to SMEs in China and identifies the significant role Guangdong is playing in the emergence of the Chinese FinTech industry. This chapter explores both how national and regional financial service providers engage with technology within the regulatory framework and how Guangdong attracts FinTech firms. This chapter provides the context for the empirical chapters five, six and seven.

The prevalence and emergence of FinTech firms, particularly on peer-to-peer lending platforms, is explored in *Chapter Four*. With rich evidence and observations collected using in-depth interviews, this chapter identifies that mainstream regulated financial players had their limitations in the delivery of financial services to small firms. On the contrary, FinTech firms proactively founded and engaged in local business and attempted to fill the finance gap that existed in the province. With different backgrounds and a sense of entrepreneurship, FinTech firms are embedded in the local business environment and have provided competitive services and products.

In *Chapter Five*, the embeddedness of FinTech firms' operations are explored. This chapter classifies FinTech firms into three types and discusses three types of embeddedness within these firms. Embeddedness theory argues that economic actors are not atomised in society, but in a network of people and organizations

that are connected together with each other (Polanyi, 1944; Granovette, 1973). As a result, each of the economic actors will consider the others in the network while making decisions (Liu, 2008). Embeddedness theory is increasingly important in studies of financial services as a means of explaining how social and geographical relationships reshape financial service provision (Granovetter 1985; Portes and Sensenbrenner 1993; Uzzi 1996, 1997; Agnes, 2000; Knorr and Preda, 2004). In this thesis, the embeddedness theory will be explored in the context of regional China in the FinTech sector.

In *Chapter Six* the routines accumulated and developed by FinTech firms to cope with risks related to fraud are examined. It explains how FinTech firms in Guangdong have created new routines to reduce asymmetric information. Fraud has been explained in many ways in the social science, from being expressed as “acquiring goods and/or money by dishonest means” (Levi and Smith, 2011) to more a more detailed clarification, where it is asserted to be, “a human venture that includes dishonesty, decisive aim, amount of longing, risk of detention, breach of reliance, validation, etc.” (Ramamoorti and Olsen 2007). One important shortfall in the present studies is the escalating complexity confronted in the financial market dealings from a speedy technical, financial technology and extending options of financial creations (Beck and Zhan, 2010; Friesz, 2015; Taplin, 2016). Even though most of the deliberations concerned fraud are committed by the financial organizations, there are not many studies that deal with fraud that is committed against the financial technology. In Chinese context, particularly, that research on fraud were neglected in financial services. This chapter shows the

critical relationship between FinTech firms and customers, whilst at the same time illustrating how routines evolve in a dynamic process.

Chapter Seven concludes the thesis by considering how FinTech firms have supported financial inclusion by encouraging private firms to join the public dominated space. This research highlights the importance of regional ecosystems in shaping FinTech firms, the new embeddedness of FinTech firms with local shareholders and the evolving process of FinTech firms. This research calls for the development of future regulations on the importance of regional autonomy as well as the mechanism of self-regulation within firms. Finally, this chapter provides a pathway for future research on investors, customers, technologies and regulators of the FinTech sector.

CHAPTER 2
METHODOLOGY

2.1 Introduction

This chapter explores the research design and the methods used to investigate the distribution, characteristics, relationships and competitiveness of local lenders in Guangdong Province. The research began in October 2012, with the empirical work undertaken between August 2013 and February 2014. The empirical work included a mix of qualitative interviews with loan officers, risk management officers and executive officers from various types of lending institutions, trade associations and industrial experts. One participatory observation was carried out in one bank branch, which specialized in SME finance in China.

In this Chapter, the identification, access and comparison of Chinese SME finance will be highlighted and reflected through sampling processes. Current data on access to finance set in regions of China will be examined. Primary data is desirable because of the lack of established secondary data sources, such as quantified datasets, specifically for this industry in general and in Guangdong Province. Qualitative research methods were used in the research design process in order to secure the evidence from the different layers of lenders, such as banks, non-deposit lending institutions and financial intermediates. Two cities were explored during the field work in Guangdong Province in consideration of penetration and cost management. Urban localities dominated this research as the large scale of provision of credit occurred in urban area (Park, Ren and Wang, 2004). Justification will be offered as regards why Guangdong was chosen to be

the field of study. Based on the research design, four main phases were set up to support the research aims and objectives strategically.

2.2 Research Design

Research Design normally explains what is planned to complete a consistent research project and to justify its validity with research questions (Creswell, 2013). In this thesis, the research design was developed to support the aims of objectives of the research. In order to complete this thesis consistently, the design should focus on a firm level of analysis, largely because current Chinese financial regulations prohibit individuals from lending in China. As individuals are not legally accepted in providing finance as a business, firm level research is more academically accessible and reliable in terms of data capturing and analysis. From the regulators' point of view, although local government has very little authority in regulating finance, most of the administrators only recognize specialized institutions as qualified lenders. It is clear that this thesis is going to endeavor to understand issues around the lenders and firm level observations, which is naturally and technically the most appropriate. Therefore, the focus of this thesis is on firm level lenders rather than on individual borrowers, global players, flow of capital and others. In this part, the validity of the research methods selection will be justified and location will be explained in sequence.

2.3 Research Journey

The research journey can be divided into four parts. First, desk research was conducted to explore the Chinese loan finance industry and to identify the structure of the industry. At the beginning, desk research was conducted in both UK and China before interviews were undertaken. Appropriate research methods had been sought from training and supervision at Birmingham University, and the strategy of data sampling was then completed. In order to comprehend the overview of SME finance in China, understanding the existence of the Chinese financial ecosystem has been essential. All layers of financial institutions were expected to be studied through securing the key players in the aggregate populated area. Those areas should be also compared and contrasted in order to complete the research within a reasonable time period in PhD studies.

In this section, desk research will be introduced as the first step of doing research with the justification for the data sample and selection of Guangdong for fieldwork. Descriptions on the data collection and analysis process will then be introduced to outline the primary findings of this research.

2.3.1 Desk Research

This phase occurred from June to August 2013. The identification of key financial players within Guangdong was the main objective undertaken during this period. From the desk research, a large amount of literature on debt finance and small firms was reviewed and pilot interviews were used to identify the key players from each layer of lending from delegates of the China Association of Microfinance (CAM). The literature review includes research in both English and Chinese from

academic journals, company reports, trade association leaflets and reputable media sources. The source of information was built up using the supervisor's suggestions, experts' recommendations, conference publications and institutional databases. In particular, local media sources were consulted as these provided information regarding existing lenders. A summary of information sources is illustrated in the table below.

Table 2.1 Desk Research Information Source

Type of Organization	Chinese Name	English Translation	Source
Trade Associations	广东小贷协会	Guangdong MLC Association	Website
	广州／深圳小贷协会	Guangzhou/Shenzhen MLC Association	Website & Publication
	中国小贷联盟	China Association of Microfinance	Website & Report
	中国小贷公司联盟	China Micro-lending companies Association	Website & Report
	网贷之家	P2P Home	Website
Media	零壹财经	01caijing.com	News & Research
	深港资讯	Shen-Kong News	News
	金改实验室	Financial Innovation Lab	Blog Post
	小贷观察	Microcredit Review	Blog Post
Company	深圳邦信小贷	Shenzhen Bangxin Micro-lending Company	Newsletter
.	前海金融学院	Qianhai School of Finance	Newsletter

The definition of an SME in China is different to the industry category and based on the number of employees, annual revenue and total assets, and this criterion on small firms' changes according to the authorities. The most commonly accepted benchmark is China's Regulations on the Standards for Classification of SMEs, which set the guideline on June 18, 2011 for classifying SMEs. The Regulations

divide SMEs into three categories: medium, small and mini. The specific standards for different industries are as follows:

Table 2.2 SME definition in China

Criteria	Chinese MIIT 2011		The World Bank Group
	Small	Medium	
Number of Employees	<300	300-1000	<300
Total Assets	NA	NA	< RMB 100 million
Total Annual Sales Revenue	< RMB 20 million	RMB 20-400 million	< RMB 100 million

Source: IFC, 2012

Apart from the literature review, pilot interviews were conducted in the UK with interviewees from Beijing, Tianjin, Hebei and Yunnan by taking advantage of the visit from CAM. Invited as the coordinator of that delegation, the researcher had been accompanied by 16 delegates representing 12 lending institutions from 10 Chinese provinces. A table below lists the delegates and those who were interviewed in the pilot. 8 delegates out of 16 accepted the interviews during their visit to London, while the others were not able to be done within the panned time limit. The result of the pilot interview was not used in the research, but was examined according to the accuracy and reactions from interviewees, which was referred to in its modification and improvement. Furthermore, interviewees in the pilot referred to other participants that were practicing micro-lending in Guangdong Province.

Table 2.3 Pilot Interview Participants List

Full Name of Participant's Company	Participant's Name	Working Title & Department	Pilot Interview
GUANQUN CHI CHENG Investment Management (Beijing) Co. Ltd.	Liu Guangdong	President	Yes
Trustlead International Investment Management (Beijing) Co. Ltd.	Liu Yunteng	CEO	Yes
Trustlead International Investment Management (Beijing) Co. Ltd.	Fu Yan	Director of the Financial Department II	No
Tsingtao Phoenix Capital Co. Ltd.	LI/FANGZHENG	CEO	No
Tsingtao Phoenix Capital Co. Ltd.	LI/Gang	CEO	Yes
Sichuan Huao Credit & Financing Investment Management Co. Ltd.	Tong Zhengzheng	Board Member	Yes
Sichuan Huao Credit & Financing Investment Management Co. Ltd.	YUAN/CHENGJIE	Director of Lending	Yes
Shanghai Yongxin Financial Information Service Co. Ltd. (Xinxindai)	Zhang Yang	Board Director	No
Shijiazhuang Huifengyuan Micro-Credit Company	Sun Wanjun	Board Director	Yes
Yunnan Hexing Finance & Guarantee Corporation	Mao Yanbin	General Manager	Yes
Jilin Dasheng Microcredit Co., Ltd.	SUN/LUYOU	President	Yes
Jilin Dasheng Microcredit Co., Ltd.	ZHANG/LEYAN	VP	No
China International Center for Economic and Technical Exchanges	Xie Jin	VP of Department	No
Southwest University for Nationalities	ZHOU/XIANG	Researcher	No

The pilot interview was conducted using designated interview questionnaires, which consisted of five parts (Appendix). This questionnaire was designed following consideration and exploration of the characteristics of local lenders and the dynamic operational processes between them. The motivation of lenders took account of their level of attitude, knowledge, beliefs and personalities in their

career. Following this, questions about the strategies of their company compared and contrasted their actions with their motivations. Moreover, the risk management and marketing sections measured their interactions with competitors and cooperators in the same region. After designing the questionnaire, pilot interviews were implemented to testify the validity and consistency of interviews in reality. The order of questions was slightly altered when practicing in the Chinese context from the English manuscript so that interviewees were able to adapt to the pace and sequence of questions. Suggestions had been given by interviewees in pilot as to how the local context in Guangdong would be different to the northern area. For example, interpersonal networks or similarities with Hong Kong entrepreneurs may change with local norms. This advice was updated in the new version of the questionnaire before moving off.

As a result of desk research, a list of key providers of SME loans was created. It contains both national and international players in Guangdong Province and transitional local players originating from the community. They are active in both the public and private sectors as well as charity organizations. Before an interview was carried out, each organization was contacted and invited to attend for an interview. The name of the interviewee was pointed out in the letter of request if he or she had been exposed in the literature. Otherwise, the position of the interviewee would be highlighted so that the coordinator or department could find the right person. Apart from the public domain information source, the interviewees were also identified through conferences or acceptance networks in order to meet the expectation of local characteristics.

2.3.2 Sampling Strategy

Sampling strategy is the essential concern in both qualitative and quantitative research. The selection of the sampling strategy represents the way of collecting data for a specific research aim and objective (Johnston and Sabin, 2010). In this research, the aim of data collection is to understand the characteristics of lenders in a selected area. In this case, representative sampling and snowball sampling were selected as the sampling methods. Respectively, representative sampling was completed during the desk research process, while snowballing sampling was generated from acceptance networks over a local context.

Representative Sampling

Representative Sampling is a critical component of sampling strategies (Kruskal and Mosteller, 1988). It stands for the sampling based on the significance of samples among a population. In the research of inclusive finance, representative samples could be vital players in a specific region. As the selection of place was decided at the beginning of the research and will be justified in the following sections, the representativeness of the lending institution should be a prerequisite condition in exploring the characteristics of lending in Guangdong province. Therefore, representative sampling has been chosen as one sampling approach. Through the desk research, as indicated earlier, key players were outlined through a large literature review. For example, in banking sectors, it was significant to China Banking Associations that the significance of SME financing was being practiced successfully in a few banks in Guangdong, while the others had not involved them at all. Thus a list of banks that had not been practicing SME finance

was excluded from the sampling. Additionally, in the pilot interviews, candidates were selected based on their geographical locations and the relevance of their businesses. The process of targeting samples could be viewed as representative based.

Snowball Sampling

Snowball sampling is a popular sampling method in qualitative research. The accumulation of data was based on the peer-to-peer introduction from one interviewee to another (Robinson, 2014). For example, in the data collection phase, the first interviewee was introduced by pilot interviewees in the UK. Furthermore, the first local contacts introduced me to their colleagues in the same network. Therefore, the network gradually unfolded and became an important source of data collection. Two sampling methods complemented each other in the data collection process. On the one hand, representative sampling provided key sources to the secondary step, so that the snowballing had its beginning point. Without targeting the relevant contacts initially, snowballing sampling would not develop with an expected track.

2.3.3 Field Work

This section aims to explain how the research methods were selected and how they were employed gradually in the data collection process. In the beginning of this section, reasons and theories for using the right research method will be explored. Two methods are introduced and analyzed before the particularities of doing qualitative research in China will be addressed. Some cultural and informal hints will be highlighted in the end of this section. Before moving into the data

analysis section, the important of desk research will be highlighted to supplement a sound process of data collection.

Table 2.4 Summary of fieldwork

	Personnel approached	Personnel Interviewed	Resp. Rate (%)	No. of firms Approached	No. of firms Accepted	Resp. Rate(%)
Banks	42	30	71.4	12	8	67.7
NGO	6	4	67.7	2	2	100
MLCs	24	20	83.3	12	9	75
Financial Corporations	16	12	75	9	6	67.7
FinTech firms	28	22	78.8	5	5	100
National Expert	12	6	50	12	6	50
International Expert	4	2	50	3	2	67.7
Government Institutions	8	6	75	6	4	67.7
Total	140	102	72.9	61	42	68.9

Source: Author (2013)

The summary above indicates in total that there are 140 personnel from 61 organizations approached in the interview and observations of this research. The range of interviewed institutions include comprehensive players in the market, including the private sector, the public sector and charitable organizations. 40% of interviewees are from a state owned background, 45% are private players and 5% are from the not-for-profit sector. In terms of location, Shenzhen, Guangzhou and Beijing accounted for most of the interviews, which respectively took 56%, 12% and 10% from a statistical point of view. Those interviews were conducted from 8 different sectors: 25% of interviewees were executive officers, 30% were middle

level managers and 45% were basic level officers, such as client managers or loan officers. Questions were asked to those participants including their motivation for entering the finance inclusion sector, business structures, marketing strategies, risk management and lending processes. The average length of each interview was 45 minutes, with the longest lasting approximately 100 minutes and the shortest about 20 minutes. 70% of interviews were longer than 30 minutes. Out of respect for the dynamic market, varied localities and the flourishing industry, this process was completed within less than 20 weeks. Gaining access and maintaining the relationship was the most challenging part of doing the research, which could be understood from the perspective of Chinese culture in society. The applications for interview were politely rejected by some banks and critical departments in other companies. The figure (2.1) below indicates the characteristics of interviews illustrated above.

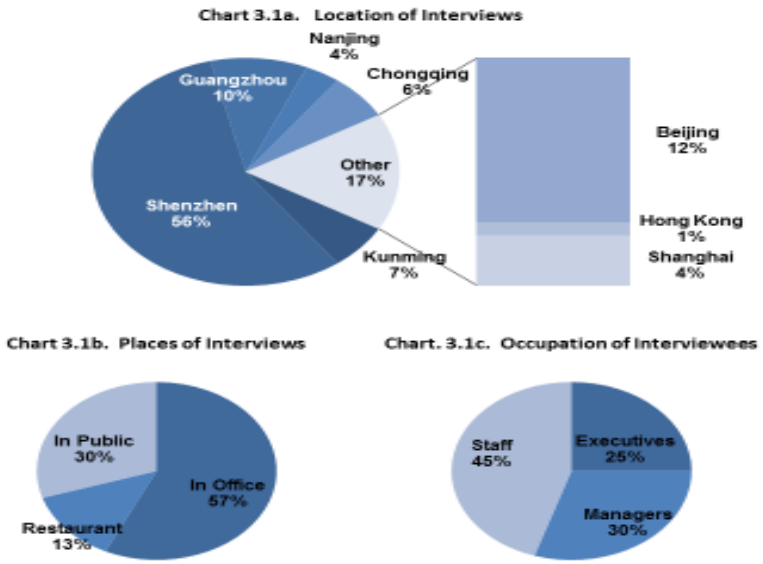


Figure 2.1 Characteristics of Interviews

The interview data has been categorized into three types: formal individual interviews, informal individual interviews and multi-person interviews, which have been illustrated in Table 2.5 below. The categorization is different from the circumstances where interviews were conducted. Formal individual interviews were conducted in an exclusive space, where only the interviewee and interviewer stayed in the interview process. The informal individual interviews refer to when the interviewer was moved to a different space during the interview process with one interviewee. The multi-person interviews refer to interviews with more than one people involved, either accidentally or intentionally. There were two reasons noted for the divergence of interview types. First, the interviewee very often dragged their colleagues into the interview without providing advance information to the researcher. Second, the interviewee intended to accompany the interviewer to the dinner/lunch table as is the etiquette in Chinese culture. It also happened that the interviewee intended to show the practice of loan officers on the street or demonstrate their due diligence process at the inventory of borrowers. In such circumstances, interviews continued in the vehicles, in the restaurant or walking in outdoor places. Those interrupted interviews have been kept, but used only as reference. The invitations to participate in a social life were hard to refuse as a manner showing respect and appreciation. The characteristics of doing interviews in China have been further explained in the following section 3.5.

Table 2.5 Interview Categorization

Interview Types	Number of Interviews
Informal individual interviews	57
Formal Individual Interviews	34
Multi-person interviews	7
Total	98

Given the different categorization of interview data, only formal interviews were strategically applied in the data analysis. Other categorizations of data were referred to, but were not fully translated and transcribed. Formal interviews were fully and manually transcribed in Chinese. There are 36 interviews in the formal interview data set. Nine interviews were taken from regional bank staff from equitized banks, policy banks and local banks. Thirteen interviews were conducted with FinTech firms from all positions, including loan officers, investment advisors, team leaders, city managers, senior executives and founders. Seven interviews were taken with government officers and trade association representatives, both at a national and local level. The remaining seven interviews were conducted with media commentators, local asset exchange managers and researchers. The process of data analysis will be explored in the following section 3.6.

Interviews

The interview has been used intensively in the data collection of this research. Having the right data collection method is important because this process provided evidence to support both the knowledge and theoretical argument of the thesis. It also provides a building block for the thesis as well as reason to explore research questions (Robson and McCartan, 2016). Interviews, which are a critical method used extensively in data collection, are “amount of structure”, to seek answers from key informants about the research (Breakwell and Rose, 2000). Three types of interviews are widely employed in academic research: unstructured, semi-structured and fully structured (Robson and McCartan, 2016). With the advancement in technology, there are new ways of doing interviews through ICT devices rather than in-person discussions (Breakwell and Rose, 2000). In this

thesis, semi-structured interviews were conducted in the field. Data verification and information confirmation was completed through social network applications with interviewees such as WeChat, Weibo and QQ.

In two circumstances, interviews did not proceed successfully. One was a direct rejection, and the other is pending response. 10% of unsuccessful cases came from direct rejection. Interview request was sometimes rejected due to confidentiality or regulation concerns. Banks, particularly, do not favor outside visitors unless they have invitations from insiders. The rejection was not directly or formally, but implicitly through referee with explanation of difficulties.

Rarely was the rejection offered from non-referable institutions such as banks, government officers and field experts. Apart from the public sector, in 60% cases, where I was unable to conduct interviews, related to practitioners from the private sector. This also suggested the inconvenience of meeting with people who are working in positions of responsibility such as risk management or debt management. The other 30% resulted from time limits, as interviewees agreed but were not able to meet before the end of fieldwork or they did not respond to my request before I left.

There are three types of challenges that were encountered throughout the interview process. Finding the interviewees through gatekeepers or referrers was not always easy at the beginning. The difficulty in obtaining formal consent, identifying and coordinating with gatekeepers, who were trusted by interview participants; and confirming the time and place with participants have always been issues confronted by worldwide doctoral researchers and junior researchers (Eide and Allen, 2005; Knox and Burkard, 2009). Efforts were needed to convince the

referrer of the importance of my research. It was more challenging to managing the relationship with interviewees after an interview due to the complexity of their cultural characteristics such as social engagement. The evolution of technology also brought with it the need for innovative interview methods such as the application of social network application on mobile phones.

Finding access to financial institutions for interview data is essential but a frustrating process. The nature of sensitivity in respect of confidentiality sometimes requires differentiating interview methods and locations to secure comprehensive data. For example, formal interview requests were often rejected or left pending by banks or debt management departments in lending companies. Alternative approaches, such as acquaintance networks or public events, were utilized to access essential interviewees. As a result, multiple interview strategies were needed in the different interview circumstances. Three categories of places had been categorized from the field which was in offices, in restaurants and in public spaces. Interviews conducted at public events were slightly shorter than the others due to the inability to separate the interview from the crowd. Interviews from the restaurants were longer as interruptions occurred during the interview. The detailed reasoning for interview places will be explored in the following paragraphs. In particular, 35 interviews from 6 banks were collected at the 7th Guangdong International Finance Exhibition in Shenzhen from 28th-30th November, which was co-organized by the China Council for the Promotion of International Trade (CCPIT) and Shenzhen Municipal Government.

Table 2.6 Characters of Interview Data

	In Office	In Restaurant	In Public
Average time of interview	40 minutes	75 minutes	25 minutes
Number of people involved	2-4	4	many
Records	Exclusively	Noisy; Interrupted	Noisy
Question types	All questions;	All questions;	Specific questions
Number of interviews	43	18	27

The second challenge came from communication with the interviewees. The research experience was that responses received from the interviewees were far more effective from social network applications on smartphones than those from traditional communication vehicles such as email, messages and phone calls. One mobile application called WeChat was so popular during the fieldwork that almost everyone used it. Just as with WhatsApp in the UK, it allows corresponding exchange texts, images and voice messages from mobiles. Additionally, WeChat allows users to share contacts on the application that enables social networking to become much easier than before. Compared with emails, this function tied people tightly not only into office hours, but also out of work. 95% of interviewees asked me to add them on WeChat and referred me to their colleagues through group chatting. 20 groups were added afterwards with 1,500 local lenders, regulators and practitioners connected.

Last but not the least, time management sometimes was beyond my control due to unexpected events. The timing of data collection had an impact on the accessibility of firms and information. The prospects and competition of FinTech

firms increased the accessibility of interviewees, but potentially hindered the accuracy of information from firms and employees. The reason is mainly because they had to focus on everyday practice rather than participating in research projects as a priority.

The busy diary of firm managers and employees placed challenges in the interview scheduling. Interviewees intended to set impromptu meetings with the researcher. For example, interviewees would not reply to emails and schedule meetings until in the evening around 9pm. The meeting was normally scheduled for the following day, when there was little time for doing desk research about the background of interviewees. WeChat was the most preferable form of communication. In addition, break time was commonly preferred by interviewees during the period. Apparently, without reference to local key informants, FinTech firms were not keen to engage in academic research, but were interested in expanding their business or recruiting new staff. However, there were firms attracted by the name of a foreign university because of the intention of sponsoring cross border research on FinTech.

For example, it was often the case that the interviewees answered irrelevantly to the questions or were interrupted by the staff, visitors or phone calls in the office. Moreover, although most interviews were controlled, a few were unexpectedly prolonged as interviewees' received invitations to dine with colleagues from the same company. It was not wise to reject the invitation, not only in Cantonese cultural being as the host is regarded with the greatest of respect, but also given the potential opportunities to develop further interviewees in the network. However, drinking and compliments at the table inevitably reduced the concentration of the researcher and increased the difficulty of note-making afterwards. As a

consequence, namecards were captured around the table so that further contacts could be developed after meals. Furthermore, with the permission of the host, some of the banquets were recorded, which mad the note taking possible.

Observation

Observation has been used in this research as a supplementary approach. As discussed earlier, alternative access was needed when interviewees from th banking sector were rare. Apart from acquiring contacts from exhibitions, observations could be used to identify research objectives from specific sectors such as banking corporations. Previous research (Silverman, 2013; Robson and McCartan, 2016) was sympathetic to the benefits of observation in qualitative research, particularly with the application of interviews. One significant advantage of observation is its continuous engagement with research objects and occurrences as they happen. Meanwhile, observation contributes to consistent data collection.

In this research project, observation was employed for two reasons. One was to explore the lending characteristics and process from a banking perspective; the other was to reduce the possibility of biased sampling from the imbalanced distribution of data from the banking sector. The observation started at the beginning of October and finished at the end of that month. They started from 9am in the morning to 6pm in the evening every weekday. Sometimes extra working hours at weekend were needed due to the work load of that team. We needed to wear uniforms every workday and IDs were checked for work inspection purposes. I had been allocated to a very small office desk, which was shared by me and a

client manager. There were about 10 desks piled high with files and documents, and which was allocated to a 40 sq. foot office. More than 10 staff were using this space in turn harmoniously as some of them needed to enter data in the computer, and some needed to deal with clients outside.

The opportunity for observation came coincidentally from an acquaintance's reference, where a deputy manager offered a chance for three weeks' internship from this bank. As a national bank with competitive outreach in 80% of the cities in China, working with their SME finance team would bring knowledge of practice to solve research questions internally with employees. Three weeks was the agreement between me and the bank, subject to the characteristics of this research and a systematic approach to gaining knowledge. During the participatory observation, interviews were arranged individually with client managers subject to their occupation and specialization, which accounted for 10% of the total interviews in this research project. It was a privilege that the deputy manager of the branch agreed to provide the conference room for my interview space so that exclusive conversations were allowed in the observation.

One constant challenge was the reservation of the conference room for doing interviews. The intensive use of the conference room increased the difficulties of matching the time between the interviewees and the availability of the space. Sometimes the interview had to be postponed due to the temporal occupation or delaying of the conference room use. An alternative approach was interviewing at lunch time. Two advantages of this were space and time. Although it was not expected that the bank would provide a smart apartment around the branch for catering and accommodation, they did provide a three bedrooms' apartment with

hourly workers. This allowed 24 staff at the branch to enjoy a free lunch and breakfast with little cost. Every day the bank closed for lunch break between 12pm to 1:30 pm so that the staff could have their meals. Some staff napped in the bedrooms after lunch, and others relaxed in the main room. Some of the interviews were conducted during the lunch break where time and space were not a problem.

The second challenge in the observation was the note taking. As an intern of the bank, access to the wireless internet was restricted at anytime of a day. I was unable to use my laptops due to confidentiality. As a result, recording an interview or observation was not an option. I had to take short notes in the office if I saw or heard dialogue that either related to my research or as part of my interview. Sometimes managers would come to see my notes and asked me about their purpose. In some circumstances, I needed the manager's approval to obtain and print internal documents. Although the completion of the observation was satisfactory, there are some regrets and concerns following the conduction of the field visit. For instance, my request to visit the credit approval office in the regional branch was denied. I have been told that only full time staff are permitted to enter a regional branch, and apparently, as an intern I am not included in this.

2.4 Why Guangdong?

Guangdong has been viewed as a unique province in China in terms of undertaking this research. This is for three reasons. As discussed earlier, this project aims to explore firm level activities, whose robustness is largely reflected by the economic development in a specific region (Ma, 2007). In general, China has an imbalanced development economically and geographically among its 31

provinces. From provincial perspectives, the eastern regions have grown more rapidly than the west by taking advantage of international trade. While from an urban development perspective, cities in general have been better established than those in the rural areas. In this case, this research primarily focuses on the large cities in eastern provinces. Within Guangdong province, Guangzhou and Shenzhen account for half of the economic growth and the demographic growth is accounted for by the remaining 19 cities. The chart below indicates the significance of two cities from the comparison.

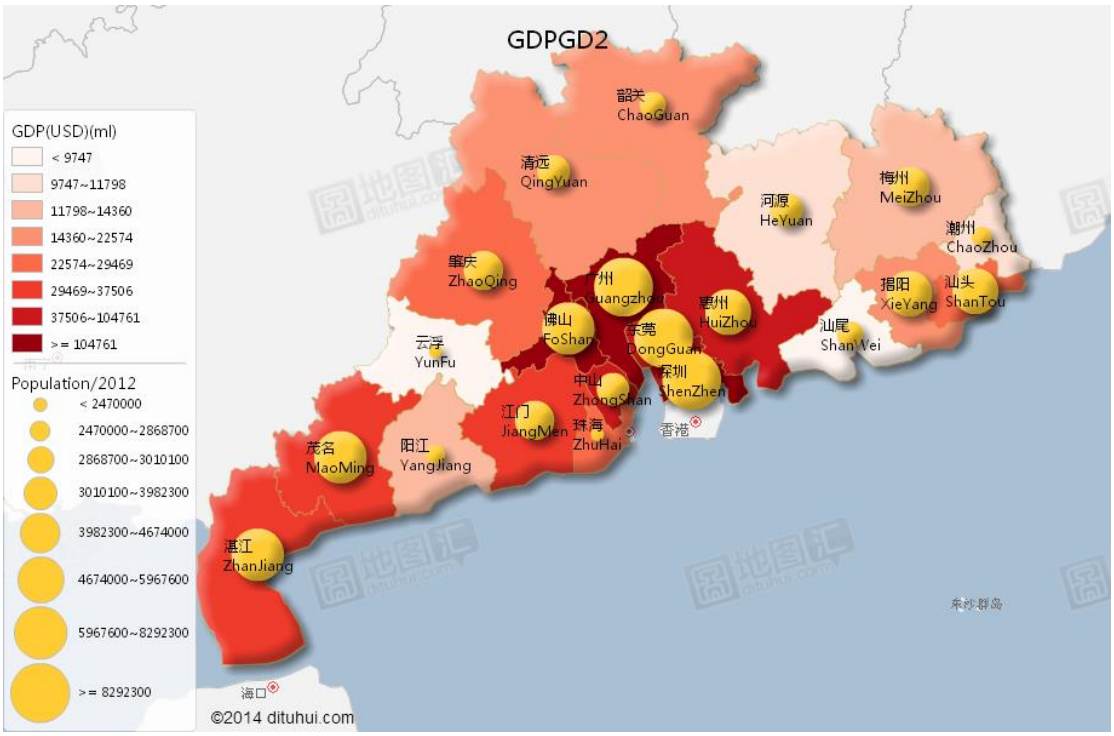


Figure 2.2 Guangdong cities' GDP and Population

Reference: Guangdong Statistics Bureau (2013)

Shanghai and Beijing were the biggest cities in China but have not been included as fieldwork sites in this research. The reason for this is their geographical and political characteristics, which serve international and regional corporations rather

than SMEs. As the capital city of Guangdong Province, Guangzhou does not fall behind major cities in China in terms of economic development. On the contrary, it provides space for regional cities to serve the local economy for finance perspectives (Wang, 2014). Two figures (2.3a & 2.3b) shown below outline the economic development parameters from related localities subject to their GDP data extracted from the China Statistics Bureau. They have clearly indicated that Guangdong has been the top province in China in terms of economic development, which is reflected by its robustness of firm activities within this area. In particularly, Guangzhou and Shenzhen, the biggest cities in Guangdong province, ranked among the top six cities in China including Shanghai, Beijing and Hong Kong.

Figure 2.3 2013 GDP in Chinese Region



Figure 2.3a 2013 GDP in Chinese Cities

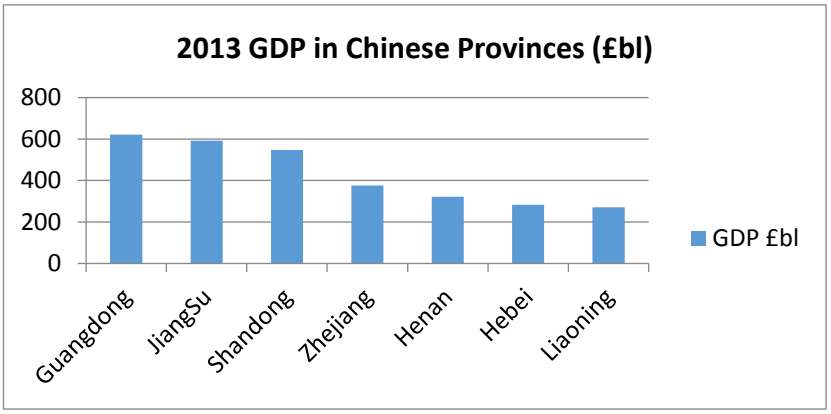


Figure 2.3b GDP in Chinese Provinces in 2013

Source: National Statistics Bureau, China

The financial contribution to the real economy could be measured in two ways. First is from the Aggregate Financing to the Real Economy (AFRE) index, which is the central bank approach and the other is from the local government financial asset exchange perspective. These are two supplementary approaches in understanding the total amount of credit in supporting the local economy. AFRE was been introduced to China in 2010 by the People's Bank of China. Its purpose was to describe the total financing from the financial system to the real economy during a certain period and to supplement monetary aggregates, which were used previously. It represents the latest effort from central government to monitor and control financial stability in the whole society. On the contrary, the local financial exchange does not fall into the remit of the Central bank, but is under the administration of local authorities. Combining those two indexes would better measure the status quo of credit in real economy in China.

It is significant that Guangdong plays an important role in aggregate financing to the real economy, as Guangdong evidently utilized social financing in supporting real economy growth from the Central bank data released for 2013. From the table

(2.7) listed below, Guangdong ranked top among 31 provinces and cities in terms of social financing to the real economy from various financial institutions. From Guangdong's perspective, both Shenzhen and Guangdong have played an important role in the financial asset exchange. In 2009, The Minister of Finance announced its new encouragement policy for financial asset exchanging between State Owned Financial Institutions and local authorities. From the new policy, the central government permitted local authorities to establish financial asset exchanges within its regime and urged financial institutions to swap their assets solely in the exchange. Theoretically, those exchanges would facilitate exits from positions in illiquid assets at a time when the securities market had been struggling. There are only three exchanges in Guangdong, one is in Shenzhen and two are in Guangzhou. Those figures demonstrate that Guangzhou and Shenzhen are the regional financial centers and play a significant role in the securitization of lending institutions locally (*ibid*).

From a global perspective, Global Financial Centres Index 15 published by Z/Yen, ranked Shenzhen No.1 in the International Finance City from others in mainland China. The latest ranking from Z/Yen contrasts the previous research, which priories Beijing or Shanghai as being among the top financial cities in China. Shenzhen and Guangzhou are also the only two cities in Guangdong Province that have been planning the industrial zones of micro-lending companies and internet-based finance to support SME enterprises. In addition to this, they were involved in establishing the first two wholesale funds in the country to support local SME lenders with external capitals with one billion RMB. These figures support Shenzhen and Guangzhou as being significant cities to be explored in Guangdong

Provinces. The Guangdong regulator has also been dynamic in their approach by keeping an open mind and engaging closely with innovators. Guangzhou and Shenzhen were the only two cities in Guangdong, who set up the Internet Finance Industrial Zone in 2013. These industry zones represented the support from local government as space and tax incentives to encourage Peer-to-Peer lending and investment platforms.

Table 2.7 Aggregate Financing to the Real Economy by Province

	Aggregate financing to the real economy by province	Of which: Unit: 100 Million Yuan						
		RMB loans	Foreign currency-denominated loans (RMB equivalent)	Entrusted loans	Trust loans	Undiscounted bankers' acceptances	Net financing of corporate bonds	Equity financing on the domestic stock market by non-financial enterprises
Guangdong	**13826**	**8223**	**293**	**1960**	**886**	**1106**	**599**	**193**
Beijing	12556	3954	844	2552	286	257	4246	164
Jiangsu	12070	7208	-65	1901	482	432	1624	49
Shandong	10838	4613	410	1329	935	2036	1128	44
Zhejiang	8345	5491	302	1365	724	-1090	871	130
Shanghai	7964	3177	267	1884	1783	26	494	85
Sichuan	7137	3951	174	1449	693	-275	510	86
Fujian	6923	3183	301	1022	1562	64	532	36
Hebei	6247	3042	5	813	843	720	349	91
Hubei	6114	2756	110	781	1096	529	517	101
Henan	5691	3004	151	577	269	512	861	81
Liaoning	5654	3163	256	815	-49	612	564	67
Chongqing	5031	2222	183	845	466	346	528	109
Anhui	4969	2761	115	607	551	277	358	117
Tianjin	4910	2028	437	552	529	397	802	39

Continuing Table 2.7

Yunnan	4268	1928	27	564	1157	62	280	101
Shaanxi	4254	2350	55	677	268	245	485	52
Hunan	4165	2395	64	417	136	362	526	126
Jiangxi	3898	1979	8	383	917	147	282	34
Shanxi	3701	1774	37	711	168	148	678	39
Guizhou	3541	1821	-20	485	486	525	178	5
Heilongjiang	3333	1436	82	407	1120	-32	167	26
Xinjiang	2854	1916	80	-152	347	94	332	91
Guangxi	2801	1698	27	543	0	60	256	7
Inner Mongolia	2730	1636	8	245	401	-124	288	161
Gansu	2617	1585	36	253	11	289	225	107
Jilin	2172	1532	-3	280	61	10	117	50
Qinghai	1229	603	43	86	292	26	153	0
Hainan	1084	592	160	131	0	72	97	0
Tibet	773	412	0	21	315	12	-20	25
Ningxia	664	568	6	67	0	-32	16	2

Note1: "Aggregate Financing to the Real Economy (AFRE) by province" refers to the total volume of financing provided by the financial system to the real economy during a certain period in each province. It is a flow. The statistics is provisional.
Source of data: PBOC *et. al*., (2013).

Shenzhen and Guangzhou are the largest cities in China and in Guangdong. Although they share many similarities, they are distinct from each other. First, Shenzhen is more directed by the central government, but Guangzhou is defined as a regional center. Compared with Guangzhou as an ancient city and regional hub, Shenzhen is a young city, which has grown from a fishing village to be the world's largest electronic manufacturing and design hub in 30 years. The growth of Shenzhen coincided with, and was propelled by, beneficial policies given by central government. As an independently planning city, Shenzhen has the privilege of being exempt from sharing tax with Guangdong province. As a result, although Shenzhen is only 26% as large as Guangzhou and has less fiscal income, it has almost doubled its autonomous budget as compared to Guangzhou in 2013. The rich budget enabled Shenzhen to empower its firms and build a better business and living environment than other cities. For example, Shenzhen has the highest green coverage rate in Chinese cities at 45%, which made Shenzhen as a the most habitable city in China. These characteristics also helped local business grow. In 2013, more than 180 Shenzhen based firms were listed in public, and most of them are technology driven enterprises. Table 2.8 below outlines the differences between Guangzhou and Shenzhen.

Table 2.8 Shenzhen and Guangzhou in comparison

Indicators	Shenzhen	Guangzhou
Level of Administration	Vice Provincial City, Interdepend Plan City	Vice Provincial City
Fiscal Budget(2013)	208.2 Billion RMB	124.1 Billion RMB
Fiscal Income (2013)	483.4 Billion RMB	556 Billion RMB
Key Industries	Hi-Tech, Financial Service, Supply Chain and Creative Culture	Automobile, Electronics, Petro chemistry, Exhibition, Real Estate
Added Value of Output in Finance (2013)	223.7 billion	130.3 billion
Head-officeed MNCs in China	Tencent，Huawei，ZTE，China Merchant，Ping'An，Wanke，BYD，Kingdee，DJI	China Southern Grid, China Southern Airlines, Guangzhou Automobile, Guangzhou Railways, COMEC, China Petrol (Guangdong), Colgate, Nestlé, Amway, Evergrande, R&F, Poly Group, Agile Property, Yuexiu Group
Land Area (sq.km)	1997	7249
Permanent Population at the Year-end (10000 persons)	1054.74	1283.89
Total Population with Residence Registration at the Year-end (million)	2.99	8.223
Number of Private Vehicles Owned (million)	1.78	1.65
Number of Internet Finance Industrial Zones	3	1
Public Listed Company	185	93

Source: Statistics Bureau of Guangdong, 2013; GDRCFW, 2013

The high proportion of technology firms branded Shenzhen as a smart city with a highly advanced community of technology and design, which is the second distinction between the two cities. Generally, Shenzhen is supported by an advanced producer service, while Guangzhou is backed up by industries, real estate and manufacturing. In 2014, Shenzhen had 11,639 international patent applications, almost accounting for half of the total applications in China, with its application number ranking first nationwide for the past 11 years (Shenzhen Daily, 2015). Shenzhen entrepreneurs have been inspired by the success of Huawei and Tencent, who were well-established in the area. It was mentioned in the interview, that there were no other places in the country like Shenzhen that can satisfy their creativity and imagination for finding the talents and IT hardware so easily. As electronic manufacturing migrated to Shenzhen, the informal network of local private manufacturers found a perfect product in the mobile phone. They are not only copycats of branded smartphones, but an ecosystem that first brought the market the dual-sim card phone. These new devices catered for low-income migrant populations that could not afford branded products. Based on this cheap but affordable smart device, migrant workers built up their social networks through virtual community provided by Tencent.

Third, the population intensity in Shenzhen is much greater than in Guangzhou according to statistics. Compared to Guangzhou, which inhabited 8.223 million registered local residences, Shenzhen had a population of only 2.995 million in 2013. These numbers might be inaccurate given the existence of the large numbers of unregistered populations living in the city, who were excluded from welfare systems in urban areas only. This difference is partially determined by the

size of land between two cities. The differences of car ownership are not that great. Shenzhen contained 1.78 million registered cars, which is larger than the number of registered cars in Guangzhou estimated at 1.65 million in 2013. Contradictory to the registered population in each city, the ratio of cars owned per capita in Shenzhen is 1.68, while in Guangzhou this ratio is 0.2. This difference indicated the popularity of cars in Shenzhen, the potential of car based services in the city and the preference of citizens and firms in Shenzhen for utilizing vehicles as capital resources.

2.5 Doing research in China

Three key lessons have been outlined in terms of doing qualitative research in China: acquaintance networks, giving gifts and mobile application usage. Those characteristics are critical for doing qualitative research in China. Previous research (Noonan, 1984; Vogel, 1989; Steidlmeier, 1999; Osteen, 2013; Ambwani, 2014) has highlighted the challenges for researchers within the Chinese context because of the varieties of culture.

2.5.1 Gift Giving

Previous research in social anthropology has demonstrated the development of gifts and their exchange as societal meanings of generosity and responsibility of wealth (Mauss, 1954). In order to begin to explore the gift giving from a broader context, it is necessary to consider how gifts are exchanged, abstracted and reciprocated in the Chinese context. Those theories were implied in the fieldwork for data collecting and provided theoretical support in behaving appropriately whilst doing research in China.

Mauss conducts an exploration of the obligations on gift giving, and more crucially to exchange that which is given – in a value equal to or greater than that which was received. In each and every given instance of the practices and rituals of gift giving in a number of different cultural contexts, this exists in spite of possible differences in the practice of gift exchange and the reasons behind them. Mauss constantly stressed the importance of the obligation to exchange gifts. The value behind this is to preserve connections between parties in reciprocal relations. There were a number of issues in the quality and quantity of gift giving. For example, giving too many gifts is likely to cause pressure on the recipient as returning might be considered to be worth too little. It exhibits a conspicuous display of wealth, which is intended to bring shame to the recipient, and denotes a challenge of additional reciprocal wealth. Chinese scholars (Qi, 2013; Luo and Wang, 2010) developed Mauss's theory in the Chinese context, which argues that gifts circulate in China based on reciprocity. It encompasses economic, social and political functions through exchanges. Through gift giving, reciprocity is rooted in the underlying personal networks of renqing (in Chinese 人情)", which directs gift giving and receiving between those from the same personal networks. Yang (2002) also suggested that banquets play the same role as gift giving in building up personal or social networks in China.

It is also evident from the field work that it is a prerequisite to be introduced by someone who knows the interviewers beforehand if an effective and open discussion is expected. Being introduced by someone in this network sometimes indicates an insurance on interview request. It indicts that this visitor, who was appealing for an interview, has been endorsed or trusted. In this research project,

assisting the delegation in the UK gained the researcher extra credibility and access to interviews. The China Association of Microfinance agreed to provide free access to training and databases for my research in return for my accommodation with them in the UK. Without the assistance, the likelihood of access to this number of databases would have been lower, which indicates that the “renqing” or social capitals would be less resilient. In the data collection of this thesis, the interviewees agreed the usage of data prior to a copy being sent and reviewed beforehand. As suggested, commercial secrets were not allowed to be publicized in the research.

2.5.2 Social Networking Application on Smartphone

Previous research introduced the application of information communication technologies (ICTs) in academic studies. Recent research highlights the emergence in technology that employed qualitative research such as interaction transcripts, Weblog archives, videos, Web sites and mobile applications. The benefits of employing ICT devices include the reduction of cost, flexibility of participation and data storage. For example, that online synchronous/asynchronous interviews and virtual focus groups have been identified increasingly and applied in recent publications (Bowker & Tuffin, 2004; Wilson *et. al.*, 2012), even indicates that internet based interviews provides informed consent and confidentiality towards both parties. Mobiles have been regarded as the popular equipment of research tools with ICTs. There are three types of interactions on mobile devices: SMS Text, Mobile Web and Applications (Breakwell and Rose 2000; Knox and Burkard, 2009). Recent developments of mobile operation systems such as OS and Android largely transformed the computer based researchers to mobile platforms as regards improved user

experience, high response rate and multi-functions (Corbin and Strauss, 2014). In addition, the adaptation to technology in doing research largely increases the efficiency of interaction with research objects, particularly within emerging countries such as China (Marcus & Krishnamurthi, 2009; Qui et al., 2012).

In the field research in China, mobile applications became a main vehicle for data collection. As discussed earlier, each stage of the research journey was involved with substantial support from mobile devices. In particular, social networking, recording and navigating applications on smart phones were often used during research to construct formal networks. Although some popular applications in the UK were not applicable, in China, Wechat and Weibo are the most popular Chinese social network (mobile) application products. Similar to Whatsapp and Twitter in the UK, more than 500 million Chinese speaking users are using those two products simultaneously in the world. Their popularity overrides their imported competitors, and this is largely attributed to Chinese internet safety policy. Customers develop their profile and tweets proactively due to the unprecedented circumstances of freedom of expression in reality, and the interactive exchange of opinions or arguments in the virtual community, including business developers, enterprises representatives, journalists and academic researchers.

2.5.3 Language Translations

As discussed earlier, the data collection process in this research consisted of a multiple dimension of processes in terms of regions and linguistics. Translational capacity was not mandatory, but it was essential for completing the research, not only with expected proficiency in Chinese and English, but to some extent with the

requirement to understand Cantonese. Language translation has always been a challenge for cross-broder researchers in qualitative studies (Chava and David, 2007). For instance, some of the phases used in the practice by the lenders do not naturally inherit academic English. Furthermore, interpretation and research was needed to understand their expression after the interviews had been carried out. In this research, crosschecking was requested after the interview if further interpretation was needed. Either the interviewee themselves or their colleagues could be reached through email, telephone calls, mobile application messages or in-person communication. This challenge has typically taken account of in the data analysis section, where data documentation has been used rather than software based data analysis tools.

2.6 Data Analyse

The analysis used grounded theory following analytic induction to organise emergent themes and then build a theoretical framework from the coding process. This is illustrated below in Table 2.9. All data were analysed manually through four stages. First, data was translated from Chinese to English. Second, the translated interviews and fieldwork notes were coded holistically and thematically. Third, data was categorised into three types in order to distinguish the formal interview data, informal interview data and group interviews. Fourth, conceptualisation was conducted based on linked codes and tree codes.

Table 2.9 Analysis Process

Stage	Method	Purpose
1	Translation and summary of interview data and fieldwork notes	To produce English text as data in the further analyse process
2	Coding based on translated texts	To provide an overview of data and explore its characteristics
3	Categorisation	Building coding trees and concepts
4	Conceptualization	Putting data on coding trees into theories for empirical research

In the first stage, all the data collected in this research was in Chinese mandarin and the research process involved translation and comprehension from English to Chinese throughout the research process. According to Temple and Young (2004), solutions have not been globally accepted about when translators are those who are also carrying out the research in a research project. There have been methodological and epistemological challenges around researchers using conventional research methods. Especially in Chinese, it was suggested by previous bilingual researchers (Lihong and Miguel, 2013) that the interview data should be transcribed, coded and stored in the original language, in spite of the fact that English is expected to be used in the language of data analysis.

This method primarily has two advantages. Firstly, based on the previous discussion, because of the various interpretations of narrative, and the gap in equivalent words between Chinese and English, it is quite hard to translate a large number of qualitative statistics from Chinese to English (Twinn, 1997; Squires, 2009). So the probability of mistakes, misinterpretation and inaccuracy can be greatly decreased by the non-translation statistics method, compromising the reliable and valid statistics as well as the true and credible study finding. Secondly,

this method could retain the dynamic-and-natural connection between statistical collection and analysis. Based on the research of Esposito (2001), the qualitative study is different from the quantitative study; its statistics collection and analysis have two dynamic stages that could be conducted in an ideal way at the same time. So the early translation between two processes could affect the close relationship between statistics, analysis and interpretations. And the study quality would make it riskier for the transitional translation so that researchers would ignore little differences and the deeper meanings of the statistics (Marshall and White, 1994), which only can be comprehended in Chinese. This could be of critical importance in comprehending a study's phenomenon and constructing the theory.

In the following phase, the analysis of contents was also done to record the occurrence of the event and features, which is specifically helpful for the identification of interview groups (Fielding and Fielding, 1986; Silverman, 2013). This method would also remove the contextual essence of the statistics, resulting in the misunderstanding of the meaning. The following coding was on a basis of point so as to obtain the whole meaning, but the creation of a large amount of codes needed refinement by the multiple coding-cycles to set up their conceptual clarification and merging of the code group (Rubin and Rubin, 2005). In the phase, analytic memorandum is an essential equipment to write down the concept's improvement and linkage. Codes and code groups were identified in Chinese and then translated into English for the review and significance. This process guaranteed the accuracy of data and genuineness of interviewees' intention. Essential phrases were covered in the field work and transcription procedure to

facilitate the interpretation and the assessment of the statistics (Bird, 2005; Mulhall, 2012). Analyses were conducted until the achievement of the code consistency.

Particular focus is given to the FinTech firms because of the number and high weight of codes interviews in this themed topic. Indicators were used for the identification of FinTech firms in the course of the analysis. These are founded on the conceptual framework of the topic, and the research's ideation of FinTech industry from desk research. The indicators utilised reveal the practices and influences of instances of FinTech (such as process and risks) sketched in Table 2.10. FinTech firms have been expounded with other entities in Guangdong in the process of identifying the parameters of actors and their embedded business networks associated with one another. The decision to choose FinTech firms was confirmed after translating data and analysing them from transcripts. Of note is the fact that the interpretation of FinTech firms might be restricted by the position of interviewees such as founders, senior managers and their employed staff. (Mulhall. 2012).

Table 2.10 Observable Indicators of FinTech

Dimension of FinTech	Indicator	In Chinese translation
Regulation	Absence of market order	缺乏监管
	Interest Rate Gap	利率限制
	Illegal Fund Raising	非法集资
	Uncertainty	不确定性
	Monopoly	垄断
	Tax	税务
Ecosystem	Internet	互联网
	Mobile	移动端
	Information technology	IT 产业
	Trade Association	同业协会
	Peking University Shenzhen (Beida)	北京大学深圳研究生院
Process	Customer attraction	获取客户
	Expansion	市场拓展 （跑马圈地）
	Venture Capital investment	风投
	WeChat	微信
	Cost of Capital	资金成本
	Training	培训
	Credit Bureau	征信
	Performance Management	绩效管理
	Corporate Governance	公司架构
	Risk Control	风控
Risk Management	Information Security	信息安全
	Custodian	托管
	Run Away borrowers/ boss	跑路

Source: Author (2012) based on conceptualisations of FinTech firm interviews

2.7 Validity and Reliability

A range of methods were selected from previous research to ensure the validity of the research; multiple data sources were made together to offer supplementary information, the cross checking with different interviewees on a same question and the following desk research was conducted from ideas emerging from interview transcripts on specific rules and regulations (Mulhall, 2012).

One problem has been carefully addressed during data collection and analysis to ensure the validity of the research, which is the over reliance on a minority of data sources. The utilisation of a single interview is quite difficult in the identification of a valid single representation, due to partial knowledge or perspectives and the hidden interview agenda (Golafshani, 2003), it receives criticism (Healey and Rawlinson, 1993; Markusen, 1994; Petkov and Kaoullas, 2015). With the purpose of obtaining a minimal interviewee bias, multiple interviews were conducted in all firms. However, this was quite hard because of the restricted amount of proper interviewees and ongoing access in each firm. The small firm usually has one person, such as the owner or manager, who has the responsibility of making the operation's decisions. The big firm is more likely to be biased due to the increasing segregation of the role. To alleviate this mistake, multi-person interviews were taken when necessary.

A reflexive method was employed to ensure the reliability of the data collection and analysis. Because the research was conducted in a specific time and place, it is possible that the representation of data could only present a proportion of the picture of the research topic. Admittedly, this approach to data collection has its limitations as qualitative research, yet this method still widens the

conceptualisation of mechanism and structure of the research objects (Mulhull, 2012). In order to show reliability of data in collection and analysis phases, the frequency and representativeness of data are demonstrated in the results to present the partial explanation of some issues (Silverman, 2013).

In general, the sample shows the landscape of population of FinTech firms in Guangdong and China, but the amount of firms in specific classifications is not likely to be generalized for the whole industry in this research. The attention on the process could produce motives, but not inevitably exert influences, and the study maintains the finding of diversity in the industry. Previous research has illustrated the balance of generalization and diversity in academic research (Mulhull, 2012; Myers, 2013; Yin, 2015). As regards the conceptualization process, the diversity in the study agent would be more helpful than typologies. The latter has been utilized in the research to distinguish the wide strategic methods with fundamental difference, only covering the case that obvious evidence was inspected, and then they played the role of the representational agent. Representational agents or processes could retain the diversity, which offered more space for the generalization beyond the current research team. But the process could be applied to other environments, which could improve comprehension without full generalization due to the particular inter-action of causal and environmental factors. To sum up, the research finding aims at only representing the working of the firm under the research and only make relations with the context in a direct way.

2.8 Ethics

Research Ethics refers to the moral principles that guide the entire research progress from its beginning through to completion and beyond (Stanley and Wise, 2010). This section follows the ESRC research ethics principal and ethics rules set by the University of Birmingham Ethics Committee. Considering the international and national code of conduct and previous research of financial inclusion, ethical issues have been prioritized throughout the research. Ethics have also been addressed independently from three perspectives: fulfilment of funding requirements, universal beneficence and impartiality.

Integrity is the virtue and priority for doing research. This characteristic expects researchers to comply with the ethical considerations according to their research. A form on the Ethical Review was submitted and approved by the Ethics Committee of the University of Birmingham. According to the University Regulations, access to this data will be denied without the consent of the administrators. The data were expected to be kept safely and securely for ten years and would then be disposed after the fulfillment of university data retaining regulations.

The emphasis on business organizations gave rise to two ethical issues: non-public information and sensitivity to the heat competition in FinTech firms across Guangdong and China. The confidentiality of firms, participants and information was preserved during the entire research by making use of codes to represent names for people and interviewed firms. All interviewees agreed to participate with the research and were informed by consent forms. Consent forms were sent through email or WeChat confidentiality agreement, between the participant and

researcher, which encompassed the research aims and objectives. The process of research and use of information was explained in a clear manner together with a list of questions.

A mixed response arose at the end of the interview process. Generally, the consent forms were perceived not to be a necessity and were neglected by most of the interviewees. Nevertheless, inasmuch as the consent forms were stipulated by the university, they were explained in all interviews, before and after, and were sent to the respondent as soon as an interview was arranged. This was to allocate time before or after the interview in informal interviews, when it was not possible to provide an explanation. All the interviewees agreed to conduct interviews, but 30% were not willing to sign the forms as a formal response. 40% of interviewees replied formally in email or WeChat to express consent, but were not willing to sign the forms in person. In particular, junior staff and team leaders intended to request consent from senior managers before signing forms. Senior members signed the forms themselves, but asked the researcher to sign the forms on behalf of interviewees at the junior level. Given the irregularity of working hours of interviewees, this research kept records of verbal and authorised consent of interviewees as emails of chat records, but a formal signature on the consent form was not insisted on after leaving China. All data were stored in a secure fashion to conform with university practices and ethical codes of conduct.

An alternative participant was sought if interviewees were determined to withdraw from the research. In addition, the interview records were deleted from the device if anyone made such decision. Until the submission of this thesis, no single request was received from interviewees regarding the withdrawal from an interview.

Instead, informal greetings were exchanged and informal requests for clarification were quoted during the data analysis part after the interviews. Small gifts were also exchanged and sent from overseas to respondents and referrals to recognize the time and participation that was given to the project.

Because of the timing and emphasis of the research, the interview process had discussion about very sensitive and topical issues, which called for delicate treatment to guarantee respect and compassion for participants' circumstances. In quite a few cases, topics about personal issues were insinuated in the interview, such as private relationships between employees and management teams, intimate relationships between partners and travel plans in the coming vacations.

This personal information was deemed suitable to be extracted from the interview transcripts, due to the ethical concerns of privacy protection regarding the interviewees. The topics and interview questions were provided to the participants in advance of the interview, even though an interview schedule was interrupted by phone calls or an impromptu meeting requested by employees. These conversations in the phone or between employees were not included in the transcript even through it was recorded in the interview itself. Exceptionally, interviewees intentionally introduced colleagues to join the interview, which was not scheduled in advance, to comment on a topic that was prepared in the interview list. Those interviews were regarded as either group interviews or informal interviews when consent were not able to be obtained in person from the interrupters, but it was agreed to use this in the research with the main interviewees engaged in the initial stages of the research.

2.9 Conclusion

Although this thesis refers largely to the context of Guangdong province in China, it will be accomplished in English and mainly based in the UK. The reason behind the writing of this thesis is to engage in the international discussion of the thesis and somehow to contribute to the current literature database of financial inclusion in China for further researchers. Enrolling in an international higher institution in the UK determines the outcomes of research that will not only be discussed in China, but also the arena of international academia. In this case, although some of the findings will be also published in Chinese as an international custom, understanding research methods, ethics and process is beneficiary to this research in order to improve wellbeing in the global academic network.

A review of research method is provided in this chapter to examine the progress of research journey, include research design, analysis and validity and dealing with local norms. The analysis of this research is based on 36 core interviews and 62 referable informal and group interviews. In addition to interviews, this research also based on research methods including desk research and rigorous sampling.

Data analysis was caught out with coding techniques in the analytical process. The results will be discussed in the following empirical chapters. The results began to present with an overview of financial service industry in China, provided in the following chapter, outlining the key transitions and challenges in the service to SMEs. This overview highlights the key areas of financial service currently undertaken, gaps in between mainstream lenders and borrowers to high value-added which will form empirical discussions in following chapters. Finally, FinTech firms will be introduced as a potential solution to the market gap.

CHAPTER 3

FINANCIAL ACCESSIBILITY AND CHINA'S FINANCIAL SYSTEM

> *"The dual governance structure in financial services created problems in lots of aspects, especially in financial inclusion. In the stage of digitalization, we need new political regime to optimize the solutions to information and power asymmetry." Kegu Liu, ex-VP of China Development Bank, Chair of China Micro-lending Companies' Association, October, 2013, Beijing*

3.1 Introduction

The aim of this chapter is to explain the evolving geography of FinTech service in China through the provision of credit to small businesses. Consequently, the following objectives have been outlined:

- To explore the banking system in China and the representation in the financial system at the state level of China
- To explain the devolution of financial institutions at a regional level in China.
- To outline the evolution of the Chinese financial systems with the advancement and integration and the development of FinTech.
- Analyse and situate Guangdong as an important location for understanding FinTech service in China.

FinTech will be explored from two aspects. It starts with the history of technology implementation in the banking institutions and the experience on the SMEs and individuals in particular. Then FinTech needs to be explored though the spin-off companies' perspective by the banks and information service providers at both the scale of the nation and province because of different ways in which the financial sector is controlled and also the operation of national and provincial policy. The

major banks were established by national government of China in the 1980s as means of money depositors and distributors (Dipchand, Zhang and Ma, 1994; Liu, 2013). Those banks were allocated to different provinces and were regulated centrally by national government. Local governments wanted to leverage the banking resources to tackle local problems, such as poverty alleviation, firm expansion and job creation, but their initiatives were prohibited by national government in the name of financial resilience. At the same time, Chinese laws repressed private financial service providers to try to control the stability of the economic and political system.

The asymmetric power and resources between national government and local government in China has led to the development of a fragmented and partial financial service. Particularly, the centralised financial system is unable to serve SMEs that were rooted in and grew from villages, towns and cities in each province. Consequently, the financial system was transformed and consolidated several times to ease the tension between administrations. Methods include technology updates, foreign technique assistance as well as managerial structural reform.

Decentralization is an effective solution to empower local SMEs by allowing local government to initiate local lending facilities, include micro-lending companies and guarantee companies. FinTech firms have been the latest solution that was sought by SMEs and individuals who were excluded from banking service in China. Guangdong, which is one of the most developed Chinese provinces, is identified in this analysis as an important location for FinTech firms in China.

This chapter is divided in to four parts. It begins by exploring the private sector and small firms in China as an important part of the country's national economic development. The growth of private business also reveals the fragile institutional environment that supports small businesses in China and the reasons they are not favoured by the current financial system. Second, this chapter explores SME finance from the banking system in three aspects: adaptation, innovation and regulation. Third, the chapter illustrates the role local lenders play in substituting for the national banking system. This chapter ends with a discussion of market gaps in the availability of financial service and the emergence of FinTech firms. Guangdong is identified as playing an important role in the emergence of Chinese FinTech firms.

3.2 Dynamics of Chinese Service Economy

Financial Services have been regarded as a critical part of global production networks and advanced business services (Coe., et al., 2014). Understanding the evolution trajectory of service economies helps to understand the industry, occupation and functions of financial services (Bryson, Daniels and Warf, 2004). The changing dynamics of economic activity are manifested in the on-going evolution of financial service provision in China. Three stages of economic development can be identified. First, the legitimacy granted to non-state owned firms and their activities brought unprecedented productivity to China from 1978 and led to the opening up of the Chinese economy to the world economy. Second, devolution and deregulation transformed the Chinese economy from the 1980s based on exports and growth particularly at the regional and coastal level. Third, the emergence of information-based services added an additional dimension to

China's economy, which included internet-based services, financial services, and the emergence of e-commerce and FinTech over the past decade.

This section provides the foundation to understand the FinTech sector in China from the institutional knowledge to the technology base. These three events have been milestones for the Chinese economy in recent years and have enabled prosperity for SMEs in most industries. The changing landscape of firms also provided a consolidated customer base for the provision of financial services to SMEs. The overview of internet based economic activities will be offered as the emergence of FinTech is all dependent on the development of internet and the World Wide Web (WWW) and the ability of individuals and firms to access that in a robust and secure way.

3.2.1 Decriminalization of private enterprise

The decriminalization of private enterprise since 1970s liberated regional economy development although historically and politically, the private economy had been discouraged by the Chinese government. There was limited institutional support for the private sector due to the dominance of the Communist Regime and its ideology. Looking back to the history of private economy is crucial to understand the FinTech sector as it highlights the status of private loan providers as producer and customer of financial services.

Before the 1980s, there were very tough rules regarding illegal fundraising in China that prohibited firms and individuals from raising funds from multiple sources. Borrowers who breached this law were exposed to the danger of the death sentence (Lu, 2015). This situation did not alter until 1979 when the State Council of China launched a policy that recognised the importance of the private

economy for economic growth as a supplement to the communist or state-owned economy (Dana, 1999). Furthermore, the private economy was endorsed by the 13th Congress of the Chinese Communist Party (CCP) and the 1987 National People's Congress (NRP). After the NRP conference three types of enterprises were recognised in China. These were State Owned Enterprises (SOEs), Collective Owned Enterprise (COEs) and private enterprise. In 1998, more than eight million private enterprises were trading with international counterparts, which grew significantly compared to one million in 1980. It was indicative that the dynamism of China's private economy was robust (Clarke and Yu, 1998; Dana, 1999).

Village and Township Enterprises (VTEs) were recognised as the largest component of the non-state owned economy before private enterprises became part of the mainstream economy around 1984 (Liu, 2007; Feng, 2013). Enterprises then began to emerge with national government support, which shifted the economic focus from societal stability to economic growth. Individual households in rural China not only received land-use rights, but were allowed to possess equipment, employment contracts and factories. Despite having few talents and limited capital, those new forms of enterprise grew with great speed and agility, especially in Guangdong. These enterprises became large and some even became international manufacturers though the activity of making parts which were assembled in SOEs (Vogel, 1989; Xingyuan, Herrmann-Pillath and Guangwen, 2004). Their rapid growth contributed to the local tax base and gained full support from local government (World Bank, 2008). At their peak they

contributed about one third of GDP and more than 50% of industrial value added (Feng, 2008; Sparreboom and Duflos, 2012).

There are four characteristics of SMEs in China. First, some SMEs in China have grown rapidly in size due to continuous improvement and technological advancement (Dana, 1999; Chen, *et al.,* 2011; Katz, 2014). Second, after the reformation of government legislation in 2005 to benefit SMEs in China, small firms were excluded from conventional monopoly industries such as finance, healthcare, education, transportation and telecommunication (Takeuchi, 2011; Tian, 2015). Third, small firms form a large proportion of SMEs and lack skills and specialisations (Wang, 2012). Fourth, most small firms operate only in China and hire only Chinese employees. Those characteristics depict the homogenous image of small firms in China (Wang, Pei and Liu, 2014).

As China joined the WTO and expanded its foreign investment, small private enterprises contributed significantly to the Chinese economy for employment creation and tax generation, particularly as these businesses tended to be family run and organised in Guangdong. Small firms in China were excluded from a variety of public services such as finance and justice (Feng, 2015). For example, lenders are more willing to lend to the founders of the firms rather than lend to the business if the borrower is a qualified candidate (Tian, 2015). It is because banks are legally and financially insolvent but individual are not (Peng and Xiang, 2010; Gao, 2015). By lending to founders of the business, banks were exempted from the risk of defaulting because banks are always able to reclaim debt from people who hold an infinitive liability to a loan. As a result, the lenders, either informal personal loans or bank loans, will asked borrowers to commit personal loans as a

condition rather than for its business. In the event of a possible bankruptcy, it is likely that the creditors, if they are powerful enough, have some way of turning a default into a criminal issue (Li and Feng, 2008; Elston, Chen and Weidinger, 2016). Instead of facing an uncertain jail time, it is more convenient for them to run away (Lu, 2015). When small firms were excluded from conventional financial institutions, they turned into private or informal lenders to seek financial support.

That is how the small private firms in China were significantly excluded from the banking sector and their funding sources were scare except from three sources: individual gifts, overseas Chinese investment or contracts with state owned enterprises. Due to the openness policy in Guangdong and the geographical proximity to Hong Kong, small firms were particularly active in the southern regions of China. By the end of 1994, there were 45,000 small firms founded in Guangdong with 18.3 billion RMB investment, 600,000 employees, 7.4 billion RMB profit and 3.5 billion tax income, which created the highest records of small firms contribution in the nations' ranking (Poutziouris, Wang and Chan 2002). From 1994, Guangdong has always been a leading province among others in small firms' development. In 2015, Guangdong experienced a 19.6% growth in private investment, whilst other cities' investment growth was smaller, such as Beijing (-10.4%) and Shanghai (5.3%) (Ding, 2016). The advancement of the Guangdong private economy is regarded because of reduced government intervention, a large population and associated consumption and pathways to international markets (Vogel, 1989; Yeh, 2006; Yeh and Yang, 2013). This economic and historical background in Guangdong provides these places a foundation of prospect private economy and ideal condition to the FinTech sector.

3.2.2 Openness, Reform and Devolution

The emergence of the private economy accelerated the transaction between local producers and international dealers as well as services and international markets. This process, which was as associated with devolution, involved the cost of labour, assemblage, manufacturing and e-commerce, transformed economic the landscape of eastern China particularly in Guangdong. Because of the devolution, the banking sector has been empowered by an increase of potential customers, competition from overseas as well as deregulation.

The growth of business needs a healthy economy as well as a stable political base that monitors the actions of government to confiscate individual wealth. As economist have long realized, the absence of secure protection for the reward of effort deters investment and economic development (Eggertson, 1990; North, 1989, 1990; Olson, 1982; Williamson, 1994). However, government commitment to protect the stability and sustainability of the market often failed. This applies to policy makers in the government very often consider how political discretion might alter that policy in addition to the policy itself (Williamson, 1985, 1994; Weingast, 1995). For example, Roeder (1995) discussed the operation of the working constitution of the former Soviet Union opposed to its constitutions.

One of the pathway to protect economic rights was devolution, which was proved as a mechanism for protecting markets in China in the past decades. Devolution restricts economic policy makers by imposing limits on the discretion of government (Tiebout, 1956; Oates, 1972). The essence of devolution is that it provides a sustainable system of political decentralization. It requires an autonomous government at the regional level that is self-enforcing (Riker, 1964;

McKinnon, 1993; Montinola, Qian and Weingast, 1995). In contrast to market-preserving devolution, devolved territories have the power to make legislation relevant to the area.

The economic consequence of devolution was the introduction of competition among administrative units at the lower level of the national political and juristic system. As long as the capital and labour are allowed to be mobile, the resources will move between different geographies and jurisdictions from local firms and individuals (Hayek, 1945, 1960; Tiebout, 1956). The competition therefore encourages local government to attract resources from individuals and firms and to relocate their service to the home territory from somewhere else. As a result, local government decisions yield a diversity of public goods such as taxes, public goods, manners of officers etc. In addition, it reduces the level and pervasiveness of economic rent-seeking that might establish certain policies.

A form of devolution has been identified in the modern economic reform in Guangdong province in China. The central authority of China instituted a process of political decentralization that shifted some of its power to a certain province as a pilot that contributed to the economic and political success of the post-communist country. This process contributed the flourish of private enterprises in Guangdong in the 1980s and technology development in all industries including the FinTech sector in the 21st century.

The economic climate of China began growing in 1978 when the United States recognised China as a legitimate country with potential as a diplomatic partner (Vogel, 1989; Herrmann-Pillath, 2006). Financial and commodity exchanges

commenced between Hong Kong and Guangdong as economic marketization commenced. Although ideological conflict still existed, businesses started to revive in southern China with professional services, overseas commodities, and small amounts of investment through travelling, trade, and business (Feng, Ljungwall and He, 2014). Hong Kong merchants had superior advantages in doing business with China not only because of geographical proximity, but also through the existence of local networks with pre-immigration families from Guangdong province (Yeh, 2006). The increase of labour cost in 1979 encouraged Hong Kong businesses to pursue cheaper labour and Guangdong became a key relocation target. In the 1980s, salaries in Guangdong equalled 1/5 of the average Hong Kong salary (Vogel, 1989). More than two million Guangdong workers were employed by Hong Kong enterprises in Guangdong with many more working in local factories. In addition, Guangdong opened almost 100 port and loading points to facilitate international trade. Over two years, more than 200 million USD was earned by local business from foreign merchants. Apart from trade, 90% of foreign exchange was obtained from remittances between Hong Kong and Guangdong households (Vogel, 1989; Yi and Yeh, 2011).

To support Guangdong dealings with foreign investment, the PBOC approved the first foreign exchange to be established in Guangzhou while the Guangdong Court launched sessions intended to deal with economic dispute between local firms and employees and foreign enterprises. After the 1980s, cooperation between Hong Kong and Guangdong evolved from trading only to manufacturing plus, which has been labelled the “front shop end factory” model (Yeh and Xu, 2010; 2011). A survey conducted by the Federation of Hong Kong Industries identified that more

than 63,000 Hong Kong manufacturing companies have been created in Guangdong. 52% of Hong Kong companies, and 89.8% Hong Kong (HK) manufacturing firms had activates in Guangdong with an estimated 53,300 factories (Barbieri, Tommaso and Bonnini, 2012; HKTDC, 2013). Xu and Yeh (2012) observed the transformation in Guangdong from a simple processing workshop to a sophisticated manufacturing hub through partnership with Hong Kong and foreign companies in the late 20th century. As of 2012, Hong Kong is the largest investor in Guangdong province, accounting for 61.8% of Guangdong's total utilised foreign direct investment (FDI) (Yeh and Yang, 2012).

Local governors from there learnt how to use foreign capitals and resources to development local firms and economy. Most of this FDI of China was directed at the Pearl River District (PRD) in Guangdong. There are more than 500 enterprises from HK and Macao that have invested 4 billion GBP in Nansha, Guangzhou, which is planned to be a producer service orientated industrial special zone (World Bank, 2016). Guangdong is also proactively working with Hong Kong and Macao on financial innovation and internationalization through three new economic special zones. The origination of small firms in Guangdong led to an escalation in demand for credit which had not met been met by local financial institutions at that time. Those capacity of learning and interacting with private enterprises of local government also helped the FinTech emergence in Guangdong by sharing information and resources that would not necessary existed from the central government.

Apart from devolution and the empowerment of local government, the private economy and the FinTech sector has been greatly supported by the development

of internet communication technologies (ICT) in recent years, including both business to customers (B2C) and business to business (B2B) (Bryson, Daniels and Warf, 2004,). The Internet has increased accessibility to resources both for businesses and customers, which formed E-commerce and had significant influence on manufacture and service industry (*ibid*). E-commerce has significantly developed in China and transformed the landscape of the private economy.

3.2.3 E-Commerce and Information Service

In addition to financial and business quarters, the exchange of resources and services also accelerated the flow of knowledge and technology (Bryson, Daniels and Warf, 2004). Along with manufacturing and innovation capacity growth, Chinese enterprises and government also increased internet capacity and connectivity, which is the infrastructural property of FinTech sector. The concept of property has evolved with developments in technology and the creation of virtual assets such as data and information in the Internet age. Users of the Internet created their own data record through web browsing which has been largely commercialized by information service providers. Such virtual assets can be viewed as new types of property as they could be owned, processed, stored, erased and capitalised by all types of credit providers including FinTech firms.

The standardization of data and information that brought fungibility of private data as property and formality of loan contract to SMEs and individuals. It eliminated cost of transactions over evaluation, mobilization and utility of private properties. In addition, this process converted entrepreneur individuals into market agents that increased the valuation and exchange of local knowledge and goods (De Soto, p.

61, 2000). Last, those business agents formed as business networks that reinforce each other's property rights and protect the sub-formal contract system.

In the financial market in China, those privileged bankers and regulators provided Chinese banks the large database that to access borrowers' credibility exclusively with their bankers' club, but offered little incentives to capture fractional digital data that emerged and accumulated on the World Wide Web by the individuals and small firm customs. FinTech firms and the Internet Service Providers (ISPs), instead, created their financial arms with these dispersed information and digital assets on the web.

By the end of 2014, China had the largest cellular machine-to-machine (M2M) market with 73 million cellular connections, or 30% of the global total (GSMA, 2015). It is evident that Chinese operators and government recognises the potential of the Internet of Things (IoT) and smart phones as a gateway for the provision of public and private services. Chinese enterprises and policy makers are embracing theIoT by deploying 4G-LTE devices to everyday' liiving (GSMA, 2015). China has been the largest 4G market since the end of 2014. China Mobile is the largest 4G operator in the world with 300 million 4G connections together with other two operators in China. 805 million people in China have been using smart phones at the beginning of 2015, which accounts for 62% of the total population of users (Shin & Shim, 2015). It is forecast that 4G connections will break the 1 billion threshold in China in 5 years, while home banking will have 70% of the market (GSMA, 2015). These numbers indicate the progress of technological development as well as the formation of information infrastructure of FinTech firms along with the development of the Chinese economy.

Table 3.1 outlines competition relationships and characteristics of Internet service providers in China and highlights the domination of three Chinese service providers: Baidu, Alibaba and Tencent (BAT) (de Seta, 2015). Alibaba provides trading services to SME sellers and buyers; Tencent provides communication services between individuals; and Baidu is search and advertisement provider for small firms. They defeated international players in their specialisation, such as Ebay, Facebook and Google, and established dominant business models in the market.

Table 3.1 Comparison of BAT in 2010

ISPs	Baidu	Alibaba	Tencent
Location	Beijing	Zhejiang (near Shanghai)	Guangdong
Specialization	Search Engine	E-commerce	SNS
Market Share	72.8%	84.4%	87.6%
Place of IPO	Nasdaq	Hong Kong Exchange & NYSE	Hong Kong Exchange
Opponent	Google	E-bay/ Amazon	Microsoft/ Facebook
Active Users (Month)	500 million	300 million	469 million
Value	$ 30.9 billion	$ 59.7 billion	$ 66.1 billion
Founded	2000	1999	1998
Revenue	$ 5.2 billion	$ 5.5 billion	$ 9.7 billion
Other products			
Searching	Baidu (main)	Etao	Sogou
E-commerce	Baidu E-shopping	Taobao & Tmall (main)	DJ.com
Social Network	Tieba	Weibo & Line	WeChat & QQ (main)

Source: Zhong (2012); Zhang (2012); (Shin and Shim, 2015)

The growth of BAT and the FinTech firms is also dependent on the prevalence of smart devices. Giant Internet Service Providers (ISP) formed in the past decades have disrupted other industries with prevalent smartphone coverage and an absence of regulation. Services such as payment, asset management, crowdfunding, transportation and entertainment (Xia, 2016) have been developed. In 2016, with the massive development in all sectors, BAT represents 70% of the value of the Chinese technology sector (McKinsey, 2016). Their location to some extent correlates with the three centres of FinTech sectors in China - Beijing, Shanghai and Guangdong.

BAT and other FinTech firms gained cash from the e-commerce consumers and embedded advertisements. The millennials are the main group of customers involved with online consumption (McKinsey, 2016). They have adapted to using multiple electronic devices and are familiar with multiple service providers and their offers. Research undertaken on wealthy cities has identified that 75% of customers in these areas relied on smart devices to consume online (Zhang, 2015). BAT generated massive orders for SMEs by linking sellers and buyers globally, which generated credit score from e-wallets of potential customers. Therefore, the boom in e-commerce in China also led to the development of a flourishing mobile payment system and social networks that are accessed via mobile devices.

Another critical information source for BAT and FinTech firms is online communication applications. In addition to messages and calls, BAT optimize cost structures by providing free calling and video for users, which substituted conventional telecommunication operators. Their frequent online activities, such as e-mails, voice messages, instant gaming, bulletin board systems (BBS), online

forums and chatting, has led to the establishment of a strong virtual network and also comprehensive datasets based on consumer's virtual personal networks (You, et al., 2015). This quantified data further contributed to the capacity of online services provision. BAT built up social networks beyond their ordinary social relationships and expanded these networks to develop additional economic activities.

Apart from their conventional services, BAT and FinTech firms were keen to integrate new functions into their business models before their customers were exploited by other providers of internet-enabled services. Those new services include taxis, movies, games, bill management, investment and even donations. In order to integrate those new services, BAT and FinTech firms have had to build payment elements in their services so that customers can be satisfied with their user experience. Unfortunately, China's financial infrastructure was unable to support FinTech firms' ambition. They has become an additional approach towards inclusive financial services that provided to individuals and SMEs via the application of technology. With their leadership, thousands of technology start-ups emerged and created inclusive financial networks under the umbrella and BAT and conventional financial institutions. This mechanism of inclusive financial networks will be further explored in the following section.

3.2.4 Inclusive Financial Networks

Chinese banks have been a significant advocator for financial inclusion since 2005 (Wu, 2016). In the past 11 years, significant effort has been made to improve accessibility to a range of financial services for both individuals and small and medium enterprises (SMEs). According to the World Bank (2015), the coverage

rate of bank accounts in China has grown from 64% to 79%. By the end of 2014, rural financial institutions in China established 2.731 billion personal bank accounts (Jiao and Chen, 2016) for basic money transaction purposes. Furthermore, there were 3.06 accounts per capita and 1.95 debit cards per capita (Jiao and Chen, 2016). There were also 920,000 migrant bank card service points built by the government to help farmers draw their money in rural areas (Lu, 2016). There are at least 17 kinds of financial subsidies for rural residents, especially for elderly people and the disabled. For example, rural households can receive 50 Renminbi (RMB) and people over 80 years old can receive 100RMB through institutions called rural households support hubs that were established by the Central Bank of China (PBOC) (Jiao and Chen, 2016). Now there are more than 700,000 service hubs in rural areas for financial support (*ibid*.).

SMEs were neglected by policy makers and other actors concerned with financial inclusion. At the end of 2014, a total of 405,000 SMEs obtained bank loans, while at the same time there were 7.85 million SMEs in China (Tian, 2013). The outstanding portfolio of SMEs was 8.9 trillion RMB (Jiao and Chen, 2016), while similarly, there was 132.3 trillion RMB in bank deposits (PBOC, 2014). The statistics indicated that, on average, only 5% of Chinese SMEs had access to financial services provided by conventional financial institutions, and only 6% funding source from banks supported SMEs (Lu, 2016). The accessibility of banking loans for SMEs was significantly uneven: 61.8% of SMEs are located in eastern China (Tian, 2015). This is despite SMEs accounting for 60% of GDP, 70% of innovation outputs, contributing 50% of tax revenue and 80% of employment in China (Li, 2016).

In China, before the emergence of FinTech firms, financial inclusion has been driven by government through banking institutions and financial regulators, such as the People's Bank of China (PBOC), the Finance Affairs Office (FAO) and the China Banking Regulatory Commission (CBRC). From the service perspective, inclusive financial services have been mainly provided as credit. As most of the banks were either owned or managed by the government, the financial inclusion strategy was affected by changes of government leadership. The most recent Chinese leadership transition was in 2012, which brought new and increasing consideration regarding financial inclusion as a significant political and economic strategy (Wang, Kong and Zhang, 2014). The focus on financial inclusion echoes debates and discussions regarding national reform objectives, such as banking reform, the development of the digital economy and to increase social inclusion (Yang, 2012). China's new leaders implemented actions intended to reshape banking institutions' ownership structure and service processes. Private equity was historically allowed to establish banks, but now technology service providers have been encouraged to participate in the process of reform (Wang, Kong and Zhang, 2014). Consequently, there have been eight private local banks, 4,600 peer-to-peer lenders and 8,810 micro-lending companies established mainly by private capital up to July 2016 (PBOC, 2016; lingyicaijing, 2016). The landscape of financial inclusion has been steadily transformed, but there remain significant gaps in the provision of finance to SMEs.

Intervention is defined as the effective administrative implementation of economic decisions by the Government. China has a significant legacy of economic intervention as a socialist state. In financial services, intervention existed in four

forms before 1978 in the Chinese economy. First, private finance was regarded as illegal and prohibited from the social system (Tsai, 2004). Second, loans were arranged in accordance with production planning for national scale manufacturing (PBOC, 2010). Third, financial inclusion was organised as a social movement led directly by the central government, through initiatives such as the Eight-Seven Poverty Alleviation Movement in 1987 and the San Nong Reform Program in 1993 (Park and Ren, 2001). Fourth, non-governmental organisations were strictly suppressed in terms of funding sources, legal status and geographical scale (Sparreboom and Duflos, 2012). It is acknowledged that government intervention did to some extent support economic growth for the nation (Herrmann-Pillath, 2013; Feng, 2015). However, it compromised the possibilities of social inclusion and financial sustainability in marginalised areas.

The Chinese government realised the limitations of centralization and the benefits of pluralistic and regional effort in economic growth and financial inclusion in previous reforms. The shift of the administrative regime did not appear until comprehensive functions of the banking system were formed. From 1993 onwards, the government undertook a series of reforms aimed at improving the efficiency of financial intermediaries (Xu, 2003; He, 2010). The transformation was undertaken through two approaches: first, the central government formed a new department as financial regulators and split their duties and responsibilities; second, the financial regulators issued guidance and regulations to mandate banking development. Along with increases in the number of financial institutions and types of financial services, the regulatory system also became more sophisticated.

Figure 3.1 illustrates the evolution of financial regulators along with their supervisory scope in financial services. The Central Bank of China was not an independent policy maker until its separation from the National Treasury Committee in 1980 (Dipchand, Zhang and Ma, 1994; PBOC, 2010). Then the PBOC became increasingly focused on monetary policy after the CBRC were created and designed in responsible for banking. The remaining National Treasury became the Minister of Finance whose spin-offs, Central Huijin and China Investment Corporation (CIC), owned and invested the equities of banks and asset management firms on behalf of the state (Kamarul, 1997). The State also initiated four asset management companies (AMCs) in dealing with non-performing assets of banks in 1998 in the transformation of commercial banks (ADB, 2014).

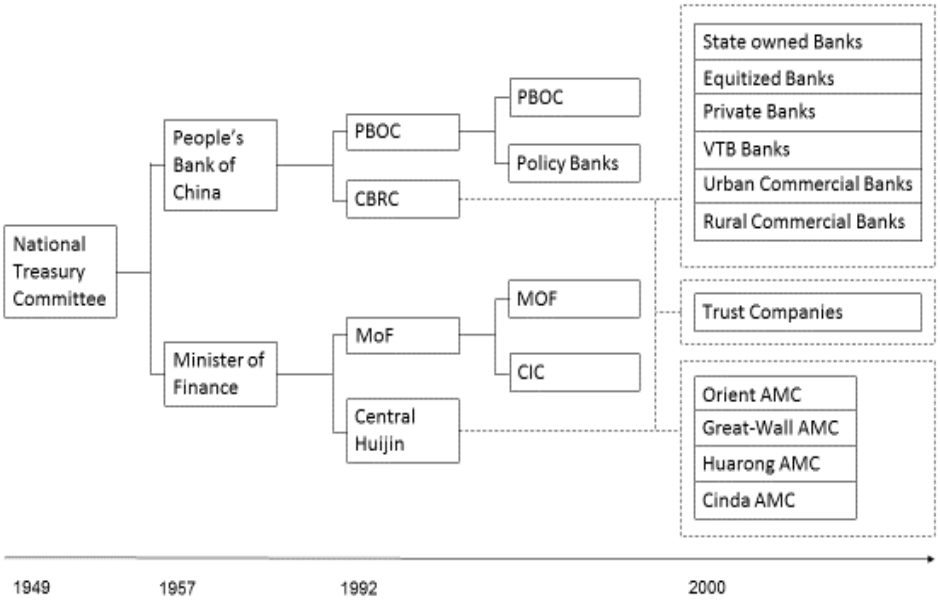


Figure 3.1 Evolution of the financial system

Source: PBOC (2010)

The marketization of commercial banks has accelerated since 1994, when China became a member state of the World Trade Organization (WTO) (Peng and Xiang

，2010). The state owned banks introduced international investors and regional banks were approved to be equitized by foreign and private capital (Lin, 2010). In 1995, a provincial government was approved to set up local banks through provincial fiscal budgets and local business investment (Tian, 2015). In addition, Village and Township Banks (VTB) were approved to be set up by established banks, but would only be located at marginalised townships and villages (PBOC, 2010). Urban and Rural Cooperative banks were the remaining entities of credit cooperatives, which had substantial investment from local government and business but remained administrated by national authorities (Dipchand, Zhang and Ma, 1994, Loubere, and Zhang, 2015). Private Banks were finally permitted to be established as a pilot initiative from 2014 but a very limited quota was placed on this process (ifeng, 2016).

Each type of bank has a distinct position in the market. State owned banks and equitized banks expand nationwide and compete in larger cities (Yeung, He and Liu, 2012). The role of the head-offices is for policy creation and implementation as well as fundraising. Provincial branches were in charge of the management of loans and strategies for sub-branches that are located in cities within the province. Normally, head-offices decide the guidance for lending, whereas local branches explore the market with coordination from regional branches (Yeung, 2009a). CBRC and PBOC establish regional branches as well supervising local banking affairs. Although regional governments were allowed to establish banks with central bank approval, they were not able to supervise local banks. The state owned banks have an established commitment to serve SMEs through the provision of credit, although the definition of SME varies between institutions.

Nevertheless, SME loan provision from state owned banks evidently excluded micro-businesses and the self-employed due to strict lending requirements (Shi, 2011). One important reason is that the banks required business owners to take out personal unlimited liability for business loans (*ibid*).

Another important banking institution in China are Trust Companies (TCs). Their businesses existed before the foundation of the current Chinese state, but were sustained due to their ideology being compatible with that of the communist government. They were revived in 1980 when the central government attempted to use them as a channel to raise fund for banks from foreign investors. After this, they became regulated by the China Banking Regulatory Commission (CBRC), which is the same regulator for banks in China (Dipchand, Zhang and Ma, 1994; Martin, 2012; Tsai, 2015). This regulation legitimated trust companies as assignees of securitization products of credit assets, yet there remains some limitations to engage with SMEs directly. For instance, Trust Companies are not allowed to openly publicise their products through advertising (Yang, 2012a; China Trustee Association, 2013). Such restrictions enabled close cooperation between trust companies and banks as they are substitutes for each other for funding sources and deal originators.

It is worthwhile to explore the cooperation between banks and trust companies as a distinctive phenomenon of the Chinese financial system. Historically banks were designed as lending institutions with a domestic funding source. Due to a lack of deposits and harsh regulation in the earlier years, banks were not capable of lending and were disabled as regards the supporting of economic growth. The TC was therefore created in 1979 to support bank lending (China Trustee Association

，2013). In the beginning, both central and local government were allowed to initiate TCs and to invest in multiple areas. This process of path creation determined institutional complementarity (Yang, 2012b; China Trust Industry Association, 2013) for institutions in the market. These differences are summarised in Table 3.2. Trust companies were allowed to invest in every asset category, while banks were not allowed to invest in the stock market and industries, although banks are allowed to lend. In fact, the TC is the most comprehensive institution in the financial market by function, but it is restrained by the limitation on geography (China Trust Industry Association, 2013). Given the difference in the financial market, a trust company could be viewed as a hybrid between a wealth management firm and a development bank.

Table 3.2 Functionalities of Financial Institutions in China

Functionalities	Trust	Security	Mutual Fund	Insurance	Bank
Money	Yes	Yes	Yes	Yes	Yes
Bond	Yes	Yes	Yes	Yes	Yes
Stock	Yes	Yes	Yes	Yes	No
Credit	Yes	No	No	No	Yes
Industry	Yes	Maybe	No	Maybe	No

Source: China Trust Industry Association, 2013; Yang and Zhou, 2012

Table 3.2 shows that Trust Companies and Banks are the only two financial institutions that have been granted for banking business within Chinese regulatory framework. To further enhance their capacity to serve SMEs, China employed management consultancy firms from Singapore and Germany to improve the provision of financial services to SMEs. Two different approaches were introduced by the Chinese banks to expand the provision of financial services to SMEs.

Unfortunately, those techniques were not successfully implemented due to knowledge gaps and disagreed approach disagreements between bank head-offices, the capabilities of local branches, and the focus on policies which did not always favour SMEs. However, the consultation remarked an aged of technology enabled lending towards SME customers. Although the technology did not transferred directly to the FinTech firms in modern age, it inspired banks and technology developers' alternative approaches in credit provision, which has significant impact on the FinTech sector. The next section will explore the banking sector in China and their evolution with technology development.

3.3 Evolution of Banking System

Three significant changes occurred at a regional level as a result of the devolution experiment. First, a large number of state-owned enterprises were transferred to the local government from the central government. In 1978, the share of output of state owned enterprise by the central government was less than one-half of the national total. By 1985, this number had risen by only 20%. Second, a new fiscal revenue-sharing system between two layers of government was introduced in 1994. The new fiscal arrangements provided strong incentive for local governors to consider their political advancement through local economic prosperity. The Chinese style of devolution in Guangdong produced decriminalisation of entrepreneurship at the local level and growing establishment of enterprises in other regions (Byrd and Lin, 1990; Montinola, Qian and Weingast, 1995; Nee, 1992). The toleration of the central government brought incentives to local governors to foster regional economic development.

As a result of devolution to the regions and innovation in products and financial services, clusters of private enterprises have been formed in eastern coastal cities of China for the geographical concentration of resources and firms (Bryson, Daniels and Warf, 2004). The frequent exchange of resources and knowledge between home firms and overseas trade partners formed financial and business quarters and institutions. A numbers of banks were established and existing banks adjusted their lending strategies to include a strategic focus on the growth of SMEs. The development of the Chinese banking system involved three processes: adaptation, innovation and regulation. In this section, three approaches to understanding Chinese providers of financial services are explored.

One of the conclusion from this section is to draw on the impact of regulation and deregulation on the evolution of financial service provision in China. This section suggests that FinTech firms emerged in multiple regions in China and gained prevalence in individual and SME credit provision due to the absence of centralised regulations and incentives from regional authorities. It also optimized the accessibility of finance for the SMEs when the property and contract system was imperfect. In this section, three stages of economic development in China will be outlined to understand the evolution of China’s customer base for financial inclusion and the development of FinTech.

3.3.1 Adaptation

Adaptation refers to alterations in the banking sector in response to technological development. Major changes were made by the banks, but they did not focus on providing services to SMEs. Digitalization and computerization brought new lending methods to banks which could be used to provide financial services to SMEs, as well as challenges relating to the of management of technologies as they were applied to the banking sector. Developments in information services reshaped banking services and transformed financial centres into nodes of global financial networks, or integrated local financial hubs into the global financial system. In addition, upgrading equipment, devices and information flows required Chinese banks to adapt to the new information technology. The consequence of adaptation is that banks became more interconnected and efficient, but their role in providing financial services to SMEs remained very restricted; the mainstream state owned banks predominantly lend to SOEs. The reinforcement of technology within the banking system was for the same purpose.

There have been two areas where Chinese banks invested significantly to modernise facilities and services. First, China had open and transparent policies towards the provision of branchless banking services. Second, China actively engaged with the international banking sector by developing cross-border treaties and service networks. The CGAP's 2012 study (Sparreboom and Duflos 2012) on financial inclusion in China reported a significant unmet demand for credit amongst the rural poor and SMEs. However, the application of FinTech has been led by national financial institutions neglecting the need from SMEs.

For example, in the 1970s, PBOC introduced enterprise level computers from France and Japan to replace an Old Russian system. In the late 1980s, computers were allocated to local branches by leading state owned banks to deal with commercial and personal banking (Ji, 2007; Li, Chen and Xu, 2015). The PBOC created a new department to supervise the implementation of technology across layers of the banking system as well as the standardization of the information portal between banks. In addition, in 1993, the PBOC launched the “Golden Card Project”, which aimed to establish a nationwide electronic payment system to serve both individuals and enterprises (Worthington, 2005; Wang, 2007). In 1991, the Financial Standardization Committee was founded to coordinate financial institutions to integrate and centralize their information technology systems (Liu, 2013). The rapid development of banking technology demonstrated the national government was the driving force of FinTech until 2002 when banking institutions launched their own FinTech spin-offs, such as China Union Pay (CUP), Cross-border Inter-bank Payment System (CIPS) and China National Advanced Payment System (CNAPS), to deliver the FinTech service.

China Union Pay (CUP) remarked a Chinese version nationwide electronic payments network which compete with foreign credit card service provider such as Visa and MasterCard. As the first generation of branchless banking, CUP worked with successful firms to encourage the development of FinTech enabled payment system for individuals and businesses. Within the affiliation of bank branches, CUP overcame its experienced competitors and occupied significant account in the payment market. To 2012, CUP provided more than 15 million point-of-sale (POS) terminals and accelerated the acceptance of cashless payment in

China. In addition, Chinese banks issued more than 3 billion debit card to September 2012 which can be used in 135 counties (CGAP, 2014). In response to the FinTech emergence, CUP launched its own digital wallet embedded on mobile system with a near-field communication (NFC) function. In rural areas, CUP supports Rural Credit Cooperatives (RCC) and incorporates their services with SIM card equipment (*ibid*). With backup from banking system, CUP was able to employ FinTech promptly according to the advancement of technology and adaptation of the market and banking customers. Similar to CUP, in 2015, China built an alternative international payment network called China's Cross-border Inter-bank Payment System (CIPS) and China National Advanced Payment System (CNAPS) to compete with Society for Worldwide Interbank Financial Telecommunication (SWIFT) for FinTech enabled transaction service between international banks (Li, Chen and Xu, 2015). However, CUP and other spin-off FinTech service providers within the banking sector could not fully leverage their service to the customers who have been already excluded to the banks.

In particular, SMEs have remained largely excluded from the mainstream Chinese financial system. For example, the PBOC in Guangzhou criticized local banks that were applying too many resources to the provision of mobile banking services to high profile customers, while neglected the security of the network and not dealing with queues in their branches. Similar concerns existed regarding information security and the centralization of data and information (Hu, 2014). More innovation in the banking institutions were mandated by the regulators for the SMEs. Two innovative lending methods have been introduced from foreign banks to China and

implemented on local level of branches. The next subsection will explore the new lending methods for SMEs and individuals.

FinTech has also been implemented outside the banking system by the money service providers and telecommunication companies. ICT was introduced as part of this process including point-of-sale (POS) terminals and access to financial services by using mobile phones. In 2011, more than 500,000 ATMs were located nationwide by PBOC that were capable of issuing cash, debit card payments and money transfers (CGAP, 2014). By 2012, more than 223 private payment providers were granted licences by the PBOC as third party service providers of financial services (ADB, 2014). Those third party payment firms became important enablers of FinTech firms by bridging money transfer from bank account to the mobile wallet.

Particularly in Guangdong, the coverage of cashless payment increased to 72% by 2004 (*ibid*.). The branchless banking and digital payment space includes banks, mobile network operators and third-party payment providers. In 1995, the first Internet Bank was founded in Guangdong by a Shenzhen based equitized bank. In 2006, the PBOC established a Credit Reference System for individuals and businesses (Hu, 2014). The entire financial infrastructure was designed and developed by the national government rather than in an inclusive and collaborative framework with private service providers.

3.3.2 Innovation

Since 2008, Chinese banks have explored how to increase the efficiency of the financial service sector for both small companies and large corporations. This

optimization was based on an attempt to identify best practice in Germany and Singapore. The Singaporean approach was termed a credit factory, which was developed by Temasek Holding. The other approach was developed by IPC Consulting, Germany. Beijing and Guangdong were chosen as typical places to launch pilots, both of which eventually succeeded (Yeung, 2009b; Qu, 2010). In this sub-section both methods will be reviewed, compared and contrasted to understand banks' efforts to deliver services to SMEs. In both approach FinTech has been employed in the lending process of banks to identify customers and their crediability.

The Credit Factory Approach was introduced from Singapore as a business solution for banks to provide SMEs with credit. It was tailored for big banks and prioritises centralised decision making rather than localised branch judgments. This method simplified information analysis by employing a standardized data collection process and format. This approach divides the SME lending process into a set of standard procedures: customer attraction, an interview, loan application, due diligence, loan assessment, approval, and disbursement (ADB, 2014). This standardization included the development of a credit operations manual and an internal rating manual which helped loan officers in big banks to appraise loan applications using FinTech enabled device and templates. The appraisal process was expected to be completed by a loan officer in 10-30 minutes on average plus one day of due diligence and a field visit (*ibid*). The large banks had bargaining power in acquiring soft data from various sources, including insiders, industry associations, and upstream and downstream clients in the value chain, which enabled the banking system to make decisions. Normally the system was

designed and maintained by the Head-offices but used by the provincial branches. Two reporting systems have been embedded within the decision making process which assisted the Head-office and SME lending divisions to monitor tasks and indicators.

A scoring card approach is different to empowering loan officers in bank branches to make decisions that reflect the local economy. The scoring card model is centred on evaluating the capacity and willingness of borrowers to repay loans based on loan officers' experiences and judgement. In contrast, the credit factory approach builds credit streamlines in provincial branches and the scoring card approach emphasis the need for loan officers to understand borrowers' backgrounds. Loan officers are expected to propose cash flow statements for borrowers when they do not have accounting systems or manual account books. For example, a loan officer needs to examine the formal and informal income and expenditure of a borrower in every day practice to calculate the cash flow from daily observation. A good loan officer needs to have a high level of interpersonal skills that can build personal relationships with borrowers and cooperate with other loan officers to make collective decisions.

Apart from empowering loan officers, the score card approach also requires local bank branches to set up a reviewing committee to manage the loan decision making process. After a decision has been made, the lending committee monitors the repayment of each instalment and arranges follow up visits if necessary. The credit committee is also an important internal control mechanism that is operated collectively by loan officers and branch managers to check the accuracy of the primary data provided by loan officers and to review their moral hazard problems.

This mechanism is critical for knowledge transfer from experienced loan officers to new staff.

Both approach were accepted by Chinese banks and increased the possibility of lending to SMEs as consequences. Table 3.3 below compares and contrasts the differences between the score card approach and the credit factory approach in four aspects. A distinguishing feature of both was the capacity of using technology in the banking services well served the SME lending. Particularly, the innovation enabled equitized banks and regional banks to adopt effective ways in dealing with small business and to secure competitiveness through local knowledge based decision making. Compared with local banks which relied on local officers and their relationship of customers as local knowledge, big banks emphasized computer supported decision making where local staff managed the data format and input through training and manuals. Similarly, however, both approaches emphasise the importance of regional branches and FinTech.

Table 3.3 Lending Method Comparison and FinTech Application

	SCORING CARD	CREDIT FACTORY
Actor	People	Computer
Location	Local	Central
Knowledge base	Interpersonal	Computational
Driver	Small and Local banks	Big Banks
FinTech Application	Record the visit of loan officers; Trace borrowers movement;	Calculate Cash Flow Template Forming

Source: Author (2015)

However, there was no radical changes on the landscape activities of banks. Several challenges remains for banks to engage the SMEs due to the limited number of branches, the limitation of bank outreach capacity and the employment

quota on loan officers. Many operational procedures were required approval from the banking regulatory body if banks intend to downscale their lending activities. There had been repetitive actions for building and closing branches that mandated by the regeulators which was not consistent nor systematic.

Table 3.4 below summarised the timeline of regulation change on the geography of bank branches. It illustrates the evolution of regulation on the physical extension of bank branches. The regulators applied regulations to control and limited service digitalization and the banks therefore could not drive or develop digital innovation and differentiation but relied heavily on face-to-face interactions with their clients via their established branch network (Zhang, 2011; Jiao, 2012; Yeung, He and Zhang (2015). The interviews and associated desk research identified that a major problem behind financial exclusion is the limited number of branches held by the smaller banks. The code remarks the date of issuance of the regulation and the with sequence number from a specific authorities. The directives were issued by the regulators and over verbal mandate of regulators.

Table 3.4 Regulations related to Bank Expansion

Code	Interpretation	Impact
CBRC [2006] No.12	Requirement of UCBs to establish spinoffs in other provinces	UCBs were allowed to go to other provinces from its origin place.
CBRC [2007] No. 79	Equitized and regional bank were allowed to establish branches in township area with conditions	Further merits in encouraging banks expand and scale.
CBRC [2009] No. 22	Expansion control by capital adequacy and provision ratio;	Risk control in banks expansion
CBRC [2009] No. 143	Expansion quota was removed within registered province;	Expansion was encouraged within a region;
Qishan's Speech [2011]	Regional banks should not go everywhere without application;	Signalised intervention to bank expansion movement;
CBRC [2013] No.51	Banks were only allowed to move within original province;	Bank expansion was interrupted and depressed;
CBRC [2013] No. 152	No more than two new sub-branches in single city was allowed as expansion;	Further depression of expansion movement;
CBRC [2013] No. 277	Any forms of bank extension should be registered and approved before operation;	Prohibition and depression to new forms of expansion of banks to communities;

Source: CBRC (2014)

Notes: Qishan is a senior member of Chinese Communist Party (CCP) who was leading Economic and Finance Working Group of CCP

The difference in the distribution of branches reflected another disadvantages of the provision of loan finance to individual and SMEs from bank branches. FinTech enabled lending methods and payment facilities increased the capacity of banks in delivering loans to those clients, yet the uncertainty of delivery came from the regulatory level. A safer option for banks still to work with SOEs with controlled human capacity rather than private firms that needed more resources to explore. Banks set up tens of thousands of local branches in urban areas, yet their

branches had limited capacity to obtain local knowledge due to a centralised control system. The centralized banking administration system and FinTech management routines prevented the provincial government from intervening with banking issues, but also excluded the possibilities that the local government and other actors could work to deal with these banking problems.

Apart from the concerns of branches, banking regulators had other policy instruments to control the risks, which were not designed to help the SME lending. The next subsection will assess those policies and regulations which shed lights on business environment of banks and FinTech enabled lending services in China.

3.3.3 Regulation

The international banking community has been increasingly embracing regulatory and other policy measures since the financial crisis of 2008 (Mullineux, 2015a). The International Monetary Fund (IMF) and the Bank for International Settlements (BIS) have proposed micro and macro prudential measurement for assisting banks to better build financial resilience. China has become a member state that implemented those measures in its financial system including banking, payment, insurance and technology implementation. In spite of financial scalability, not all the international measures were favourable to SMEs.

For example, the Basel-III requirements were not fully supportive of SME financing from a banking perspective. The Basel accords might incentivise banks to provide SME lending by adjusting the risk-weighted ratio against SMEs (Chaudhry, Mullineux and Agarwal, 2015), the risk-weighted capital adequacy requirements might further be in favour of government and bank capital rather than lending to

SMEs. The Liquidity Coverage Ratio initiated by CBRC outlined below illustrates the different weight placed against different assets by Chinese banking authorities. It clearly explained that except for profiteering, banks were less regulated in interbank lending practice through CBRC regulations (Hu and Lei, 2012; Yazar, 2015), which suggested that the regulators presumed lending to banks was safer than lending to SMEs. It echoed the regulatory directives from CBRC on risk levels of funding utilization and preference of low risk assets that were defined by regulators rather than bankers. Table 3.5 below provides the details of these regulation preferences.

Table 3.5 Liquidity Coverage Ratio in Commercial Banks in China

Name of asset	Ratio of Liquidity Coverage	Annual Expected Yield
Treasure Bond	0%	>3.5%
Interbank loans	20-25%	Floatable
SME loans	75%	>9%
Corporate loans	100%	>6%

Source: (CBRC, 2012)

Another type of international measure is the international five-category loan classification system. The five-categories are: Pass, Special Mention, Substandard, Doubtful and Loss. China introduced this system in 1994 and implemented this in state owned banks and equitized banks. According to the definition, "Pass" indicates that borrowers are able to conduct the obligation in the contracts and it is certain that they are able to repay the principal and interest of loans fully and timely. "Special-mention" means that borrowers have potential reasons to repay their loans although there is no evidence at present. "Substandard" means that it is evident that there are problems with the repayment capacity of borrowers. Lenders need to take action to increase the

safety of loans in case the current obligation breaks down. "Doubtful" indicates that borrowers are highly likely to default both the principle and the interest and emergent actions are needed to alleviate the loss. "Loss" means that a default has occurred and there is little possibility to collect the full principle and interest. Reclassifying loans between types was calculated by performing days and types of loan. The calculation also varied by the types of risk measurement which are associated with loan types. For example pledge-based loans are regarded to be safer than credit loans. The ranking of safety from high to low are; pledged, collateral, guaranteed, and credit. Table 3.6 summarises the five-category classifications and their implementation to SMEs.

Table 3.6 Five Category Classification

Five Category	Credit	Guarantee	Collateral	Pledge
Performing Days	Pass	Pass	Pass	Pass
1-30 Days	Special mention	Pass	Pass	Pass
31-90 Days	Substandard	Special mention	Special mention	Pass
91-180 Days	Doubtful	Substandard	Special Mention	Special Mention
181-360 Days	Doubtful	Doubtful	Substandard	Substandard
Over 361 Days	Loss	Loss	Doubtful	Doubtful

Source: PBOC (2001)

This classification took the same account of SME borrowers as large corporate borrowers, which inevitably caused difficulties for small firms and local government, particularly in 2007 when the new methods of classifying loan types

were introduced after CBRC was separated from the PBOC. Although each bank adopted its own risk classification from 9 tiers to 24 tiers (Kamarul, 1997; Feng, 2006), they also included national standardization. The introduction of a five-category classification with renewal loans classified as “Special Mention” (Feng, 2006) further required banks to take collateral or pledges and to increase loss provision to renew a loan for working capital. For small firms who were seeking to renew a current loan, this regulation provided the banks with the right to suspend the renewal of the loan at any time. When a renewal request was rejected, an SME borrower had limited opportunity to obtain a replacement loan as this would have to be supported by sufficient collateral.

The regulation on banks had two results. First, it depressed economic activity in regional level of China and pushed the local government to attract funding sources for the local business themselves. Second, it inevitably required alternative source of funding to SMEs and individuals. FinTech enabled loan providers therefore entered the market at this time, which were particularly at the regional level. The next two sections will introduce those alternative and additional funding of SMEs with the constrained provision of banking activities.

Guangdong banks took the lead in China in implementing the five-category loan classification system in 1999. These experiments made Guangdong the birthplace and technique portal of modern credit analysis in China, but also brought difficulties to local SME borrowers. The experiment showed that the non-performing loan rate increased by 20% and there was a reduction in the release of additional loans (Cheng, 2004). Although local government has the resources

to invest in urban commercial banks to issue new loans, they do not have authority to mandate their businesses. The PBOC and CBRC have absolute authority in supervising bank practices at the local level. For example, although China's commercial banks, both the national and the regional ones, share a common governance system, the senior members of banks have to be appointed by CBRC in accordance with ranks in the government's hierarchy, rather than a board of directors consisting of local shareholders. In addition to the staff appointment, the banks were administrated by central government through credit limits, interest rates and even loan types. Therefore, a regional inclusive finance system has been formed consisting of central and local regulators as well as national and regional lenders. The actors and drivers with different levels of geographical embeddedness interact with each other and contributed to a mutually dependent lending network. In the next section, the categories of local lending actors will be explored further.

3.4 Regional Financial Ecosystem

The relationship between banks and local government is critical for understanding financial inclusion and FinTech service in China. As it has revealed above, financial exclusion in China is not only an insitutional challenge, but a political dilemma and an organizational problem. Before conducting in-depth analysis on the FinTech service at the regional level, it would be useful to outline the structure of financial system in China and highlight the position of FinTech services along with other traditional financial institutions.

Table 3.7 outlines the structure of actors and regulators at the regional level in China. Banks are dominant players in the credit market, which were normally

considered first by SMEs (Tsai, 2015). Local lenders, such as Micro-Lending Companies (MLCs), Guarantee Companies (GCs) and Regional Equity Exchange, are also active at a regional level and in informal sectors. NGOs and cooperatives are marginalised from mainstream regulated financial activities. In addition to PBOC and CBRC, the other financial regulators in insurance (CIRC) and securities (CSRC) also set local chapters at the provincial level and in cities. Each regulator is working separately with little cooperation, generating a dispersed financial service providers at the regional level.

FinTech had not been regulated properly either by the national regulators or regional authorities before the completion of data collections of this thesis in February 2014. There were two types of FinTech services emerged in China which were peer-to-peer lending and equity crowdfunding. Apart from those, third party payment service and credit bureau for individuals and firms were quite popular. Nevertheless payment and credit bureau have been regulated by the PBOC as a conventional financial intermediaries.

This section will explore the regional financial system as a background of FinTech services emerged and developed. By examining regulation, funding sources, and credit information infrastructure, this section will explain how banks work in regional area and their relationship with local regulators, loan finance providers. FinTech firms were able to emerge because of the weakness of financial infrastructure at the regional level and the demand of financial services from the local small firms and individuals. In addition, FinTech firms played the role as coordinator between conventional financial institutions and professional business service providers in the region with the capital flow and information disseminate.

Table 3.7 Financial System in China

Type of finance service	Sector	Institution	Regulator
National Regulated Financial Institutions	Securities	National Equity Exchange	China Securities Regulatory Commission (CSRC)
		Financial Leasing Companies	
		Securities Companies	
	Banking Corporations	Large State Owned Commercial Banks	China Banking Regulatory Commission (CBRC)
		Second Tier Equitized Commercial Banks	
		Regional Banks	
		Trust Companies	
	Insurance	Insurance Companies	China Insurance Regulatory Commission (CIRC)
	Payment (FinTech)	Union-Pay	People's Bank of China (PBOC)
		Third Party Payment	
	Credit Reference (FinTech)	Central Bank	
		Private Credit Rating	
Regional Regulated Finance Institutions	Non-Deposit Financial Institutions	Micro-lending companies	Provincial Government
		Guarantee Companies	
		Pawnshop	
		Regional Equity Exchange	
FinTech Service	Debt Originators	Peer to Peer Lenders	None
	Equity Originators	Crowd-funders	
		Digital Assets Managers	

Source: Author (2016)

3.4.1 Weakening Local Lending Network

Local authorities were deemed to support regional economic growth, yet they did not have power to intervene the decision making of financial institutions for local SMEs. Neither were they capable to support local financial service providers. Technically, they had created financial arms to empower local state owned enterprises for employment purpose, yet little had they done for the local private enterprises and private lenders. The biased focus and asymmetric power on local authorities resulted enormous credit gap among local lending networks and helped FinTech firms to fill in the gap.

Local lending networks include actors, facilitators and supervisors that were embedded in local places, resources and social networks. There are several types of lenders, either regulated or unregulated, that were active in local business communities. Financial Affairs Office (FAOs) at each level of administration supervised these lenders. Typical local lenders are micro-lending companies (MLCs), guarantee companies (GCs) and pawnshops (Gao, 2015). FinTech firms also had inquiries from the FAO for beneficial policies and protections. However, due to lack of power, local authorities were debilitate to support local lenders for greater scalability and sustainability.

For example, MLCs were not typically useful to SMEs and individuals because of limitations in operational geography or location and the high cost of operation. The MLC was a new type of non-deposit lending company jointly launched by the PBOC and CBRC in 2006. Simultaneously, the creation of new business licenses encouraged the entry of new private capital into the lending market. Market entry

became so popular, that 8,000 firms have been established countrywide within 7 years of the policy being announced (PBOC, 2016).

As regulated by PBOC, MLCs were allowed to access funding from at most two commercial banks, but the maximum amount of capital support was capped at 50% as equivalent to equity of each MLC (Zhang, Guo and Wang, 2012). This is a comparatively low benchmark compared to a leverage ratio of non-deposit lending institutions worldwide (CGAP, 2012). At the same time, MLCs had to deal with high taxation as normal firms rather than financial firms due to lack of identification as a financial institution in the tax index (Zhang, Guo and Wang, 2012). In addition, geographical limitations constrained many MLCs in scale. One MLC could only operate at a district level before new licence could be granted in a different region by local authorities. Normally having one licence required more than 50 million RMB deposit and very long application process. These regulations prevented the MLCs to scale into other regions. FinTech firms, on the contrary, were not obligated to these regulations and boosted rapidly across regions.

The growth of MLCs represented a significant milestone in privatization and discrimination of lending service in China as the majority of these MLCs are owned privately. Their lending methods differed from the conventional banks approach which emphasised "relationship-based" analysis. Some of the literature (IFC, 2012, ADB, 2014) used the term "microcredit company" as a translation of MLCs, which reflected the misleading concept of microcredit in China given the size of the loans and targeted clients. Most of the MLCs offered loans around one million RMB, which was arguably micro compared with bank loans, yet the loan was far more oversized to start-ups and the self-employed (World Bank, 2008).

Guarantee Companies (GCs) were another example to illustrate the depressed local financial networks. They were created as policy-driven locally based financial vehicles. In 1999 the Minister of Commerce gave permission to set up private guarantee companies along with national GCs (Lin, 2013). Similar to MLCs, private capital was permitted as legitimate funding source to GCs, which also enabled local banks to lend to local businesses with shared risks through either a public or private guarantor. Foreign capital was allowed to invest in local GCs facilitating the capacity of regional SMEs to be financed by banks (Yeung, 2001; Feng, 2008).

However, similar to MLCs, the national guidance discouraged the expansion of CGs across to other provinces and even cities. The formal procedure to expand was an expectation to register was almost impossible (Gao, 2015). The regulators also monitored the cooperation between local financial institutions and local GCs and intervened their deals frequently. For example, when regulators altered credit policy, a bank had to suspend the loan cycle and stop re-issuing a new loan as promised to the borrower. This decision was made internally without notifying borrowers and GCs in advance. Consequently, SMEs and GCs were not able to retain existing bank loans and control cash flow risks, as they expected, and therefore had to either borrow from informal lenders to continue their business activities or confront the danger of bankruptcy due to running out of cash. When many local SMEs and GCs suffer from the credit policy intervention or alternation, the local economy was weakened. FinTech firms, however, were not affected by the banking restrictions, as they finance firms directly from individuals and local firms.

Analyse above indicates that the centralised regulation protects the financial stability and efficiency, yet did not encourage local SMEs and individual to access local financial service. The over-regulation also constrained the financial sustainability against local lenders to provide alternative lending source. Because of safety concerns, banks were encouraged to doing business with each other, rather than with local borrowers and government. Therefore, financialised banking practice were adopted and accessibility to finance for the SMEs were further depressed.

3.4.2 Financialized Banking Institutions

There were two instruments that banks used to make profit as well as control risks. One is Wealth Management Products (WMPs) and the other is institutional lending. As Table 3.5 and Table 3.6 explained earlier, institutional lending between banking institutions were perceived as safer transactions than lending to enterprises. Therefore, banks borrowed from each other and from WMPs to bid in the interbank market to gain profit as well as to keep capital safe.

Apart from deposit absorbing, Chinese banks normally issue so called Wealth Management Products (WMP) as an alternative funding source. This approach has been widely used in the banking sector in China over past decades (Zhang, 2010). The main difference between deposit and WMP is the visibility of the assets and liabilities on the balance sheet of banks, which was rigorously monitored by regulators. The reason for hiding liabilities is to allow banks to increase flexibilities of surplus of capacity with the regulatory framework. On one hand, banks use WMP funds to finance borrowers. On the other hand, banks use WMP to increases its own financing capacity to achieve KPIs from regulators.

To reach the two objectives, banks went through other financial institutions, such as Trust Companies, Securities Companies or Mutual Fund Management Firms, to borrow and lend. Each institution has its own specialization in raising capital as they were expertised relatively in the credit market, capital market and securities market. In the SME finance sector, the trust company was the most common vehicle used in financing banks and their borrowers.

Figure 3.2 and Table 3.8 explains how the source of funding is important to both banks and local lenders, and the impacts on their respective lending mechanisms. Figure 3.2 explains how banks work with other financial institutions in raising capital through WMPs over different financial vehicles. Table 3.8 illustrated how local lenders had to pick a different approach raising fund from the local financial system when banking institutions blocked their accesses.

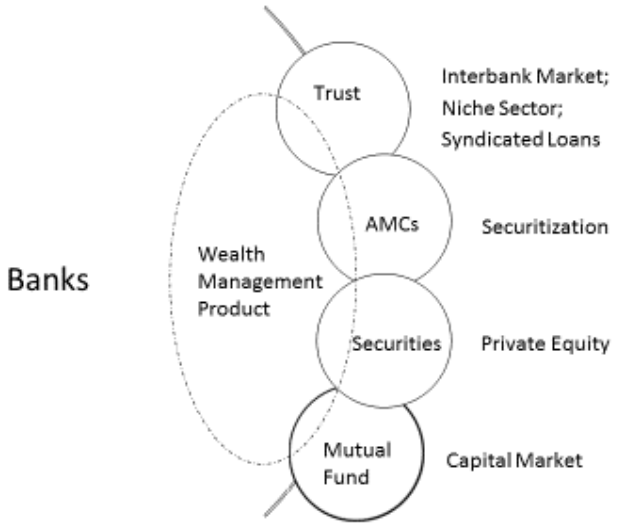


Figure 3.2 Banking Funding Source
Source: Author (2016)

Unfortunately, local financial institutions were excluded from membership funding club. National banking regulators prohibited access to capital from financial institutions to local lenders through different ways. First, local lenders were not able to list on the national stock market. Second, they were not able to borrow from financial institutions due to regulatory guidance. As a result, local lenders had to seek alternative funding sources for themselves and borrowers, including borrowing from the local asset exchange, from foreign investors and from policy banks and other SOEs.

Particularly in Guangdong, the multi-level geo-political landscape within the province and large cities provided unique and diversified funding sources out of other provinces. No other place like Guangdong has six local financial exchanges in three cities. Nevertheless, it is the only province that has established two wholesale funds up to the end of 2014. Guangdong province also approved foreign capital investment to local lenders and the overseas listing of local lenders in Hong Kong.

Table 3.8 Regional Lending Funding Source

	Equity Finance	Debt Finance
Micro-lending Companies	Private Equity; Foreign Capital (by province); State Owned Capital; Overseas public listing;	Private Placement; Asset Exchange; National Development Bank;
Guarantee Companies	Private Equity; State Owned Capital; Foreign Capital;	Informal negotiation; No formal contract;

Source: Author (2016)

At this point, local government was finally sought for actions, which they were capable to deliver through their own power. For example, local government and its financial arms can become shareholders of local MLCs or GCs to inject funding into the credit market. Also, local government can courage foreign capitals to be in local market but subject to certain conditions. Local asset exchange could be also initiated in case assets or risks needed to be swapped or hedged. At this point, FinTech could be another financial instrument that local government can apply in local market.

3.4.3 Infrastructure

It has been clear from analysis above that FinTech firms became part of the financial infrastructure at the regional level of financial ecosystem which circulated the flow of capital between financial institutions, local lenders and SMEs as well as individuals. One additional and equal important role of FinTech firms in a region was to catalyst the information flow between actors. In particular, FinTech firms created new credit reference system when the only existing one was only available to banking institutions.

The credit reference system refers to digital ledger of historical credit information records of both individuals and firms. It normally includes borrower identification, history of borrowing, credit card numbers, regulated asset ownership and history of default. Financial institutions rely on the credit reference system to examine the creditability of borrowers and make accountable decisions. The People's Bank of China and its associated Credit Reference Centre (PBCCRC) was the dominant provider of credit reference. By the end of December 2012, the financial credit information database contained credit files for 860 million natural persons and

20.68 million enterprises (PBCCRC, 2015). With the permit from the State Council, People's Bank of China led and managed the only existing credit reference system in China, while the other institutions, such as National Development and Reform Committee (NDRC) and Youth League of Chinese Communist Party (YLCCP), were also eligible to provide reference information in the non-financial sector. Small scale local agencies were also granted licenses to access the credit reference data, yet their business activities have been limited by regulations. However, except regulated banking institutions, regional lenders were almost excluded from accessing the CRC system. Up to 2013, approximately 100 MLCs with good performance have gained basic access to the CRC, yet there were over 6000 MLCs nationwide.

This exclusion to credit information was a discrimination against the private lenders which unnecessarily prevented them acquiring necessary information from lending. At the same time, the restriction also limited the function of the CRC as the percentage of non-performing loans from private lenders could not be recorded. The communication between private lenders and the conventional financial institutions were blocked due to the locked information system. FinTech firms, however, provided a substitute arrangement to facilitate the information flaw.

Two types of FinTech services enabled the alternative information flow in the SME financing space. First, the third party payment services created fast payment for businesses and individuals to transfer money on mobile without banking service interface. It meant business service providers may create their own payment account on website or on mobile web without directing to bank payment. Therefore the circular of money has become faster and easier for mobile users. Second, third

party credit reference agencies have emerged. Although they are not allowed to sharing their credit scoring to each other without a license, they were able to assess borrowers credentials of their when CRC is not accessible. The emergence of alternative credit reference was established based on the big data and data mining techniques, which will be explored in the following empirical chapters.

This section examined the financial ecosystem in regional level of China. Local lenders and conventional financial institutions were competing and coordinating with each other in SME financing, both of which yet had difficulties in downscaling with their services, obtaining the sustainable funding as well as capturing credit reference of borrowers. FinTech firms substituted the flow of capital and information within the regional financial network and served as alternative funding and information source for SME lending. Three types of FinTech services demonstrated their value and proposition in the regional financial network, which were payment, wealth management as well as credit reference. In the next section, each FinTech service will be explored in further detail and the evolution of FinTech service in China will out outlined.

3.5 FinTech Services in Chinese Metropolitan Cities

FinTech firms emerged at the end of 2006 but grew dramatically since 2012. They have been acting as information intermediaries in financial services, but were not yet regulated by any of the regulators by 2014. This emergence of FinTech firms in China echoed the global trend of alternative finance particularly in UK and US where new lending forms began to serve small borrowers over the internet with strong credit scoring method and invoice discounting facilities (Mullineux, 2015b).

China and Chinese internet users have shaped the emergence of what has been identified as the largest FinTech industry in the world. Mckinsey (2016) estimated that, by the end of 2015, there were more than 500 million users of FinTech in China. The valuation of Chinese FinTech sector reached to 12-15 trillion RMB, which was equivalent to 20% GDP of China. There were over 10 trillion RMB third party payment transactions by volume completed and 700 billion RMB asset management funds were raised by FinTech firms in China (*ibis*). More than 4,600 peer-to-peer lending platforms raised more than $66.9 billion for borrowers in China, which overshadowed the total lending volume ($22 billion) of UK and US FinTech lending platforms (Citi, 2016).

The escalation of FinTech services in China were dependent on the development of ICT and exponentially growth of web based services. First, the advancement of information and telecommunication facilities supported the development of FinTech. Up to 2015, as reported by CNNIC (2015), there were 688 million internet users in China and 620 million mobile owners. Second, the wide acceptance of e-commerce encouraged online financial services to grow. According to a report on digital disruption by Citi (March, 2016), China's e-commerce ecosystem is now larger than any other country in the world in terms of transaction volume. Third, large internet service providers have embedded information services with a large customer base and significantly expanded access to financial services through existing business models.

As explained in section 3.2.3, three main brand of internet service provider, Baidu, Alibaba and Tencent (BAT), provided their services for free to maximum increases of users and to expand their market share and valuation (Shin and Shim, 2016). They have two approaches as regards expanding their businesses. First, they invest in new start-ups and merge them into their business. Second, they collaborate with the public sector to build new business models on the internet. Since then, BAT started reshaping financial services to SMEs and individuals and increased FinTech entrepreneurship in China.

Three types of FinTech service will be examined in this section. First, the role of digital wallets will be discussed as the interface to the FinTech from the customers. Second, wealth management services will be explored as the driving force of the growth of FinTech service. Third, disruptive banking services in FinTech sector will be introduced particularly with the focus of accessibility of SMEs and individuals. The background and evolution of FinTech sector will also be portrayed in this section.

3.5.1 Mobile Payment

Payment is the portal of any financial services to the customers. For example, debit card the enabler of banking services to customers when they do shopping and need payment. FinTech services need not only debit card to enable payment but customer friendly payment facilities through the webpage or through mobile screen. BAT created their payment facilities initially to serve their main business functions, yet those services became the additional financial infrastructure of FinTech service of others. In China, Alibaba adopted the online digital wallet called Alipay back in 2004 to serve its online shopping businesses (Shrader, 2013).

Tencent embedded their wallet QQ and WeChat and expanded rapidly through lucky bag and gaming within personal networks. Baidu collaborated with financial institutions and encouraged customers from both to invest online through its wallet. Their wallet optimized payment experiences simply and safely so that no single payment provider could provide for online expenses at that time. As a result, with the upgrade from 3g to 4g and smart devices, they successfully accumulated hundreds of millions of new customers in only a few years. Their growth was too rapid to be neglected by regulators, even the Prime Minister paid special attention by visiting their company in 2010 even before regulation came out. After private payment services were legitimated, thousands of new payment service providers were founded in China in 2012 (To and Lai, 2014; Holmes, Balnaves and Wang, 2015). The existence of digital wallets and the third party payment services bridged individuals and businesses to transfer money from mobile and laptop, from BAT to other service providers, without banking interface. Peer-to-Peer lending, therefore, has become possible before banks took advanced actions.

3.5.2 Wealth Management

Apart from payment capacities, BAT wallets also play the role of custodian and clearance as FinTech back office service. It has been easier to move money in and out of digital wallets on mobiles or computers than to wait in a long queue at bank branches during office hours. Customers intended to transfer their money from their bank account to their BAT wallet as it was easy to pay friends, online vendors and manage bills. As a result, billions of money accumulated in BAT wallets. This raised customer concerns and BAT took the opportunity cost of this

money as they were not generating deposit interest. These concerns became the motivation for wealth management services for BATs.

Alibaba invested a small money fund in 2013 and mobilised money from its wallet to buy Exchange-Traded Funds (ETFs) (Guo, Bouwman and Blockman, 2016; Shrader, 2013). Since financial institutions were prohibited from making similar investments, Alibaba generated a surprisingly high short-term deposit interest rate (8%), which has easily beaten the wealth management schemes provided by banks (4%) and deposit interest rates (2%) (Yang, 2012a, 2012c). This difference convinced customers to invest millions in Alibaba's wealth management option on its wallet. At the same time, the small fund brought by Alibaba became the largest money fund in China in a month. Tencent and Baidu followed this movement and built up their investment arm in selecting funds, buying assets and educating wallet users. Their competition, therefore, evolved in order to maintain and attract more users.

This new business model of wealth management spurred the start-ups' formation and acquisition. They were able to do similar business based on the legislation of private payment services. They were developing either new algorithms to identify financial assets or better dashboards that were easier to navigate on mobiles than BAT. Thousands of new firms were created at the end of 2012 with the aim to be merged by BAT or investment firms or to substitute the untapped local market left by BAT.

3.5.3 Banking

FinTech firms in banking were the most idiosyncratic types, rather than payment and wealth management, because there was little regulation in this area. The

uncertainty and complexity among SMEs and the personal lending sector encouraged FinTech firms to take risks but has hindered BAT and banking institutions from adopting a different approach. This divergence has not emerged in other types of FinTech firms. Most of the FinTech firms are owned by domestic funders and only operate in a specific region (Shim and Shin, 2016a). Compared with US and UK FinTech firms, which have expanded globally, the strategy of Chinese FinTech firms were worth a close examination both commercially and academically (Shim and Shin, 2016b).

BAT had a challenging journey in bringing banking services out of banks. Alibaba partnered with one of the nationally owned banks in early 2005 (Guo,Bouwman and Blockman, 2016). By exchanging with consumption data, Alibaba expected small loans for online vendors as a working capital from banks. However, the partnership failed due to banks' demanding control on the lending process, which did not satisfy the borrowers from Alibaba. Tencent worked with a local bank to issue personal loans to its SNS users, yet the agreement ended in the bureaucratic negotiation process in the bank hierarchy. Baidu could not embed their search engine on banks as they were not sharing Application Programme Interface (API) with non-banking institutions. However, BAT did not give up its efforts and founded their own banks instead (Latzer *et al.,* 2016). As Jack Ma (Stallibrass and Pang, 2015), the founder of Alibaba famously quoted: "If banks don't change, we will change them (Ma, 2008)" By taking advantages of new policies in 2015, BAT established their own bank specialising in SMEs and personal finance (To and Lai, 2014). In spite of conventional retailing banks, BAT banks do not have any branches but direct operate through internet service. In particular, BAT also

applied for the licence of credit scoring (late 2015) and insurance company to provide a comprehensive financial service within and beyond their specialised business.

FinTech start-ups were inspired by the revolution in banking services that came from the actions of BAT. Although most of them did not qualified for a banking and insurance licence, they joined the financial intermediation through peer to peer (P2P) lending and equity crowdfunding. By 2015, there were 159 equity-funding firms, who collectively raised £643 million (Wei, 2016). Before Chinese regulators issued steering guidance in 2016, there were more than 4,600 P2P FinTech firms established in China and these disbursed $66 billion in 2015 (lingyicaijing, 2016; Mckinsey, 2016), which is four times larger than the marketplace lending volume in the US (Deer, Mi and Yuxin, 2014). Both platforms facilitated lending information from borrowers to individual lenders through the internet. P2P FinTech firms do not lend with their own money but with money from High Net Worth Individuals (HNWIs) or working class families. These companies acted as intermediaries between lenders (or lending institutions) and borrowers as information consulting services. By using data on social networking websites or applications, P2P FinTech firms created risk models to manage credit risks and market to potential customers (Lin, *et al.*, 2015).

It worth highlighting that Guangdong was the most robust and advanced province in China in terms of number of FinTech firms, transaction volume and business innovations of FinTech firms (Lingyicaijing, 2014). Table 4.9 below illustrates the characteristics of FinTech lending firms. They were clustered most at the large cities in China. It illustrated the competitiveness of Guangdong in the FinTech

sector among other regions. Up to September 2014, there were 343 FinTech firms from Guangzhou and Shenzhen, which took 65.27% from national account and largely overcame Beijing and Shanghai combined. Although data from Guangzhou has slightly fallen behind Beijing and Shanghai, Shenzhen had proved the competitiveness and power of Guangdong in the FinTech sector. In addition, the transaction volume from Guangzhou and Shenzhen integrated two thirds of transactions in major cities, which proved the leadership position of Guangdong in FinTech lending sector in 2013.

Table 3.9 FinTech Lenders Comparison

Cities	Number of FinTech Firms	Percentage	Transaction Volume (Million RMB)	Percentage
Beijing	180	28.94%	38.244	26.62%
Shanghai	117	18.81%	30.02	20.88%
Guangzhou (Guangdong)	36	5.78%	14.414	10.03%
Shenzhen (Guangdong)	289	46.46%	63	43.85%

Source: Lingyicaijing (2014)

The evidence above offered a testimony that Guangdong was one of the leading province in China for FinTech. The difference of FinTech firms in Guangdong was the debates and discussion of disintermediation in a new context. Guangdong has the largest number of FinTech lenders in China, and Shenzhen is the most important place in the province. In Guangdong, both Guangzhou and Shenzhen have extensive policies to support FinTech firms. For example, Guangzhou endorses significant FinTech firms for 1-10m RMB as reward of registration which competing other major cities. In addition, Guangzhou planned to establish several

FinTech parks which have supported FinTech firms and their employees (Guangdong FAO, 2015).

The reason behind the growth of Guangdong in FinTech industry is complex, many of which were overlapped. This was the case for actors, facilitators, enablers, back and front regions and the role of regulators in finance and information technology sectors to be examined in the specific province. This question is critical to the focus of accessibility of finance in China, but also situated in wider debates concerning embedded relationships between financial service providers and its customers. The critical point of this thesis is that the core of FinTech service provided of local small firms. The performance of FinTech firms in Guangdong with conventional financial institutions is explored in the next chapter.

3.6 Conclusion

This chapter provided the landscape of financial services in China and focused on the evolution and competitiveness of FinTech firms in the financial sector and at the regional level. The development of modern banking sector and deliberation of banking services supported the growth of Chinese economy. Nevertheless the absence of strong property rights, certification and registration system led the imbalanced accessibility of financial services. The emergence of FinTech firms have filled the gap of exclusive financial market and became alternative source of funding and information to SMEs and individuals. Four conclusions can be drawn from this chapter through the exploration of China's financial system and the examination of FinTech service.

First, small businesses contributed to economic growth in China but have been supported by a fragile or underdeveloped institutional and financial system. Private ownership or enterprise has not been fully protected by law nor partially accepted by the financial system. Through the continuous endeavours of entrepreneurs, the private economy has contributed to the development of a stronger Chinese banking sector and globally competitive information services. Their contributions, however, were not recognised by the financial system.

This leads to the second conclusion on Chinese mainstream banks which was neither able to absorb technology to provide access to finance to small firms nor expanded their lending networks. Instead, the inappropriate adaption of regulatory measures discouraged banks to engage with small businesses. Consequently, local authorities attempted to initiate the development of local lending facilities yet they were incompatible with the financial infrastructure controlled by the national government.

Third, FinTech firms emerged in the major cities in China to fill gap in the market for financial services left by national and local lenders. With limited regulations, FinTech firms expanded nationwide and developed their own measures and processes to tackle asymmetric information between borrowers and FinTech platforms and to try to develop more sustainable funding from individual investors.

Finally, Guangdong had become an important centre for FinTech firms in China compares to other provinces. FinTech firms emerged or moved to Guangdong as results of geographical and historical local characteristics, such as the local ecosystem for small business networks, advanced international trade,

manufacturing and technology and sophisticated financial infrastructures which is adjunct to Hong Kong.

This chapter concludes with an overview of financial services in China by the early 2010s. However, several questions remain to be addressed from a provincial perspective to better understand the problems and prospect of financial inclusion and SMEs in China. First, how can local bank branches provide services to SMEs with directives from their head-offices? Second, how does local government reconcile the activities of banks with the interests of local business? Third, except for geography and history, why has Guangdong emerged as an important location for the development of FinTech services? Those questions will be explored in the next chapter.

CHAPTER 4

SME LENDING IN GUANGDONG

"It is a wonderful thing that China is a leading country in the FinTech sector in the world and Guangdong is the leading player in China. By any means we should support the small business to grow in the Guangdong province" Yunxian Chen, ex-Governor of the Guangdong Province (Chen, Guangzhou, 2015)

4.1 Introduction

The chapter explore the emergence of FinTech in Guangdong province. Historically, Guangdong has been a laboratory for central government to conduct reform and economic policy pilots (Vogel, 1989; Chen, 2002). International trade and cooperation strengthened the economy in general, especially in the coastal areas such as Guangdong, Zhejiang and Jiangsu. In addition, Guangdong has been widely regarded as the pioneer of openness and reform in China (Vogel, 1989; Li; 2014). Over the past 30 years, Guangdong attracted more than 210 world leading financial services companies as inhabitants and $50 million FDI in the financial sector up to 2014 (Dong, 2013).

Guangdong suffered from changes to banking credit policies, which caused a credit crunch to SMEs in 2012. This caused disputes between the FAO of Guangdong and CBRC Guangdong, because local guarantee companies defaulted on loans. It was the first time in China that local regulators had such disputes with CBRC local branches. Consequently, CBRC mandated cooperation between banks and the majority of local GCs. Guangdong launched an investigation in to the activities of 56 bank branches in Guangdong. At the same time, Guangdong has been actively supporting local FinTech firms. At the beginning of 2014, Guangdong approved the first FinTech trade association in China and two subsidiaries in Guangzhou and Shenzhen. As a result of the friendly

environment towards local business, there were 312 listed companies from Guangdong in 2011, which was the highest number amongst other provinces and accounted for 16% of the total number of listed companies in China. At that time, Guangdong owned 21 high-tech science parks, with 9 national research parks and 12 provincial ones, more than any other province (Dong, 2013; Ji and Chen, 2014).

This chapter examines the provision of SME loan finance across Guangdong. It divided into four sections. First, Guangdong's economic geography will be explored. After briefly outlining the economic development of Guangdong, the chapter begins with exploring the achievement and difficulties of regulated lenders from regional perspective. Following the SME lending market, this chapter will examine the formation and growth of the FinTech sector in Guangdong. The discussion explores the embeddedness of firms in the province. This chapter argues that the business ecosystem is an important resource, which played very important role in the formation process of FinTech firms. This geographical factor goes some way towards explaining why Guangdong became one of China's FinTech hub. .

4.2 Literature Review

4.2.1 Regional Banking Networks

The role played by regional specific institutional systems has been under-estimated in the literature on banking and finance. Particularly in the Chinese context, the devolution movement in Guangdong since the 1970s' created a combined ownership model between the national government and the regional government in the banking sector. This refers to the entry of private capital into banking service in China although the private sector can only own a small

proportion of equity of a bank. Because of the nationalization of networks of the banks, there was a trend that developed provinces in the eastern China absorbed more funding and deposit than the underdeveloped provinces in the west for the infrastructure creation. This caused a development imbalance across the banking sector around the country in which Guangdong had a strong advantage.

Pollard and Samers have argued (2007) that Anglo-Saxon banking and financial geography has been overemphasized and that other countries are equally important in empirical, theoretical and political terms. Leyshon and Pollard (2000, 205) and Argent (2002, 316) listed four characteristics of the Anglo-Saxon banking system. First, the operation of banks was centralised and their distribution was marginalised. Instead of building branches with higher costs, banks developed telephone call centres, mobile banking and automated credit scoring systems to provide banking services rather than face-to-face communication at the counter (Leyshon et al. 1995; Leyshon and Thrift, 1999; Pollard, 2003). Second, the services provided at bank branches became more sophisticated based on the provision of fee-generating services to retail customers (Leyshon and Thrift, 1999). Third, market segmentation and financial exclusion have emerged because of financialization in the banking sector with more services provided to the rich and less services offered to the poor (Dymski and Veitch, 1996). Fourth, due to the closure of bank branches, the “paternalistic relationship” between banking staff and its branches has changed. There are less full time employees but more part-time placement in the banking space (Leyshon and Thrift, 1999). In the Anglo-Saxon banking sector, the state is playing an important role in regulating banks and its human relationships with the investors and customers (Yeung, 2006).

Similar trend have been identified in relation to the trajectory of banking development in Guangdong and the rest of China since 1993.

China drew great attention in economic and financial geography research, as its economy was moving toward a more hybrid model between the Capitalism and the Socialism, after decades of economic development and political reform, which was exceptional to the existing research. For example, Oi (1992) stressed the rise of “local corporatism” to explain fiscal reforms as the outcome of devolution. Nee (1992) argued that the ownership reforms introduced a “hybrid” organizational structure in the local governance framework. When the property system was fractional and incomplete, actors might behave through personal connections, labelled as personal relationship, to solve economic problems (*Ibid*.). Walder (1994) extends that the reform of the property system in China was not about privatisation but a restructuring of the relationship between central and local government.

The need improve efficiency and the governance structure of the banking sector prompted the central government of China to begin to manage banks using a regional focus rather than an industry focus. “Region-cluster segmentation” policy has come out which in favour of regional economic development. Foreign banks were also allowed to open branches in certain areas such as Guangdong. During this restructuring, more than half the original 157,704 branches have closed over the decades and the pace of branch closures accelerated rapidly since 2001 (Yeung, 2008). At the same time, financial institutions chose to locate Guangdong and built financial clusters there. FinTech firms followed the footsteps of the financial institutions and became one part of the financial ecosystem.

4.2.2 FinTech Clusters

The FinTech sector in Guangdong exhibits characteristics that are typical of an embedded financial cluster with some of the world's largest banks, information service providers and hundreds of thousands of local bank branches, trust companies, urban cooperatives and the microloan companies. The existing literature offered a review of banking sector in China (Saez 2004; Yeung 2008), yet there was limited discussion on the role of ICT technology on the formation of clusters of SME finance at the regional level. There could also be a conflict of interests between the national financial institutions and the regional authorities while the state still played an important role in the devolution process. It is worth addressing, therefore, the responses of FinTech firms to and in dynamic and transitional economic regions.

Clusters represent the firm dynamics and industrial development in an area. It consisted of three dimensions. First, at the micro level, firm behaviour at the local level will be explored in this chapter, for instance, the emergence of FinTech firms in Guangdong. In this chapter, the formation and cooperation of loan finance providers will be examined to learn the routines around that area at a specific time. Second, at the meso level, firm dynamics drove the industry to a different trajectory. Empirical evidence indicated that FinTech firms from other major cities of China started setting up local chapters and regional operational centres in Guangdong due to the openness and flexibility of funding. Third, to the macro level, the lifecycle of the industry reflected the mutual impact of firms, industries and spatial clustering. For example, the emergence of FinTech firms, to some extent, supported the transformation of micro-lending firms and guarantee companies at

the regional level to attract funding and transform SME lending methods. This clustering dynamism and industrial development will be further explored in this chapter.

Clustering represents an agglomeration of firms in one place, as well as the evolution of an industry at the same time through specific spatial characteristics. As Lammarino and McCann (2010) suggested, Evolutionary Economic Geography (EEG) is a good interpretation to describe the economic development from an industrial perspective to the special perspective of clusters. On one hand, the replication of routines and frequent failure was a catalyst of relocation of firms to a different geography. On the other hand, the knowledge accumulated and based at the regional level though the process of routine replication and operational mechanisms such as spinoff activities, talent movement and establishment of commercial ecosystem. Start-ups also contributed to the establishment of a locally embedded cluster. Particularly in the tech sector, start-ups are frequently launched with the cover of the parent firms in the same location. The founders used to be employees of large corporations and the social network tends to be locally embedded (Boschma and Frenken, 2009b). Start-ups, or entrepreneurial activities, may increase the economic competitiveness of a region and local firms. This chapter will also discuss the talent as it moves from parent corporations to FinTech start-ups as one of the formation factor behind the development of FinTech in Guangdong province.

However, the digitalization of financial service did not change the nature of banking at the relational aspect. Many FinTech firms followed the trajectory of banks when they attempted to identify the credit worthiness of loan applicants. To understand

how FinTech firms process a loan, understanding the theory of relationship bank should be prerequisite. In the next section, this theory will be outlined in the context of Guangdong.

4.2.3 Relationship Banking

Relationship banking has been extensively explored in recent literatures (Yin and Matthews, 2017). From the borrowers' perspective, it has been evident that firms with developed relationships with banking staff have more possibilities to acquire credit with favourable interest rates and lending conditions (Petersen and Rajan, 1994; Berger and Udell, 1995). From the lenders' perspective, banks can utilise borrowers' credit record in the next lending cycle with the same firms and explore potential customers (Agarwal and Hauswald, 2010). Therefore, small and regional banks possibly have more of an opportunity to develop relationship-based approaches in banking and lending strategy, but this depends on each banks/financial institutions approach to lending. The data needed to undertake sophisticated credit scoring might be limited in an emerging economy making relational banking an important approach to lending.

The relationship banking is an important area of research that considered asymmetric information between borrowers and lenders in the banking sector. Berger et al. (2005) explained that larger banks were reluctant to capture soft information than small banks yet they were able to deal with large firms with clear credit record. Small firms were preferred by small and local banks that were capable of analysing soft information and ambiguous credit reference. Therefore small banks gained competitiveness in SME banking by managing relationship in banking (Yin and Matthew, 2017). The relationship banking could utilise its

information advantage to “secure” the relationship firm, which could increase financial accessibility for those firms (*ibid*).

There were intensive literatures on relationship banking (Petersen and Rajan, 1994; Berger and Udell, 1995; Agarwal and Hauswald, 2010; Yin and Matthew, 2017). Most of them demonstrated that SMEs improved creditability and less likely to be refused by lack of collateral because of the development of relationships with their lenders. Therefore relationship banking became a solution to alleviate information asymmetry and reduce lending cost to SMEs.

As a result, SMEs attempted to build relationships with the potential lenders to maximise their opportunities (Sheng et al., 2011). In Chinese context, the transparency and information sufficiency was also considered as key factors in the lending relationship (Cao et al., 2010; Chang et al., 2014). The borrowers’ identities and the lenders’ characteristics had significant impact on the lending decision and the quality of the bank-firm relationship (Yin and Matthew, 2017). Since the creditworthy of borrowers were not easy to identify, personal information and family financial diaries were considered as soft information in the lending process (Chang et al., 2014).

While much of the existing literature on the role of state owned banks (SOBs) in China focused on their effect on growth and financial development (Cao et al., 2010; Yin and Matthew, 2017), SOBs were influenced by government. In China, SOBs belong to the group of state-owned enterprises (SOEs). But the recent spate of bank reforms has severed the formal ties between the SOBs and the socialist plan (Chang et al., 2014). However, the relationship ties still exist in banking and

affect banking relationships in an ego-pragmatic way. State-owned firms expect to gain favours and benefits from relationship banking. Although the overall levels of foreign bank ownership were increasing globally, China continued to ensure that the vast majority of banking assets remained domestically controlled (Epstein, 2014). Foreign banks are found to have a safer loan portfolio than domestic banks in less developed countries (Detragiache et al., 2008), which partly explains its low market share.

In the Chinese FinTech market, FinTech firms were considered to have a closer relationship with banks and relationship lending is believed to be a significant variable in borrowers' relationships. In this research, we take relationship ties as a firm's strategic objective to develop a close banking relationship and extract benefits from it. This relationship was formed from the rooted business culture in Guangdong as well as the powerful network of banking sector. The following section will explore those relationships in further details.

4.3 Overview of Guangdong

This section explores Guangdong from four facets to explain why Guangdong was the regional financial centre of the South China and cluster of FinTech firms. First, Guangdong had comparatively advanced private economy. Second, Guangdong received tremendous policy and financial support from the State in order to encourage international and private business since 1980s. Third, the favourable policy of Guangdong and increasing demand of loans and deposits from local business attracted national banks build intensive branches in Guangdong. Last, the success of Chinese banks incentivized foreign capitals invest in Guangdong with, which had not happened in other province of China before Guangdong.

Those background of Guangdong provides foundation of understanding FinTech services in this region from both provision aspects as well as customer side.

Guangdong has been the hub of private business in China since early 1990s. By the end of 1994, Guangdong was the location for 45,000 private enterprises with more than 600,000 employees and 7.4 billion RMB output value. Those firms also contributed 3.5 billion RMB in taxes, which was the highest amongst all the 31 provinces (Poutziouris, Wang and Chan, 2002). Their success convinced policy makers of the value of the private economy and it was agreed that private enterprise could be expanded to other sectors such as transportation, industry, new technology development and information processing (Wang, Pei and Liu, 2014).

Compared with the development of private and collective enterprises, financial and legal sectors were underdeveloped over that period. Between 1995 and 2003, 66,718 bank branches were closed in the rural areas where most of VTEs were financially excluded (Poutziouris, Wang and Chan, 2002). The remaining banks were focusing on urban area where large amount of VTEs were underestimated due to lack of clear ownership. Most of the loans were disbursed on the condition of government guarantee (ADB, 2014).

In Guangdong, these local embedded enterprises were keen to obtain capital, skills and equipment, which exceeded those available locally. As a result, they bridged the gaps by obtaining inputs from outside the province and from places like Hong Kong, for example to obtain access to new techniques, training and to another market (Yeh et al., 2005). They became an unofficial knowledge hub and

clearing house in local townships and pioneers for the Chinese private economy. To better support VTEs development in leading provinces, the national government set up special economic zones in several provinces that included taxation and policy support (Herrmann-Pillath, 2006). Shenzhen, one of the most successful special economic zone, is located in the Pearl River District (PRD), Guangdong. The richness of customers, both private enterprise and collective owned enterprises, provided the foundation for the leading role Guangdong has played in financial inclusion in China and is part of the justification for selecting Guangdong as the research site for research .

The 3rd Economic Census of China which was conducted in 2013 considers that Guangdong has been recognized as the most dynamic region in China (Ma, 2007) by examining the small firms and producer services nationwide. Table 5.1 below summarises the outcome of the 3rd Economic Census and illustrates the regional competitiveness of Guangdong in China. From the table, it appears that Guangdong is one of the leading places in China for small business, service producers and social finance. It echoed with research that argued that local and diaspora business network of Guangdong encourage entrepreneurship through co-creating, mentoring and financing small firms for each other (Song, 2007; Ou, 2010).

Table 4.1 Summary of the Economic Growth by Province

Province	Number of Small Firms (K)	Number of Employees of Small Firms (M)	Number of Manufacturing Firms (K)	Number of Service Producers Firms(K)	Social Finance (Billion RMB)
Guangdong	**859.2**	**16.86**	**336**	**727.9**	**1382.6**
Jiangsu	878	16.2	393	642	1207
Shandong	591	13.73	219	595	1083.8
Beijing	580	6.06	52	579	1255.6
Zhejiang	807	13.15	393	567	834.5
Henan	298.5	7.81	120.7	391.2	569.1
Hubei	292.4	5.3	83.4	334.1	611.4
Shanghai	367	5.35	96	315	796.4
Hebei	296.5	5.79	11.6	310.5	624.7
Sichuan	185.3	4.84	68.5	302	713.7
Liaoning	315	5.42	11	297.6	565.4
Fujian	270.6	5.92	104.5	267.7	692.3
Anhui	252.8	4.83	92.4	248.8	496.9
Guangxi	142.6	2.33	34.5	199.6	280.1
Chongqing	197.1	3.81	53.9	198.4	503.1
Shaanxi	141.7	2.92	44	198.1	425.4
Shanxi	112.7	2.34	34.6	166.4	370.1
Tianjin	186.2	2.7	54.5	159.3	491
Yunnan	112.6	2.26	33	154.1	426.8
Hunan	N.A	N.A	80.483	308.3	416.5
Heilongjiang	103.679	2.05	33.858	129.4	333.3
Inner Mongolia	94.124	1.91	25.9	125.4	273
Xinjiang	7.4	1.17	18.7	120	285.4
Guizhou	89.1	1.54	32.5	111.4	354.1
Gansu	63.7	1.35	19.7	110.3	261.7
Jilin	788.21	1.84	26.621	96.7	217.2
Hainan	310.8	0.47	6.4	48.9	108.4
Ningxia	25.5	0.44	7.3	34	66.4
Qinghai	16.4	358154	5.4	28.6	122.9
Tibet	6.8	0.16	33.3	17.9	77.3
Jiangxi	N.A	N.A	N.A	N.A	389.8

Source: National Statistics Bureau (2015)
Note: The character B, K, M, T represents billion, thousand, million and trillions respectively.

Guangdong had benefited from the development of SMEs and its affiliation to Hong Kong, owned the most employees in small firm, number of producer service firms and financial employees nationwide. The foundation of economic development remarks Guangdong as a competitive region in attracting investment and policy support from both private and public sectors. Table 5.2 below summarised the policies received by central government to support Guangdong as the gateway of China economically and financially. It also listed the openness of Guangdong in supporting Guangzhou and Shenzhen as regional and national economic powerhouses. For example, in 2008, the Chinese government launch a strategy to integrate the nine cities in PRD into a single megalopolis. It required almost two trillion RMB on more than 150 major infrastructure constructions for upgrading telecommunication, water, supply, energy and transportation facilities (State Council, 2009: 11). Given the infrastructure and living facilities, PRD attracts wealthy consumers, high spenders and international investment in both manufacturing and service industries. Particularly, Guangzhou and Shenzhen are two major cities in Guangdong as well as the PRS area. Guangzhou is the capital city of Guangdong province and is three times bigger than Shenzhen. In addition to the developments in Guangzhou and Shenzhen, in January 2014 an E-finance innovation hub was established in Foshan, together with E-finance venture capital and E-finance incubation hub; Foshan is the first industrial cluster based on the provision of internet finance.

Table 4.2 Policies to support Guangdong in economic growth

Time	Event	Description
1979	Shenzhen Special Export Zone	"One Step Ahead" Policy in supporting Guangdong to utilize capital from overseas diaspora for local development
1980	Rules of Guangdong Economic Special Zones	Legal Consent People's Congress which approving the legitimacy of Special Zones
1986	Guangdong Financial Reform Pilot Scheme	Three themes: diversify source of funding in development, create marketplace of short-term transaction capital and long-term FX and capital market; Banking Specialization; Multi-layer Financial System;
1988	Guangdong General Reform Pilot	Extent Financial Inclusion to Social Inclusion in Guangdong by giving more self-authorities
1998	Guangdong 8th People's Congress	Modernization of Pearl River Delta through external assistance from technology, education as well as sustainability
2001	WTO	Service & Trade Liberalization in Guangdong
2003	Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA)	Closer Economic Partnership Arrangement
2003	Guangdong Finance Empowerment Scheme	Shenzhen Finance Development Office established
2004	Shenzhen Conference	Build Shenzhen as regional finance centre
2007	Guangdong Finance Conference	Accelerating Guangdong Financial Service Growth
2008	Pearl River Delta Reform Guidelines	Integrate 9 Cities into one powerful economic zone from 2008-2020
2009	CEPA VI	Further openness to foreign banks in GD based on previous CEPA
2012	Pearl River Delta Financial Reform Area	Approved by State Council, PBOC and 8 other Ministers together with other 11 cities all over the country
2013	Decisions to build Guangzhou as Regional Finance Centre	Guangzhou's response to Pearl River Delta Financial Reform Area from Central Government
2014	Guidelines of Further Financial Reform in Guangdong	Guangdong's Reaction to Pearl River Delta Financial Reform Area from Central Government and 18th plenary session of the Chinese Communist Party

Source: author (2015)

The concentration of financial services around the PRD area led to the formation of finance focused urban development policies. Three new special economic zones were planned in this region focussing on financial and economic enhancement: Nansha in Guangzhou, Qianhai in Shenzhen and Hengqin in Zhuhai. In 2012, more than 400 enterprises registered in Qianhai in which 70% were financial firms (Dong, 2013; Zhang, et al. 2014). At the same time, Heng Qin was given the authority to approve foreign investment at the district level by central government, which was the same level of authority as the provincial government. Since 2009, Nansha district, which was as large as Singapore, was located in the centre of the delta, was identified as an area which could become a firm for cooperation with the two regions in services and high-tech industry. In the National Five-Year Plan (2011-15) (World Bank, 2016), Nansha was positioned as a business service cluster in south China in conjunction with Hong Kong and Macao special administrative areas. Compared with Hengqin in Zhuhai and Qianhai in Shenzhen, Nansha was expected to contain for a greater variety of industries given greater land and a longer coastline (Chonglin, 2016).

Table 4.3 below outlines the distribution of the mainstream banking system in Guangdong. By July 2013 the province had 11,546 bank branches, 65.2% of which are distributed in urban areas (Pan, 2013; CBRC Guangdong，2014; Wang, 2014; Chen, 2014; HSBC, 2016). National players and foreign banks are mostly located in the PRD, as well as branches of national banks, local urban banks and other provincial banks operations in Guangdong. Banking Association in Guangdong estimated that the number of employees in Guangdong outweighed all the other provinces and accounted for 1/9 of banking employees nationally (CBRC

Guangdong (2014). The most popular cities in Guangdong for foreign banks are Shenzhen, Guangzhou and Dongguan. These cities are also endorsed by foreign insurance companies. In 2011 more than 53% of financial firms based in Guangdong were registered in the PRD which accounted for 65% of employees working in financial services in Guangdong (CBRC Guangdong, 2014).

Table 4.3 Mainstream Banking System in Guangdong

Type of banks	Numbers of branches	Percentage	Per Capita
State Owned Banks	4378	37.92%	0.42
Equitized Banks	837	7.25%	0.08
Urban Commercial Banks	300	2.6%	0.029
Rural Commercial Banks	4027	34.88%	0.4
Postal Saving Banks	1700	14.72%	0.17
Policy Banks	44	0.38%	0.004
Foreign Banks	260	2.25%	0.025
Total	11546	100%	1.1

Source. (Pan, 2013; CBRC Guangdong, 2014; Wang, 2014; Chen, 2014; Li, 2014; HSBC, 2016)
Notes: per capita refers banks per 1000 population

There were three cities in China which have been most often been selected as the location for Head-offices of foreign banks. Apart from Beijing and Shanghai, Shenzhen was the most popular cluster of banking corporations due to the launch of Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) Six. Guangdong was the third but the most popular destination for retailing financial services after Beijing and Shanghai (Pan, 2013; Pan and Zhang, 2014).

Table 4.4 outlined the distribution of foreign banks in Guangdong. The two largest equitized banks, Ping'An and China Merchant Bank, had their head-offices in Shenzhen. In addition, most urban commercial banks chose Shenzhen as the first tier city in nationalization strategy. Most of the regional banks in Shenzhen had

chosen to develop micro-lending services. Apart from commercial banks, credit card industry was also centred in Shenzhen. The growth of credit card industry provided good condition of human resources and expertise of sales, training and risk control in personal financial service. Those resource and expertise automatically transformed into comparative advantage of local lenders in providing financial services to individuals and small firms.

Table 4.4 Foreign Banks in Guangdong

Name	Founded	Characteristics	Reference
Standard Chartered Bank (SCB)	2007	First SME specified branch	SCB Annual Report (2013)
HSBC	2009	Village and Township Bank	HSBC Annual Report (2013)
Bank of East Asia	2007	SME Equipment Finance	BEA Annual Report (2013)
Hang Seng Bank	2007	more than 50% of their China mainland operation	HSB Annual Report (2013)
OCBC Wing Hang Bank	2007	SME branch in Huizhou	Annual Report 2013
Citi	2007	partnered with a local Bank to distribute SME loans	Citi Annual Report 2013

Source: Banks' annual reports (2013)

The cluster of banking resources has supported the local SME growth in Guangdong. However, in fact, the financial support has not been strong enough to back up local economy. Significant gaps were revealed in 2008 when 15,661 local SMEs went bankrupted due to lack of external credit (Sparreboom and Duflos, 2012; Zeng, 2013). In 2012, 60% of SMEs suffered from credit crunch which endangered their competitiveness in the international trade (Zeng, 2013). The response of banking sector in credit crunch was risk averse which was for the

interest of financial safety, yet their conservatism didn't respond to the urgency of local economy when small business exposed to trade crisis. This dilemma will be explored in the next section by reviewing the performance and operation path of local financial institution.

4.4 Lending Gap in Guangdong

The nationally regulated financial institutions were the mainstream providers of financial service in China (Liu, 2014). The banking sector, in particular, represented more than 80% of the number of branches and employees in the entire financial system (National Statistics Bureau, 2015). The role of state owned banks and policies banks were very similar in terms of proportion of business with central government and local council. They have been serving and attracting customers who were the SOEs and large private corporations, which contradicts with the demand of capital from SMEs (Jiang and Zhang, 2010). Chinese banks owned large networks around the country and feature bureaucratic administration both in organization and in regulation.

Table 4.5 below outlined the hierarchy of financial institutions and their regulations. Within the organization structure of banks, decision right on lending distinguished by the hierarchy ranking of local branches which embedded within government in political system (Li, 2014). The coordination between financial institutions and local government is one of the core challenges of an inclusive financial system in China. The national government set up regional offices such as PBOC, CBRC, CSRC and CIRC, to supervise practice of local branches of financial institution, including banks, insurance companies, securities firms, payment providers and credit bureaus. With modernization of banking sector, China has been establishing

sophisticated financial systems include actors and regulators (Liu and Wu, 2007). Compared with regulators, regulatory commissions and extended their authorities in each provinces and cities, which embedded with the hierarchy ranking of regional political systems.

Table 4.5 Hierarchy of Banks and Regulators

Unit	Government (Pinyin)	Place	Banks	Regulators
Structural hierarchy of the administrative divisions	State (Guo)	State	Not Exist	Finance Working Group
	Minister (Bu)	Province	Not Exist	PBOC,CBRC
	Vice Minister (Fu Bu)	Sub-Province	HQ of Banks	Not Exist
	Department (Ting)	Prefecture	Tier 1 Branches	Tier 1 Offices
	Bureau (Ju)	Sub-prefecture	Tier 2 Branches	Tier 2 Offices
	Division (Chu)	District	Tier 1 Sub-Branches	Tier 3 Offices
	Unit (Ke)	County	Tier 2 Sub-Branches	Not Exist

Source: Xia, 2001;

The segregated regulation structure created four problems. First, evidence does not support that regulation has improved the financial inclusion at the provincial level (Liu, et al., 2013; Yeung, He and Zhang, 2015). At the national level, regulation on money created a signal for the price, volume and margin of capital within the interbank market. This signal influenced the lending behaviour of banks and significantly influenced the willingness of bank lending towards SMEs. Regulation on banks depressed the creativity of banking managers in market expansion and loan disburse judgement. Furthermore, it discouraged banking staff to approach small borrowers and value small loans. Second, evidence does not support that regulations are complimentary to each to make a sound financial

ecosystem for small firms. National regulation on money and information access excluded the local lenders (Jiao, 2010; 2012; Yazar, 2015).

Similar structure has been applied at city level where local government has the authority to grant licence to local and sub-local lenders. This politically embedded financial regulatory system didn't form an integrated market nor decrease transaction cost over space. Regulation overlapped with each other through geographical layers (Kan, 2012). This overlap reduced transparency and increased the hierarchy in financial regulation. At the provincial level, local authorities had to deal with multiple regulators to acquire financial authorities for local SMEs. At the district level, firms had to go across district, city and provincial levels for an operational permission (Yang, 2009; Herrmann-Pillath, 2013).

Those problems fundamentally impacted on the emergence of FinTech service in the region. Those regulations, represented as national financial strategies, erased the imagination and creativity of local providers and FinTech firms. At national level, although placed at same roles, banking managers had individual judgement and vision in either lending or borrowing subject to his duties. Current regulation allowed these managers to judge where and when to find money, information and customer, yet it eliminated the risk taking from local bankers to find alternative solutions. Without risk taking, banks were not be effectively serve the small businesses and individuals. This mechanism will be further analysed separately in this section.

4.4.1 National Lenders

Previous chapter highlighted the difficulties of banking institutions in delivering financial services such as national regulation and international accords. Those

arguments were placed at the level of Head-offices and stressed the relationships between banks and regulators. The banks demonstrated different challenges at the local branch level which further explained its limitation in supporting local SMEs as lenders. Those include relationship with colleagues, the relationship between local branches and regional branch and relationships between local branches and the Head-office. Those challenges were partially determined by regulations and international accords, but could not be identified without examining local practices and dynamics. As a results, banks played their role at the national level but left the gap in the local places and firms.

In the cities, national state owned banks dominated the provision of enterprise lending compared to smaller and more regional banks. Apart from the advantage of geographical presence, the state owned banks also had access to sufficient funding. Six out of nine interviews with equitized and urban commercial bankers revealed that small and regional banks were facing challenges in accessing funding. Apart from this funding issue, five of them complained about the inability of scale and expansion due to government intervention. Last but not the least, two interviewees pointed out that banks are not making money from SME lending compared with handling major business accounts and interbank transactions. These interviews highlighted that the small and regional banks experience problems obtaining finance for lending. There was a tension between government policy that emphasises lending to SMEs and the shortages of loan finance available to small and regional banks. There are three explanations for this funding problem.

First, the availability of finance in banks for SME lending was partially determined by the personal preferences of middle level managers responsible for capital management. Running out of money was not necessarily refers to banks ran out of cash. One interpretation was that local branches did not have the authority to decide on the usage of their capital. Alternatively it might result from regional branches being unable to join either national or regional capital exchanges to acquire additional money beyond that available from the collection of deposits. In both circumstances, rigid management rules on capital produced inflexibility in that available for SME loan finance contradicting the policy emphasis placed on providing SMEs with access to loan finance. It was identified during the interviews that SME division officers in banks were struggling with capital quota every day in order to disburse loans and to respond to their customers. These officers were waiting for either a signature from their line manager to authorise a transaction or confirmation of the lending quota from the regional branch before responding to clients. At the same time, during the observations undertaken in branches, most of the client managers were pushed by their clients by phone call or on site for payment enquires.

The reason given to potential SME borrowers for being unable to lend to an SME was the same - bank capital was managed centrally. Most of the banks interviewed in Guangdong (7 out of 9) had a specific divisional HQs that made decisions on how much money could be released for SME lending against the rest of loans to be arranged in a single day. The similarities in corporate structure and styles in capital management attributed to the significance of inflexibility of capital

management. This has also been identified as a major reason behind the unavailability of bank funds for SME lending in Guangdong.

Second, banks had many ways or service products that they used to generate profit but SME lending was not the most profitable service. Compared with lending, banks in Guangdong seemed more interested in borrowing and lending to each other. These exchanges of capital not only took place in Guangdong, but with counterparties around the country through the centralized interbank exchange system. In the exchange process, state owned banks had an absolute advantage because they obtained large amounts of cash as deposits compared to smaller banks. A deputy bank manager (DBM) from an equitized bank in Guangzhou commented on this imbalance in the following ways:

> The profit of banks never comes up from the retailing department in Chinese banks! Think about how much money a sub-branch can earn in a year? It could be equivalent or less to compare our annual performance with a one day balance in investment bank division [IBD]. It is a day dream that the HQ will believe in us [lending divisions] to make profit (Bank1-DBM-Interview 1, 17/08/13, Guangzhou).

These interviews explained how banks obtained accessed to lending capital from other sources than public deposit. It also revealed how the banks emphasized the importance of institutional clients compared to retail customers. The large banks had adequate deposit reserves and massive branches which served as institutionalized competitiveness in corporate lending competition against small banks. Due to regulation defined the lending and saving interest cap and administrative fees on all banks, small and regional banks had little competitiveness in lending without charging fees and increase interest rate when

cost of capital is the same. Therefore they relied on the capital market to obtain lending capital. The Director of Capital Management (DCM) at an urban commercial bank in Shenzhen put her thoughts on the imbalanced cost structure between the SOBs and regional banks as follows:

> Most urban commercial banks invest in SME banking because we want to survive in the competition with big banks [State Owned]. As we are not able to adjust our deposit interest rate, we have to compete with big banks by securing the deposit with the same price. Who will put their money into small banks [Equitized and Regional] with far fewer branches? I wish the liberalization of interest could finally come (Bank6- DCM, 17/12/13, Shenzhen).

SOBs dominated the money markets and bank managers had to 'bow to state banks' in a process that was described in an interview as "playing the game" (TU1-P, Beijing). The game, which was referred in most of the banking interviews, was about how small banks should develop their position among the giant banks. The imbalance in the cost structure of funding source was transferred into the lending side of the business. Since small and regional banks were not able to compete with state owned banks in terms of lending price, they had to take risks in approaching smaller customers through several other products. This intention of taking risks highlighted the creativity within banking organizations, or so called intraprenership in banks, in finding new ways of delivering services. Although there were banking executives and staff who would like to take initiatives, they were not motivated in doing so as potential conflict with rules or hierarchy of decision making. As Vice President of an urban commercial bank in Shenzhen highlighted in her words:

> I don’t like deal with small borrowers because they are not worth it. My pay role was evaluated by how much loan I originate within a month. Originate small loans and big loans have similar process and require same amount of work. If I pick up a small borrower, the value of my work will be depreciated (Bank2- CM, 17/12/13, Guangzhou).

Except for the inappropriate expectation on capital returns from SME lending, small and regional banks were also concerned with their outreach capacity to effectively obtain clients. There was huge variation in geographical presence in major cities in Guangdong between state owned banks and regional banks. For example, by 2015 ICBC had more than 1500 branches in Guangdong (CIBC Guangdong, 2014) while Minsheng bank had only 38 (Minsheng Bank Guangzhou, 2014). One bank involved in the interview was planning to establish 1,000 new service hubs in major residential areas to reduce the gap. The aim of expansion was not only to serve residents who live locally but also small firms who were acting in those local networks. The HQ required the branches to explore local characteristics of SMEs and sub-branches to engage with them through strategic planning from provincial office. A service hubs had been branded differently to bank branches technically and culturally in order to serve the local business. The field visit with one interviewee (Bank1-DBM-Interview 1, 17/08/13, Guangzhou) illustrated a different experience between branches and hubs. Compared with normal sub-branches, the community hubs looked like more informal, where sofas, soft drinks and snacks were provided for its customers. It had a smaller physical presence compared with sub-branches and fewer staff were hired as contractors rather than permanent staff. To some extent hubs have a greater social and

humanitarian sense to treat customers than banking branches. Music provided a more relaxing environment. Very often the senior managers at sub-branch had been required to present in the hubs and talk with residence or group of clients on new products and services from the banks.

The environment of community hubs could be viewed through Plate 4.1. Following the first bank initiating its first 100 hubs in communities, other banks joined the hub-movement. Before the end of the data collection period, at least 5 banks announced their expansion plans to establish hubs or service points as extension of current retailing system (Beijing News, 2016). However, all the efforts sustained after CBRC issued order in managing unauthorized expansion. It was believed among most of the interviewees that this directive protected the mainstream state owned banks and repressed the firm actions from equitized banks. Regional banks intended to follow the same path of development but were stopped by new regulations.

Plate 4.1 Community Hub of Banks in Community



Source: The author (2013)

These three reasons explained the inability of banks in the provision of credit to SMEs in Guangdong. Although there were some FinTech firms designed and

implemented within small and regional banks for SMEs, their motivation was depressed by state owned banks and regulators by dominating power in funding source and scalabilities. In strategy implementation, the BANK 6 aimed at technology as an approach compensating several regulatory constrains encountered along strategy implementation. For example, the CBRC required personal on-site signature on any contract with banks, which prohibited the bank from delivering the online and remote banking service to clients. By introducing VTM (Virtual Teller Machine) and mobile banking, this bank had been able to use on-site recording and filming equipment to meet regulatory requirement. Then the bank was able to collect client information as required with less human interventions than usual. Local bank senior officers in interview back up this trend:

> Our investment in IT systems is much greater than other city commercial banks. We have been established online banking, supply chain online firm, cash management firm, mobile banking, WeChat bank, which is called E-bank series of our bank. This might be the best responses from us in servicing SMEs to regulations against us from physical expansion (Bank6-VPVA 17/12/13, Shenzhen).

The interview brought stressed how technology added expansion capacity to the banks. Nevertheless, it might increase operational cost in implementing new technologies. When asked about the balance of cost and profit, explanation was given below:

> One VTM costs equals annual packages of three staff at basic level. However, one VTM saves time and costs the same as two banking staff which is half cost of our retailing team at the sub-branch (Bank6 - VPVA 17/12/13, Shenzhen).

In sum, it has been shown that small banks were keener to reach its borrowing customers than big established banks by extending their physical spaces and adding technology. Although there are regulatory constraints on both approaches,

some banks were to take actions to reach wider groups and communities and to increase its competitiveness before new regulation come to actions predicted. The limitation of national banks in regional activities restrained the accessibility of financial services, yet left FinTech firms and local lenders to meet the huge demand from SMEs and individuals. Their activities will be introduced in the next subsection.

4.4.2 Regional Lenders

Guangdong was evidently leading in both financial inclusion and technology advancement in the past decades. Previous sections have outlined the landscape of the financial system in Guangdong with a focus on the banking sector to understand finance for SMEs. It has concluded that Guangdong was a leading place out of 31 provinces in China with leading figures. Apart from what have been listed above, up to June 2014, Guangdong banks had a largest portfolio of 1.35 trillion RMB for SMEs credit (Pan, 2013, (page 56-58). Chen, 2014: 76-80) has depicted the growing figures on financial services in Guangdong by illustrating that there were more than 224 financial institutions opened or registered in Guangdong, including 82 banks, 60 securities companies, 82 insurance companies. Of these 147 companies were domestic while 77 are foreign institutions. Total financial assets were over 470 billion GBP in Guangdong. Apart from formal financial service providers, there were 52 MLCs, 1 MLC wholesale company, 5 VTBs, 76 GCs, 7 third Party Payment Companies, 6 Foreign Exchange companies and 173 VCS and PEs (ibid.). Those figures demonstrated the strength and richness of actors of financial services in Guangdong.

Table 4.6 explains all the regulations from provincial level on access to finance for SMEs in Guangzhou. Regional lenders were another important regulated lenders in Guangdong besides banks. As introduced in Chapter three, local lenders include micro-lending companies (MLC) and guarantee companies. These lenders were regulated locally and most of them operate solely in this region. For instance in Guangzhou, in response to all the directives from national government, local government created 11 specific guidelines for building local financial systems in both provincial level and city level. From this table it is clear to observe each layer of administration in Guangdong, from provincial level to district level through to cities, MLCs were regulated and supervised at each layer of governance. Codes of regulation refers to the sequence, the level and place of issuance authorise in Guangdong.

Table 4.6 Micro-lending companies' administration in Guangdong

Level of Admin	Code of Regulations	Purpose
Guangdong Government	粤府[2009]5 号	Permission to open MLCs in Guangdong
	粤府办[2011]59 号	Support MLCs in Guangdong
	粤府[2012]17 号	Support SME finance
Guangdong Finance Office	粤金[2009]10 号	Guidance of MLCs operation in Guangdong
	粤金[2012]6 号	Implement MLCs policies
	粤金[2012]71 号	Reform on MLCs administration
	粤金风险补偿专项资金	Insurance Fund for MLCs in Guangdong
Guangzhou Finance Office	穗金融小贷设立申报通知	Guidance of MLCs operations in Guangzhou
	穗金融[2013]28 号	Supervision of MLCs in Guangzhou
	穗金融[2013]50 号	Guidance of MLC Wholesale fund in GZ
Yuexiu District, Guangzhou	越秀金融小贷监管办法	Supervision of MLCs in Yuexiu District

Source: Guangdong FAO (2015)

In Guangzhou, major local lenders were mandated to locate on the Private Finance Street (PFS) by local authorities. This geographical planning of financial zones represented the dynamics of competition of regulation between local government and financial institutions regulatory commission (Li and Sun, 2013). The Private Finance Street, as depicted below started planning since 2012, which has been the first city level private finance cluster nationwide (ibid.). After its foundation, other cities in Guangdong, such as Foshan and Dongguan, initiatied this planning strategy and built up similar presence in their downtown (Wang, 2014). Up to end of 2014, there were 102 micro-lending companies settled at PFS that provided more than 6 billion RMB loans for local development (Guangzhou Finance Street, 2015). At the same time, within the PFS, the authority finally compiled the private finance index as an indicator to reflect the price of informal lending within the informal lenders (Pan, 2013).

Plate 4.2 Financial Street in Guangzhou



Source: The Author (2013)

The PFS also became a cluster of FinTech firms in Guangdong since policy support from local government and lending ecosystem surrounded. First of all, only

PFS was open to investors from other provinces to set up MLCs in Guangdong (Guangzhou Finance Street, 2015). Secondly, MLCs submitted application in PFS were exempted from quota control in MLCs registration in normal category. As introduced in chapter three, Guangdong as most of the other provinces had to follow limited MLC registration rules with number control. Last but not the least, MLCs that registered in PFS can lend more than other MLCs registered in other areas. They had higher capital threshold and larger area to operate which differentiated to other areas in Guangdong. This spatial advantage created by political power in PFS increased competitiveness of Guangzhou as a regional financial centre but also enlarged the imbalance over other cities in Guangdong.

In addition to geographical disparity, the local government endeavoured to build Guangzhou as an SME finance cluster also increased the burden of Guangzhou based lenders. It has been raised in an interview with (TU4-CO, Guangzhou) that the district authority added several conditions to registration in PFS where beneficial policies applied. First, the local authority required every company minimum square meter areas to be rent in PFS. Then a premium price was charged on the rent which was artificially higher than the average price in a same region around PFS. These burdens also hid in the Management Information System (MIS), which was developed and maintained by the provincial finance office. The aim of installing tailed MIS was to monitor conducts of MLCs.

The impact of rigid regulation by local authorities could be debatable. Controlling the number of firms and location of business could arguably increase the transparency in the regulated financial system, yet the overlapping regulation from different layer of regulators had put pressure and low efficiency for the local

lenders in Guangdong and left FinTech firms huge business opportunities as private organizations. It also mentioned in the interview (MLC1-DMR, Shenzhen) that MLCs had to report to the district finance office, city finance office and provincial finance office respectively if they needed to change any information of the company or open a new subsidiary in other regions, which was not efficient. In addition, the obligated MIS system did not improve robustness and authenticity of data collected from monitored firms. In response to the regulation, some firms installed a dual system to meet the requirement of regulators as well as manage its own data with its preferred system. It is also heard from the interview (TU2-S, Beijing; TU1-M2, Nanjing) that some of the customer information had been leaked to other commercial organisations that also had installed the required MIS. Those responses questioned the effectiveness of local regulations and undermined the policy benefits for supporting local lending systems and accessibility of enterprise finance.

In sum, local government was keen to build an effective local financial system, although there approach might in also in favour of enterprises that embedded with local political systems rather than exclusively focuses on SMEs. The local regulation resulted a limited number of financial service providers within certain planned locations. In addition, the regulation standardized the lending process and routines, such as data format and software, for the regulated actors within the regulated area. Similarly, those regional directives exacerbated the exclusion of financial services and pushed FinTech firms to meet the demand.

4.4.3 Conflicts between Central and Regional Financial Institutions

FinTech firms were born between the grey space from national lenders and the regional ones. On one hand, national financial system has dominated most of SME credit market as regulated national lenders. One the other hand, locally regulated regional lenders filled some of the market gap but there remained gaps. Except financial institutions, the national ecosystem also included constructed orders of financial service which shaped the direction, formality and pace of capital circulation, such as credit reference system, payment facilities and currency network, which has been proposed in the previous chapter.

Figure 4.1 below outlines the relationship between national financial system and local financial system in Guangdong. In the local context, due to a lack of engagement and cooperation, the local government had to initiate its own financial systems within its limited authorization and resources, such as lenders and local asset exchange. The dash line in between represents the separation between two systems along with their actors and facilitators.

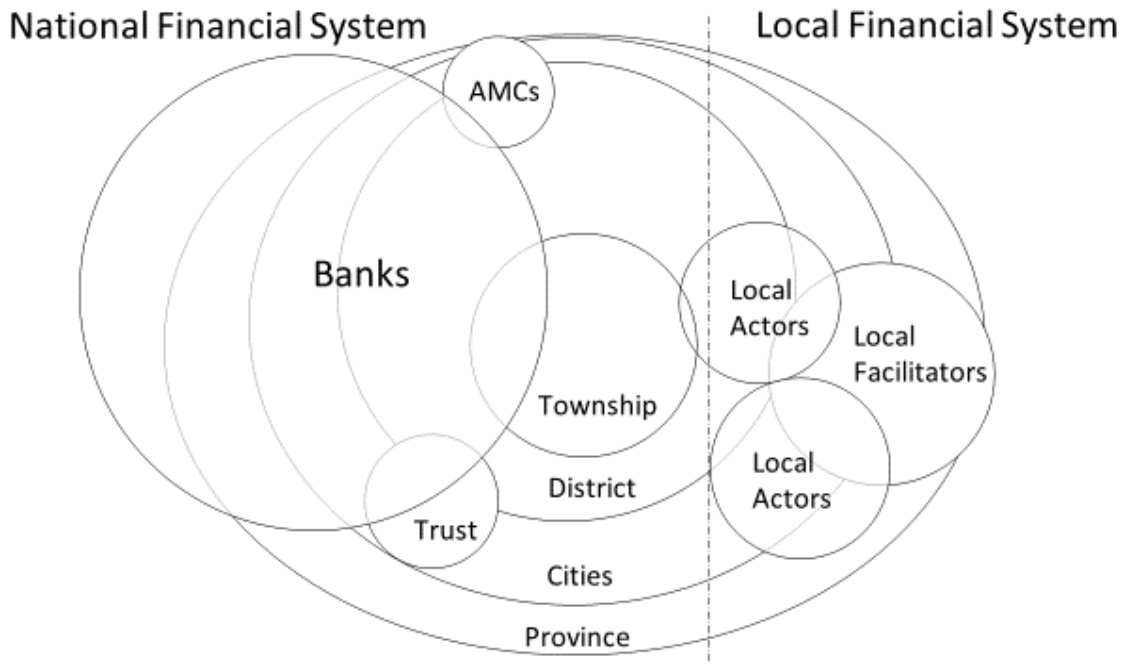


Figure 4.1 Contrast between National and Local Financial System

Due to advantages from local policies, regional banks in Guangdong were working with state owned enterprises closely in Guangdong province. Bank 6 could be exemplified as a case of SOE and regional bank cooperation in delivering micro loans. From establishment in 1996, through eight years' negotiations with relevant shareholders from 2001, local government and their corporate partners finally reached the deal to invest in Bank 6 after approval issued by CBRC. The first commitment from major shareholders is increasing capital by any means. For example, the city planning office and district treasury had deposited funding to this bank as support for local financial institutions. Besides local government, a large state owned corporation as the investor also demonstrated significantly commitment in finance by equity and deposit. As soon as raising sufficient funds, investors acquired several financial licenses, such as trust, private equities, insurance, leasing, mutual fund and securities. By building multiple financial arms,

this bank was looking forward to diversifying its funding sources and bypassing banking regulations.

Guangdong also offered examples of tensions between regional authorities and national lenders. Compared with the majority of MLCs located Guangzhou, Guarantee companies were mentioned less in interviews. It has been descripted in 2013 as the year of winter for local firms as there was a battle between banks and local financial authorities. Banks complained to local government for poisoning their portfolio by toxic assets through guarantee companies. Local government was blamed for not being able to control the risks in the cooperation between banks and guarantee companies. Banks stopped cooperation with most of the guarantee companies except state owned ones.

Although there was tension between regional lenders, they were dependent on each other in the regional lending network to share the risks and operation as a unity. Particularly, local government helped the banks to reduce non-performing assets through asset management companies owned by local authorities. The local government also helped local enterprises to deal with banks in the interim examination during a credit cycle by guarantee. Most banks applied interim examination as risk control mechanism which required borrower to repay the money temporarily within the lending cycle as proof of their capacity to repay. Some borrowers were not able to repay at the specific date and approached private lenders for a bridging loan. Therefore, local government was the incentive for initiating a fund to help borrowers in dealing with interim check. Guarantee companies were asked to participate as credit enhancement agent by local

governors. However, apart from SME lending, local government also used the fund as a catalyst to support its infrastructure plans.

In sum, private economy in Guangdong was not only derived from the development of private economy, but also supported by overseas remittance and exports amassed by Guangdong diaspora in the Southeast Asian countries (Chao and Deng,2009; Ou, 2010). The favourable environment in Guangdong supported local small business to grow and to prospect. Since the insufficient supply in financial service, FinTech firms in Guangdong attempted to fill the gap by utilising hard information from the information services providers and banks, but also applying the soft information from local government and lenders. The mechanism will be explored in the next section.

4.5 FinTech Service Clusters

FinTech firms filled the gap in Guangdong in four aspects. First, funding source started to move between regulated national lenders to local lenders. Through FinTech lending firm, individual cash assets could be managed alternatively given the rare option of wealth management for working and middle class people. They are living in social class between deprived and high net-worth individual (HNWI). This alternative option allowed individual investors to put their money into trust companies with the only purpose for re-financing local lenders and their borrowers with less intermediation or permission through regulated financial institutions and their regulators. Second, FinTech lending firms enabled and accelerated the innovation of SME lending process. New firms learned lending method, particularly risk management process, from lessons of regulated financial institutions. Third, the acceleration occurred in transition because new firms needed efficiency and

effectiveness in building competitiveness against regulated lenders. In addition, by having less regulation on expansion, new firms could easily set up service agents in new areas where regulated financial institutions were hardly reach. Last but not the least, FinTech lenders went across to different tiers of localities, from township to province, which largely filled the market gap left by regulated financial institutions due to expansion constrains from national regulators.

Figure 4.2 classifies how FinTech firms gradually reshaped regulated financial services. Apart from three coordinative effects above, those lending firms created new regulatory space and self-regulated networks when national legislation was absent. Those networks represented as tactics of FinTech lenders when there was need of market order but lack of strategy from regulators. Interviews have demonstrated that emergence of FinTech lending activities were not formalised by FAO when authorising these companies. As a result, a wide range of FinTech lenders settled with non-opposition or even encouragement attitude from local regulators.

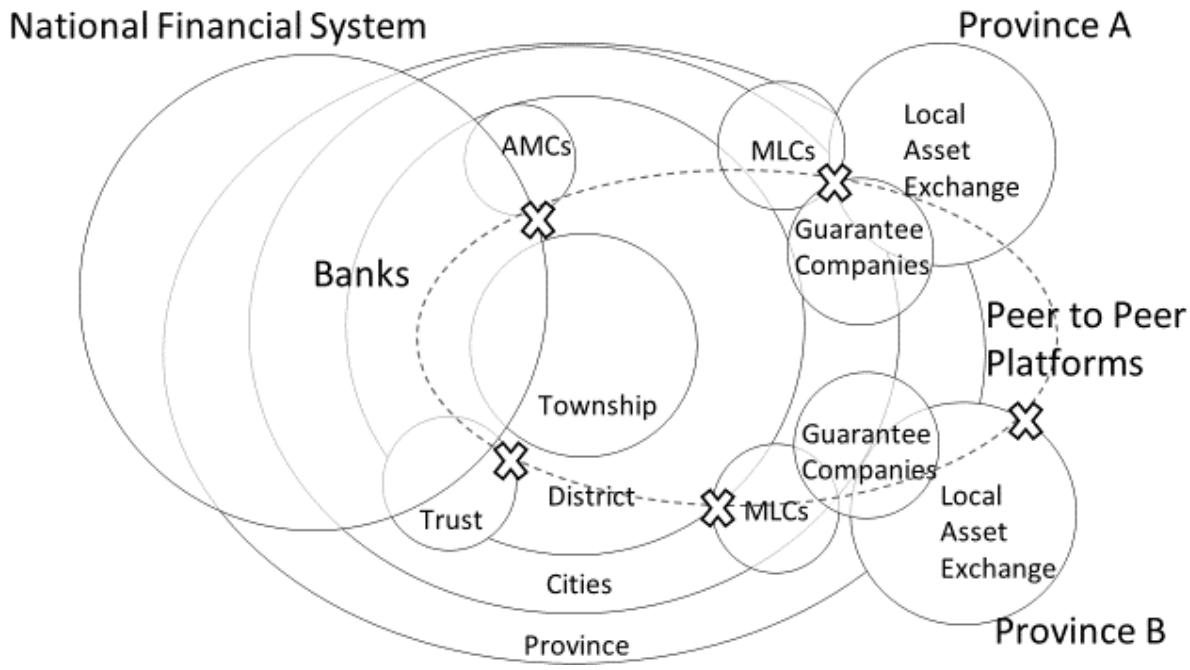


Figure 4.2 FinTech Ecosystem in Guangdong

Note: P2P firms were added and depicted by dash lines, which bridged all the lenders from regional to national and circulates information and capital in an informal but alternative approach. Five dots represented the increasingly strong linkage where FinTech firms filled in the gap of local financial service.

This section has two functions. First, this section depicts the business ecosystem of FinTech firms in Guangdong in terms of where are they from, what are their characteristics and how are they related. Second, this section explores the motivation of FinTech firms in Guangdong and how to they motivate their employees. This section expects to identify the driving force within FinTech firms in Guangdong and illuminates discussion in the next chapter.

4.5.1 FinTech Ecosystem in Guangdong

Table 4.7 summaries the background and motivation of difference FinTech firms. There are three trends of FinTech firms in Guangdong which have be identified from interview data. First type of FinTech firm founders had large amount of investment and ownership in the business and the business receives limited finance from outsiders. They were comparatively older people than the other

founders and have sophisticated business networks. Very often the founders would position its younger families into executive position of the company so that grow with the business.

The second type of FinTech firm founders had background in investment banking and their firms were actively seeking funding to expand their businesses. They were also elite graduates from Peking University, which was top tier higher educational institution in China. They formed embedded or arm-length network with students and staff from Peking University Shenzhen campus and knew each other in same class societies or alumni.

Last type of FinTech firm founders had quite years of working experience in banks. They recruited their junior staff from previous employees or referees in banking system and used the knowledge of banks to deliver services in FinTech firms.

Table 4.7 Entrepreneurs Type of FinTech Firms

Type	Characteristics	Code
One	Local provincial business	P2P6
		P2P2
Two	Peking University	P2P1
		P2P5
		P2P4
Three	Banking veteran	P2P3
		P2P7

Source: Formal Individual Interview Data (December, 2013)

Three types of firms implemented their strategy by utilising its resources in providing credit to SMEs in Guangdong. Each type had its resource or to lend through its own approach. Those resources and capacities embedded into an ecosystem in which the FinTech firms cooperated and competed with each other

and diversified the financial services in Guangdong. That ecosystem consisted of knowledge from founders, investors, information engineers and regulators who have capacities such as alertness and opportunity seeking.

There are three illustrative examples of firms identified from interview data. Those firms have strongly inherited from local business networks and grown in Guangzhou and Shenzhen. For example, P2P-2 was traditional Chaoshan Merchants where the early Chinese diasporas came from in the 19 and 20 centuries. The founder of firm inherited family business in manufacturing and transformed his guarantee companies into FinTech firms. He also held a seat in local political arena. The founder of P2P-6 came from a large private mining industry corporation owner from Shaanxi. The founder expected a transformation from into finance as market downscaling in mining as well as his son inherits his wealth. Although there was a few disagreements between two generations, both of them were satisfied with the company and confident of the market. This company had an office in Guangzhou but its head-offices was in Beijing. According to this firm:

> We [the company] are not banks and we understand the distinction between us and a bank. In the future I wish we can have banking license, but we will still working with borrowers and investors who are not able to be taken care of by banking licence holders (P2P7-VP, 21/10/13, Shanghai).

The second group is consisting of three FinTech firms that are founded by elite graduate from Peking University. There were two firms in the interview have offices at Guangzhou and Shenzhen, and one head-office in Beijing. It correlated to the dual campuses of Peking University (main campus in Beijing and a second in

Shenzhen). The founders knew each other very well since campus life either from alumni networks or from their degree courses. All of them appraised the opportunity given by Peking University. Even their career path has high level of proximity where they started with investment banking industries and moved to FinTech firms' track after they bored with routine work. Through their careers they have accumulated their network of technology investors and knowledge of firm growth in technology sector. Their motivation in alternative finance comes from not only lending but also alternative deposit function of P2P firms, as outline by one interviewee:

> We are proactively pursuing any licences that needed for wealth management business. However what we are different is not how we raise capital, but how we use them. The money should be used in real economy, not somewhere you will never been told by financial institutions (P2P5-P, 20/11/13, Shenzhen).

The third group were made of four interviewees who had consolidated background in banking sector. They firmly believed the banking knowledge was the core capacity to alternative finance as an understanding of risk management through the lending cycle was required. One of them was an early pioneer generation of Chinese Microfinance sector in Shenzhen. The founder was a pioneer in Ping'An Group and Ping'An bank before she co-founded one of the earliest local Micro-lending companies. She and her son, who was a Wall Street banker before joined FinTech firms, founded this firm with her previous colleagues. Another example was a Shaanxi firms set up his own business after becoming bored working in banking sector. He claimed that he was inspired by financial innovation as P2P which provides alternative lending capacity for SMEs. He had extensive

connection with local government officers and the deputy president of Shaanxi merchant organization in Shanghai, where his company Head-office. One interviewee is the high position executive of lending arm of a large real estate company in Shenzhen. He also has early knowledge in banking sector but from People's Bank of China which was regulatory perspective. He was fond of reciting his stories in PBOC as a political fortune in his career. It also indicated his personal networks and its implementation of his success in the current company, as described during the interviewee:

> I worked at the PBOC in the early 1980s and had some acceptances over there. Many of my old friends and former schoolmates from PBOC Graduate School now worked in the public and banking sectors, which was particularly valuable resources for micro-lending industry (P2P2-P, 18/11/13, Shenzhen)

These networks between FinTech firms mirrored pluralistic ecosystem in Guangdong. On one hand, the traditional business and cultural heritage embedded within social networks, particularly at Shenzhen and Guangzhou. One the other hand, new networks of firms emerged with influx immigrations which brought existing but remoting resources of firms into new location. Two types of networks emerged into a new ecosystem that bonded with old networks as well as bridged new social relationships. Their relationship recalled the economic sociology theory on embeddedness (Granovetter, 1973; 1985; Uzzi, 1999). In the next chapter, these two networks will be explored by using the theory of social embeddedness in further detail.

4.5.2 Motivation

The commonalities of three types of FinTech firms were the capability and sensitivity of identifying gaps in financial system as opportunities of business growth. The first type of FinTech firm had experience from established family businesses in non-financial industries while they were willing and desire to develop financial arms at the particular time. The expectation for the transformation was access to financial services which has been dominating by special interest groups over past decades. It was important for them to occupy a space before regulation was developed and limits newcomers, as has happened in other industries. The second type of FinTech firms learnt the business model and knowledgebase from predecessors in the finance industry and have imitated through start-ups. The third group challenges the existing system by utilising accumulated human resources and knowledge from their old colleagues. Along the development process some of the firms in all three groups evolved through learning.

FinTech lending firms helped the integration between national lenders and regional lenders. Although they were not yet positioned with a regulatory framework (either national or regional), they formed a position between the two systems. This integration, on one hand, was driven by firms which had banking background and worked in regulated financial institutions prior to establishing their own business. Two interviewee (P2P3, P2P7) felt a lack of motivation in banking institutions because their vision and methods could not be accepted in the hierarchy. They knew the rules and people in the national financial sectors but were determined to create their own business in the same sector. On the other hand, the integration was pushed by people who had strong binding with local

lenders, as well as political and academic relationships. They understand how to solve problems locally and who were the right people to approach in the enterprise creation process. However, the value of them and their relationship was not valued in regulated national lenders given the centralised control and coordination ecosystem. Their talents therefore had been depressed in the regulated financial space. FinTech lending firms, as a new space where those talents in lending practices could be expressed, connected systems between regional lenders and national lenders through their entrepreneurship.

There were also differences between generations of firms. Those differences appeared significantly on their attitude towards funding source, power and strategy of their companies. Peking University graduates were more likely to be able to secure venture capital (VC) investors to expand their business. They identified peer-to-peer finance as new buzzword in technology sector. Compare would graduate entrepreneurs' and their interest on VC investors, conservative family business owners in Guangdong tend to use its own money to invest its own business so that they can keep absolute control of ownership and decision making authorities. They seemed less interested in the capital market but diversification of family business portfolio. In terms of their career choices, senior banking veterans were more intent to work in micro-lending companies, rather than peer-to-peer lenders.

During the interviews (P2P-3, P2P-7), bank veterans put direct concern over young and internet linked companies which was often regarded as "non-sense in banking sector and poor knowledge in cycle of credit risk". On the contrary, VC back-up FinTech firms were devoted themselves to FinTech firms expect lending

processes as a minimum requirement of safety. They are more interested in representing themselves as safe than having expertise in lending risk controls. Specifically, they expected their firms could be listed somewhere after years of operation and rounds of investments. Compare with their enthusiasm towards capital market, risk assessment is more appropriate to be a crucial process of credit manufacturing. The older generations, however, devoted themselves into new business as incubation for their younger generations.

Firm founders had also the motivation to build a successful firm in financial service, but also embedded their vision into human resource management. Table 4.8a and 4.8b below outlined the progression of debt based securities lending firms from data collection. The number of new borrowers or amount of new loans were set up as key performance indicator (KPI) to measure productivity of loan officers and investment advisors. This measure pushed loan officers and investment advisor to work as very hard in loan origination. As a result, securities based lending intended to actively originate loans through large labour forces. Compared to market place lenders, most debt based securities lenders occupied large physical presence in different cities and towns to contain their labour force, rather than use digital arms to approach customers. Generally, these firms grew and expanded into or out of Guangdong as a strategic process of national scale.

Table 4.8a Characteristics of Debt based Securities Lending

Firms	People	Office	Established	Portfolio Management in 2013 (RMB)
P2P1	30000	120	2006	20 billion
P2P3	300	6	2012	0.4 billion
P2P7	500	8	2012	0.85 billion
P2P6	800	12	2011	1.5 billion

Table 4.8b KPI for Loan Officer per month

City	Junior Staff			Senior Staff		
	Salary	Bonus	Condition	Salary	Bonus	Condition
Tier 1	6K		>500K	8K		>650K
Tier 2	5.5K	30% S	>400K	7K	Seasonal	>500K
Tier 3	5K		>300K	6K		>400K

Source: Interview Data

FinTech lending firms normally own large amount of sale force on both lending and borrowing side. The team is normally led by department director who manages hundreds of cities and tens of thousands people together. In each city there is a city manager who administrates 5-10 sales teams in which there are about 8 members each. Between city managers and department directors, there is sometimes regional managers who coordinate the regional distribution of labour force and geographical extension in each province. The danger is when city managers or even regional managers leave, the structure of the company is challenged. Interviews in Guangdong revealed several surprising stories about brain drain within the company.

The P2P-2 has nationwide representation on lending and investing. Nevertheless both sides have more than one department in similar operation. For example in the lending side, two departments were delivering similar services but at different localities. Each department of sales select their territory one year in advance and set up companies over there in each city once the Head-office approved. Therefore two directors were competing with each other in the practice. During the interview, it was introduced that there is one city where two departments exist and they were desperately competing with each other. Both sides treat the other as the

vital opponents as if there are no other players on the ground. The split is the result of the executive director leaving in early years when the companies were challenged to lose lending functions. After this event the founder permitted two selling divisions to guarantee the organizational resilience.

4.6 Embedded Financial Ecosystem in Guangdong

FinTech firms have different strategy in providing credit to SMEs compare with local banks. The table 4.9 below highlighted the characteristics for actors within the financial system of Guangdong in two lending approaches. It illustrates that FinTech firms is a sub-system based on local financial ecosystem. FinTech firms embedded with complex, fluid, flexible and permissive business ecosystem that is typical of a context of regional and informal in the economy. On the contrary, banking sector was characterised by its lack of coordination, policy orientated objectives and control by higher authority. FinTech firms were therefore not opposed to centralised financial system, but developed an entrepreneurial approach. The transition from authority provision to firm and combination provision of financial service were therefore emerged. Whereas banks prioritise permanence, safety, resilience and ownership, FinTech firms enabled flexibility, innovation and bottom-up approaches business model and value.

Table 4.9 Comparison between FinTech firms and banks in Guangdong

Factors	FinTech Approach	Bank Approach
Motivation	Motivation occurs due to entrepreneurship, which constantly discovers and eliminates market gap and maladjustments.	Motivations are made to deliberately impose coordination from above via coercive commands, orders, and regulations which emanate from the authorities.
Drivers	The actor of the process is man who conducts and exercises creative actions.	The actor of the process is the manager and the public officials who follow the administrative orders and regulations.
Customer Relationship	The links between providers and customers are a service which is guaranteed by contractual.	The links between providers and customers are mandate; some people command and others obey.
Employees	Employees are motivated by the number of originated deals	Employees are motivated by the size of the originated deals
Communities	Regulated by social norms and interpersonal trust within certain type of cultural and market ecosystem.	Regulated by commands and regulations which appear as written laws and conduct by government officials.
Business Ethics	Follow family and community norms which have evolved from custom, and they incorporate an enormous volume of practical experience and information which has accumulated over many generations.	Follow commands and regulations are deliberately issued by the organized authorities with weak respect to civil society.
Regulators	Regulation is understood as the universal order and access to information, finance and justice	Regulation is understood as entrance requirement, code of conduct and protection of established financial discipline

The prevalence of FinTech firms in Guangdong could be attributed to different reasons as Guangdong has been the hub of many industries and private economies. What could be drawn from this chapter is the contribution of local business networks to the growth of FinTech firms. The FinTech firms implemented their strategy by utilising its resources and resources in its business network. Each types of FinTech firms had its representative capacities to support them reach their

goals. Those capacities and characteristics were embedded in a network in which the individual social groups and firms cooperate or compete with each other and enriched the diversity of financial services locally. That embedded network consisted of human, capital and intellectual and institutional component which added through alertness and opportunity seeking from firm. Family business is one of the dominating forces of FinTech firms in Guangdong. Most of the lenders were funded by private capital. Previously private economy was prohibited from lending business by law and regulation. However, as the Internet involves with credit intermediary, new type of funding source was channelled into local business with the umbrella of technology. The channel brought capitals to the local network of borrowers with network of lenders which has never been safer than before. By incorporating the local business with elite graduates and bank veterans, FinTech firms were embedded with both local networks and national capital in Guangdong.

The embedded relationship between FinTech firms and its customers, investors, local governors, university scholars as well as banks created tacit knowledge in local financial system. FinTech firms in Guangdong accumulated and evolved their tacit knowledge through operational processes and alternation of organizational routines. To better understand FinTech firms in Guangdong and their role in providing inclusive credit to SMEs, following chapters will examine the operational process of FinTech firms (Chapter 5) and their alternation of organizational routines (Chapter 6).

4.7 Conclusion

This chapter focused on the financial institutions lending to SMEs in Guangdong and identified gaps and solutions in the regional supply of credit. By identifying lending gaps in regulated financial institutions in serving SMEs, this chapter highlights that FinTech firms played an important role in filling some of these gaps through the application of new technology and the use of embedded social networks..

Regulated lending institutions established large networks and significant outreach in Guangdong. In spite of increasing physical access to urban areas in Guangdong, the capacity of lenders were constrained by hierarchical and institutional barriers. Asymmetric information and power between big banks and small & regional banks blocked, delayed and excluded SMEs from being able to access external loan finance. One problem was the inability at all levels of banking were able to expand and adopt information technologies. Bank were obliged to participate in interbank transactions where banks gained majority of profit from margins of capital, whereas local branches and sub-branches were mandated and supervised by the CBRC to borrow and lend locally with different bonus structure and practice requirement. Loan officers in local branches had to balance the KPIs in payroll and promotion, which were developed as daily routines and KPIs of local banks and staff refined by banking regulations in Guangdong. Local lenders were neither unable to create a better financial system using its own authorities given fragmented governance and centralised administration, which was similar to the central government's approach. The inadequate communication and connectivity

between different layers of governance above the district level evidently placed a burden on local lenders.

FinTech firms emerged in Guangdong, benefiting from the regulatory, cultural and business environment. They were largely peer-to-peer lending firms utilizing information and communication technologies as a credit intermediary. Founders of FinTech firms came from the banking sector, technology firms and local business families and they co-created FinTech firms networks using established business connections. Their initiatives overcame barriers from regulated lending sectors and bridged new forms of lending services with local and existing knowledge. The absence of regulation created an environment which they were able to scale and spread across the province to the whole country.

The comparison between regulated lenders and FinTech lenders highlighted the co-existence of two lending approaches and the co-creation of lending ecosystems in Guangdong. Explring and understanding the provincial financial ecosystem was not enough to explain the complexity of FinTech service in Guangdong. The following chapter examine how FinTech firms utilised resources and embedded social networks in the lending process. In addition, differences in lending processes will be explored based on examining the heterogenetic resource backgrounds of FinTech firms.

CHAPTER 5
EMBEDDED LENDING PROCESS OF FINTECH FIRMS

> "I have been thinking a question for over ten years: What the Internet cannot change? The bigger my company grow, the closer I feel to the answer of this question. [There are] two things the Internet, and [broadly speaking] the technology, cannot change. One is 24 hours in a day and the other is humanity (Chairman of Internet Finance Club 1000, Tang, 2015)."

5.1 Introduction

The previous chapter summarised three emerging actors of FinTech lenders, which represented the emergence of FinTech firms in the Guangdong for the SMEs and individuals. The importance of FinTech lending was the additional access to those who were not fully included in current financial systems. In contrast to the FinTech lending firm in UK and US, Chinese FinTech lenders were characterised by scalability in different places and regions (Nesta, 2015a). In particular, Guangdong had the largest population of FinTech lenders in China (Zhang and Hu, 2013; Tu and Hao, 2015; FT, 2016).

There are three types of lending process that will be identified in this chapter from interviews with Guangdong FinTech firms: marketplace lenders, human agent lenders and commodity pledged lenders. Firstly, marketplace lenders utilised information and communication technology to market their services and control risk. Secondly, human agent based firms expanded through large scale sales recruitment and centralised risk assessment centres from the Head-offices. Thirdly, commodity based lending firms employed a collaterals based lending method to control risks and invented three business models that embedded with local actors and facilitators. All the three FinTech firms demonstrated that the

internet based decentralised technology was deeply embedded in conventional financial systems both socially and institutionally.

Three forms of embeddedness have been identified through the exploration of lending processes. First, lending activities were embedded into local technology ecosystems, where they raised capital and hired talent. The instruments and networks attached to the people increased the valuation of firms and delivered their services to the public. Second, FinTech firms were embedded with human agents to expand nationally, and their personal networks were used to grow their businesses. Third, lending firms were embedded with local knowledge and social networks to mitigate risks.

This chapter explores all the above forms of embeddedness through three types of FinTech lending firms, which were derived from their different entrepreneurial background. First, marketplace lenders will be introduced according to their innovation over mobile, search engine optimisation and big data. Then human agent based lenders will be illustrated, particularly regarding their progression to fill market gaps from each city. Last, car mortgage lending firms will be highlighted and their interest in movable collaterals will be assessed. Those characteristics of lending processes were inherited from the backgrounds of founders, but mixed within their different expertise. Through the lending practice, embeddedness will be revealed and demonstrated with empirical evidence.

5.2 Local embedded lending in Guangdong

The theory of social embeddedness has been brought to financial service since 2000 in the examination of the condition of loans from the financial institutions and the price of financial services. In contrary to financial theories, which examined firms from the net present value perspective (Granovetter, 1985; Baker, Nohria and Eccles, 1992; Uzzi, 1999), sociologists identified that financial services were embedded in social relations that critically account in the lending process (Baker 1990; Oliver and Ebers, 1998; Wong *et al.,* 2016). The sociological views on lending were increasingly accepted by bankers and financial researchers, as financial modelling did not always function in the value of small firms and the social capital embedded in their services due to asymmetric information. Therefore, the demand of sociological and geographical theory has been growing since then (Uzzi, 1997; Portes, 2000; Knorr and Preda, 2004).

Financial sociological research has focused on several topics in lending, such as the availability of funds, the affordability of interest rates, the philosophical value of money and politics between banks and firm directors (Baker 1990; Luo, 1999; Agnes, 2000; Knorr and Preda, 2004). These observations effectively filled in the research gap between finance and sociology, yet this needs further exploration as to how technology adaptation has massively changed the image of financial services. Financial research also echoed the necessity to explore the role of ICT in reshaping the customer relationships with banks. With the rise of FinTech firms in recent years, it is also critical to add FinTech firms in the realm of examination in terms of who has been affected.

In this chapter, the operational process of FinTech firms and the relationship between customers, both borrowers and individual investors, and FinTech firms will be examined by using social embeddedness theories (Granovetter 1985). The embeddedness theory explained how economic activities were embedded in the social relations of actors at their specific location, and identifies which heterogonous resources of firms were allocated and valued. The embeddedness was defined as dynamic relationships between economic activities and social relationships that influence the business process management (Uzzi, 1999).

The embedded financial services have been identified through three types of lending process in Guangdong. Customer attracting always correlated with technological practice, where FinTech lenders used social media and data engines to attract clients both from online communities and offline occasions. In addition, technological applications were also applied in credit risk mitigation processes, which credit assessment has heavily relied on. Other risks such as liquidity and mutuality have been hedged strategically by similar efforts through building virtual asset exchange and investors networks. After having these elements, FinTech firms would seek further growth by either capitalization or geographical expansion. By any means, those growth trajectories were measured by valuation methods for the capital market. Last but not the least, FinTech firms actively sought to attach power and political hierarchies, on both a local and national scale, in the name of reputation and protection when universal regulation was absent. All those integrating in FinTech lending firms with other actors of local financial systems indicated that FinTech firms were additional to the regional financial ecosystem,

but they were not disruptive actors against the conventional industry. Table 5.1 below outlined the embeddedness within the lending process.

Table 5.1 Types of Embeddedness on FinTech Firms in Guangdong

FinTech Firms	Embeddedness	Data Code
Marketplace	Use data engine and social network to increase valuation and market size;	P2P1, P2P3, P2P4, MLC-2
Human Agent	Use human agent to attract clients and secure funding of loans;	P2P6, P2P7, TU1, MLC-1
Collateral	Use commodity and vehicle as collateral and local knowledge and relationship to mitigate risk	P2P5, P2P2, TU1, GC-1

Marketplace lenders embedded their customers, both borrowers and lenders, with technology components such as data engines and smart devices. To fulfil their demand for growth, they were either dependent on technology providers or venture capitalists to support their expansion, who are both well established in Guangdong province as part of the business infrastructure.

Human agent based lending is driven by loan origination rather than information immediately compared with marketplace lending. In Guangzhou and Shenzhen, the amount of deals originating from this type of lending firms was largely dependent on clients attracting the capacity of loan officers and investment advisors. On one hand, loan officers were expected to explore the market on their own, by networking with potential clients or by utilising their social networks,

including family ties, to expand business. On the other hand, they relied on their investment advisors to attract investors with a similar approach.

Another type of lender, which contradicts the first two types of FinTech lenders, uses tangible assets as collaterals in SME lending. It also distinguishable from regulated financial institutions with fixed collaterals in SME lending, and this type of FinTech lender required movable assets from borrowers. Some car mortgage lending firms were transformed from pawnshops or guarantee companies, where the techniques of car investigation were embedded. The others were transformed from other types of FinTech firms due to the failure in controlling the risk of loans. Although embedded with technological intermediaries, both debt securitised lenders and car re-mortgagors preferred old school fashions in attracting clients and mitigated risks. They also embedded themselves into political and power hierarchies.

This chapter aims to contribute to sociological and geographical theory on FinTech in three ways. First, it focuses on the implementation of ICT in financial services by which the social and spatial attachment is embedded, thereby adding technology into the sociological and geographical research of firms. Second, as an alternative approach to conventional banking services, FinTech firms will be studied in relation to their use of local and social relations to operate business by attracting customers and recruiting employees. Third, this chapter will reveal how FinTech firms utilised movable properties to mitigate risks, which has been neglected in academic research yet deserves attention in the context of small business finance in Guangdong.

5.3 Marketplace Lending

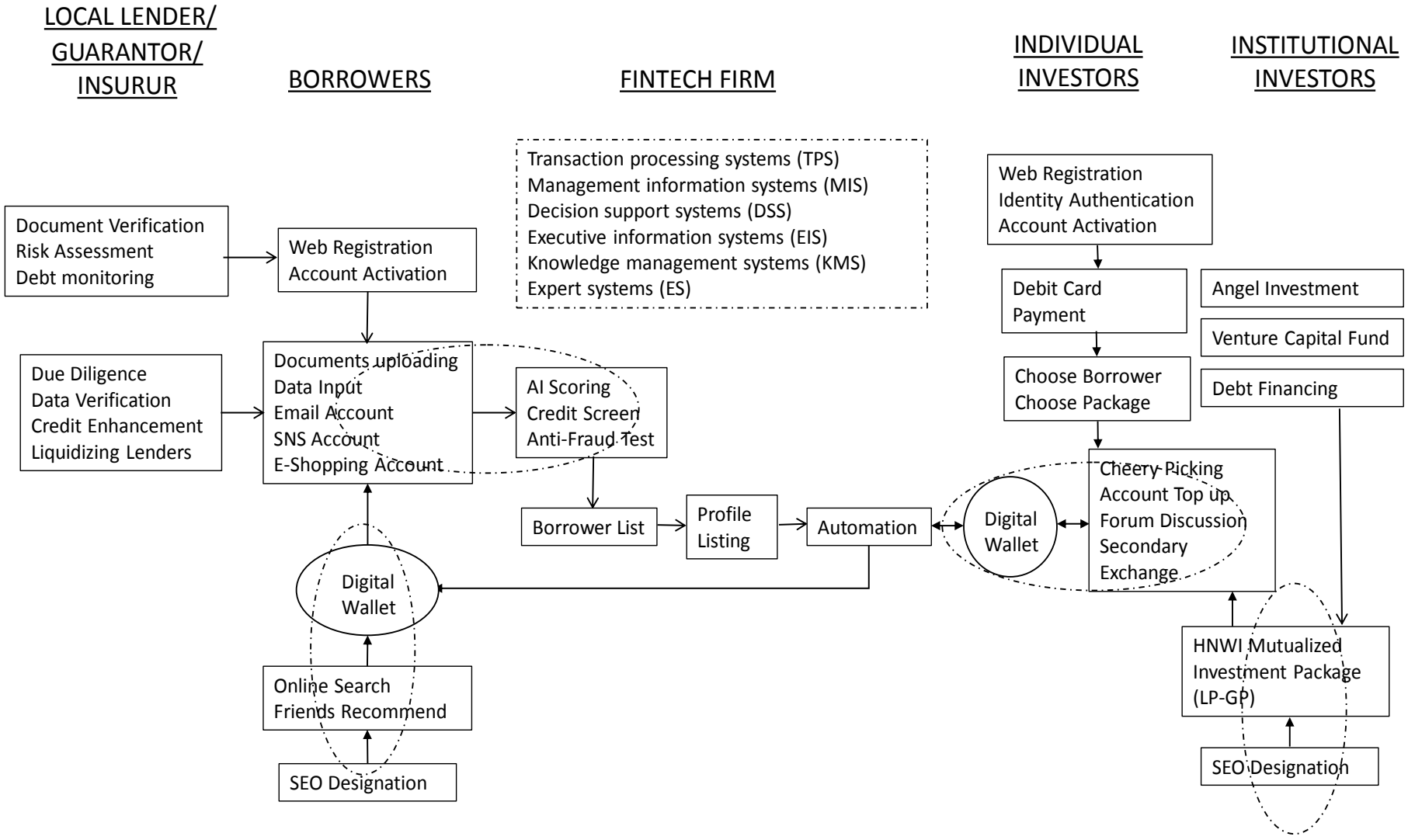
The marketplace lending model was the original FinTech online lending model, where a digital firm linked borrowers and lenders in personal or business matters by online auction. Their business growth largely relied on the visibilities of internet communities and rate of transformation of web browsers into service users. They would invest in informational tactics and strategies to increase their competitiveness, such as digital marketing. This attracted both borrowers and investors through several technological interfaces, digitalised verbal information to support lending decision making and increased capital liquidity.

Two types of technology drive the knowledge formation and regeneration through the FinTech firms' operational process in Guangdong. The web based technologies enabled effective communication between people through virtual environments. By this technology, FinTech firms secured the location of borrowers and monitored the quality of driving vehicles through the Internet of Things and GPS tracker. Second, social networks embedded on smart devices, such as WeChat and Weibo, accelerated the information transmission between individuals. Those applications not only brought information exchange, but also catalysed money circulation between individuals and firms. Individual borrowers and lenders were able to use embedded payment functions in the social network applications to make a deal, which was not possible in inter-personally lending in Guangdong. While technology advanced the lending process of FinTech firms, at the same time, it caused new types of financial exclusion in urban areas of Guangdong in the SME sectors. Marketplace lenders were characterised by their embedded lending methods with information and technology communication (ITC)

instruments. These embedded practices started with the client being attracted by the data engine and information digitalisation from everyday life. From the investors' side, firms established online forums for information and secondary asset exchange. They have also built artificial intelligence to support decision making.

Figure 5.1 below outlined elements in technology embedded lending firms with highlight where the embeddedness were in the lending process. There were five actors and facilitators that have been embedded in this type of lending firms: local lenders/guarantors or insurers, individual borrowers, firms, retailing investors and institutional investors. Borrowers updated their request on the website where registered lenders were eligible, accessing their information from computers or mobile. After identifying the best deals, individual investors could lend on the website for borrowers with bidding yield in the portfolio. The firm provided risk assessment and information disclaimers to help investors who to make decisions. Therefore, customers' preferences led different individuals in choosing levels of yield against risk. Three important relationships were formed along with this type of lending process between borrowers, individual lenders and firms as intermediaries, which was highlighted in figure below. Beyond individual borrowers and investors, in the context of Guangdong, marketplace lending firms were not restricted to peer-to-peer (linking High Net-worth Individuals (HNWIs) to borrowers) format, but also institutional funds were linked to SMEs. Local lenders, guarantors and insurers were also involved in the marketplace lending process to empower the stability and scalability of the firms.

Figure 5.1 Marketplace Lending Embeddedness



The lending process on marketplace lenders applied technological tools, such as Search Engine Optimization (SEO) and Management Information System (MIS). Their technological equipment demonstrated their embeddedness in the TMT sector and the business model endorsed by venture capitalists. Those features were outlined below in Figure 5.1. Three types of embeddedness have been identified from the interview. First, FinTech firms used mobile phones and social network applications to attract customers by utilising digital and field marketing. Second, FinTech firms developed their services upon existing internet service providers such as SEO, software architectural and digital wallets. Third, FinTech firms absorbed venture capitals from BATs and large corporations, where the founders have been working and social attachment with those large information service providers. Three types of embeddedness included both embedded and arm-length ties (Uzzi, 1997, 1999), which significantly indicated the existence and the evolution of social embeddedness in the FinTech sector. The dash lines highlighted the position of embeddedness in the lending process.

There were three marketplace lenders from Shenzhen which were investigated in the field study. With the exception of one, whose head-offices was in Shenzhen, the other two were regional branches, but have their head-offices in Beijing and Shanghai. All three firms received venture capital investment.

Table 5.2 Marketplace FinTech Firm Screen

Data Code	Established	Number of Interviews	Interview Code	Investors
P2P1	09/2006, Beijing	1	P2P1- DCM, 20/10/13, Beijing	IDG, USA
P2P3	04/2013, Shenzhen	1	P2P3-CTO, 09/11/13, Shanghai	Smart-pay, HK
P2P4	02/2013, Shenzhen	2	P2P4-P, 30/10/13, Shenzhen P2P4-VP, 31/10/13, Shenzhen	Bosera Capital, Shenzhen
MLC-2	08/2011, Guangzhou	1*2	MLC2-CM, 30/11/13, Guangzhou	

Source: Interview Data

Three characteristics were identified from marketplace lending firms. First, smart phones were significantly used in the process of deal origination between borrowers and investors. The mobile based application played an essential role in customer capture and the transaction process. Second, marketplace firms were highly dependent on large information technology corporations with talents and techniques. Third, the majority of firms were located in developed cities in order to acquire capital assets including debts and equity, which inevitably embedded on local lenders, but excluded the lower tier of cities and borrowers and investors from there. Those characteristics represented the embeddedness of marketplace lenders in the business environment of Guangdong, which will be further explored in the following three subsections.

5.3.1 Mobile phone based Customer Attracting

The mobile has been used by marketplace lenders as an enabler to reach its customers both from the borrowing and lending perspectives. From smart phones in particular, marketplace lenders were able to attract and utilised data to market

their services digitally though smart phone embedded applications. In this subsection, the usage of mobile phones will be introduced in three parts. First, investors were required to register with the online lending firm with their personal information. The registration normally required a personal mobile number, permanent address, email and emergency contacts. This information was saved on the firm's server and became part of the firm's assets. Those individual investors between 18-65 years' old were recognised as fully capable of civil conduct. As relayed in the interviews with P2P1 (20/10/13, Beijing) and P2P3 (09/11/13, Shanghai), the investors in marketplace lending firms were active internet and smart phone users. Individual investors were often captured by virtual contact such as by mobile phone, web browser or data orientation.

There were three ways that marketplace lenders attract customers from mobile phones. On mobile devices, FinTech firms created posters and public events to encourage individuals to download their mobile phone based application. For example, one way of doing this was to have lottery draws in the financial product exhibition, where visitors might stop by and inquire about their services. The transformation from a visitor to a registered customer was completed by scanning a QR code offered on site (Plate 5.1a). Alternatively, those types of promotion also appeared in social networking applications, such as WeChat and Weibo (Plate 5.1b). In the screenshot plate from WeChat, the firm claimed scanning the QR code enabled access to 500,000 RMB loans within a day. The web browser was another circumstance where FinTech firms attracted clients with floating advertisements on a popular website. Those advertisements could redirect web visitors from home pages to the websites of FinTech firms. By clicking those

advertisements or firm websites, visitors created traffic on a specific website, which measured the popularity of an internet based service.

Plate 5.1a FinTech in Financial Exhibition



Plate 5.1b FinTech in social network on mobile phone



The third approach was to attract customers with monetary incentives. There were 50% of marketplace lenders using digital currency to attract individual investors' attention. The digital currency was used as a digital voucher to encourage individual investors to become registered users and then investors in the firm. The investor firstly registered with the firm as a user with their mobile number. A text was then sent as a message to the mobile phone, which was to be input to complete the identity authentication. The digital voucher was then automatically issued after identity authentication, and could be redeemed as digital money saved on the mobile phone wallet. The user could withdraw the money from the digital wallet into their bank account. The wallet was embedded into the mobile application on smart phones, which were downloadable from Apple or Android app shops. FinTech lenders developed their own application in each store and encouraged individual investors to download these applications on mobile phones. In order to encourage mobile phone users to download their application and become active users of the firm, marketplace lenders were giving monetary

rewards to new users with this digital currency, which they issued themselves. As the CTO of *P2P-3* at Shenzhen mentioned in the interview introduced by their digital money reward scheme:

> "We expect the number of investors to increase with the cash rewarded. We encourage employees to circulate this scheme among their relatives and then promote it on online forums. We wish people to like us and stay with us with this scheme. (P2P3-CTO, 09/11/13, Shanghai) "

This message, as well as other three web-based social network applications, represented the significant usage of ICT by marketplace lenders to capture borrowers and individual lenders as facilitators. It provided an alternative approach for marketplace lenders to attract clients without direct face-to-face communication. The facilitation enabled marketplace lenders to be better embedded within the process of customer attracting without establishing exclusive physical branches.

5.3.2 External Technology Capturing

Apart from using mobile applications to capture customers, marketplace lenders also utilised other technologies to advance their operations, such as payment, credit assessment, marketing and documentations. These efforts to embed their business into technological instruments effectively built the capability of marketplace lenders to grow and to scale. In the process of technology formation and adaptation, marketplace lenders became embedded in the relationship with third party service providers in Guangdong. This sub-section will explore this type of technological embeddedness between FinTech start-ups and those technology service providers.

The most effective tool used by FinTech lenders in Guangdong was Search Engine Optimization (SEO). It was defined as the process of affecting the ranking of web pages in a search engine's results (Latzer, *et al.,* 2016). The result of a successful SEO led the visitor's flow from search engine to the FinTech firms' websites by attracting web users to click on top ranked search results for keywords. In Guangdong, marketplace lenders often sought technique assistance from tech companies and their professional services to raise their ranking against competition from other places. There were two approaches identified from the interviews. One of them concerned paying a premium service to raise their ranking. Chinese search engines encouraged SME website managers to pay ranking fees to boost their ranks in search results. Driven by competition, increasing numbers of marketplace lenders joined the competition of SEO bidding and this lifted the bidding price, which became a significant cost of operations. FinTech firms needed to promote both borrowing and lending to businesses, which increased the difficulty and cost in the SEO. For example, P2P3-CTO (09/11/13, Shanghai) admitted spending more than 5 million RMB per month on SEO, and the average cost in securing one client is climbing sharply. The other way of increasing their place of ranking is by hiring an SEO specialist to join the company. 50% of firms employed their architects and IT specialists from a home company, where their founders were working. This corporation embedded entrepreneurial network has been described below:

> "Most web architect and start-up owners were ex-employees of tech-giants such as Baidu, Alibaba and Tencent (BAT). Apart from Tencent, there are intensive technology firms in Shenzhen such as Huawei, Zhongxing, Dajiang, Kuaibo etc. They had shaped Shenzhen as the centre of

innovation as well as the hub of technology firms (P2P4-VP, 31/10/13, Shenzhen)."

Apart from SEO, marketplace lenders also embedded credit scoring services. FICO is a US based credit scoring agency and is growing rapidly in the Chinese FinTech sector. Their popularity in Guangdong was due to the exclusion of FinTech firms from the central bank credit bureau and the asymmetric information caused by this exclusion. Although their scores were not accepted significantly by Chinese financial institutions, it provided alternative risk assessment roles for marketplace lenders. The interview P2P4 revealed that small and newly established companies would disburse the loans by taking advantage of risk assessment reports from large firms. FICO, therefore, provided a tailored service pack for those FinTech firms with both conventional data and alternative sources to adjust biased scores towards SME borrowers.

Marketplace lenders also introduced the embedded services on payment systems and software interfaces. The embedded software and payment services were built with shared gateways so that transactional information from borrowers and investors could be dealt with smoothly and systematically. There were three phases included in the transaction network, which started from firms. The embedded software allowed the lending firm to create a virtual account within its system and exchange information and money from customers. This software then exchanged payment information with external payment service providers through designed channels between software virtual accounts and payment provider virtual accounts.

The external service provider worked with different banks and enabled a money flow from bank A to Bank B with limited authorisation from mobiles rather than the bank branches. This function provided the first advantage of lending firms, as it enabled capital flow from one person to the other without going to the banks. Normally, the repayments were collected automatically from the bank accounts of borrowers on the discussed repayment date. The date and amount were set in a fixed term contract, which was additional, but which required borrowers were required to sign. When a loan was due, the repayment were deducted by an external payment solution provider. This transferred money from the customers' virtual accounts to the investors' virtual accounts on payment services after receiving a message from the lending firm. When the borrower was not set up on the virtual account of the firm for payment, the lending firm would notify them by a different means. The ease of capital management provided a second advantage for lending firms. The payment service providers worked with banks closely and managed their total accounts with the capital reserve they secured from the banking institutions. This provided safety and compliance to lending firms and end customers, which became the third advantage of the payment embedded software system.

There were 70% of firms in the interview who admitted they had purchased software architecture from an external provider rather than designing one by themselves. Marketplace lenders chose to outsource software development since it was cost effective and efficient. As Shenzhen was the hub of hardware design and software development, there were adequate options for software patterns of licensed payment companies available for firms to purchase. Within these

software interfaces, marketplace lenders embedded payment components from external service providers. This private payment by firms supported FinTech lending in Shenzhen as it provided a variety of payment services to local firms to utilize in their businesses. From the interviews, it was also confirmed that firms chose Shenzhen as an innovative centre given its leading position of payment and other types of FinTech.

It is clear from this section, that the marketplace lenders utilised technological and geographical advantage to expand businesses from the market gap left by regulated financial institutions. The technology brought scalability, safety and efficiency to financial services towards SMEs. Those technologies have not been accepted by mainstream financial institutions significantly, but have been embedded in lending based start-ups. Shenzhen become a hub city of FinTech firms as the existing business infrastructure and ecosystem for start-ups. The next section introduces a more detailed picture of Shenzhen as the ideal hub of marketplace lender.

5.3.3 Digitalised Business Partnership

Mobile and web search engines provided unprecedented connectivity between lenders and borrowers of an open firm. This connectivity was built in not only virtual space through data from portable devices, but also with established financial infrastructure within cities. The high intensity of marketplace lending firms in Shenzhen has revealed the connectivity between the virtual spaces and local communities in large cities. In this section, these areas of embeddedness will be explored from extended lending partnerships with local lenders and incorporated funding sources from venture capital, particularly in large cities such as Shenzhen.

Marketplace lending firms had advanced interfaces to link borrowers and lenders. However, due to a lack of physical extension in the field, 80% of the firms found it was difficult to maintain a sustainable and stable customer base from both sides. Either they need incentives to attract more investors to finish the deals or they need to capture borrowers to begin deals. To accelerate the deal origination, marketplace lenders partnered with local lenders, such as Micro-Lending Companies (MLCs) and Guarantee Companies (GCs). Marketplace lenders reshaped both lending processes and cost structures through their partnership with local lenders. First, marketplace lenders helped the local borrower to identify potential risks with usage of social networking applications. Second, through selection of borrowers from designated portfolios, marketplace lenders redirected funding from individual investors to local lenders through financial instruments such as Credit Default Swap (CDS) or Credit Title Transfer.

Mobile bills were used mostly in the process of digitalization of data to support lending decisions. After requesting access from borrowers, those firms were able to identify from mobile bills the frequent contacts and when they dial. The lender, in particular, looked at the frequency of calling between borrowers and their families and calling history at the dinner sessions. This tactic helped to understand the characteristics of potential borrowers by examining their daily schedule and degree of intimacy with their families and business partners. It was also helpful in identifying potential fraud from the contact list when suspicious numbers appeared. As the lender described in the interview:

> When odd numbers increased in the frequency of dialling, we will conduct cross checking with borrowers and testify whether our borrower was seeking funds from private lenders. In only 30 minutes, we can understand the stories if the mobile bills could be attracted (P2P3-CTO, 03/11/13, Shanghai).

The reason for such effective identification of risk was due to the digitalization of pattern, which has been used in screening the information on mobile bills. Alternatively, marketplace lenders created their own path in identifying credit risks. One example given from a marketplace lender was called mobile lending, which is described below:

> We are trying to use mobile records to judge risks. If our client has been using the same mobile number for more than 10 years, we will rank him at a high level of confidence. In the past three months we have had 200 borrowers, and no one has evidence in delinquency (MLC2-CM, 30/11/13, Guangzhou).

The restructuring of debt liquidized the local credit market and drew attention from institutional investors in this market. Institutional investors in Shenzhen

paid great interest to marketplace lenders from the perspective of FinTech firms in the Technology, Media and Telecommunication (TMT) sectors. The increase in the number of registered mobile users or web traffic would be regarded by interviewees as the scalability and business, which largely determined the value of firms from the venture capitalists' (VC) perspective. 75% FinTech firm founders from a high technology background mentioned in the interviews that VC or PE investment were the motivation for their operation. As one of the local VC managers mentioned in the interview:

> "Start-ups were intensively allocated in big cities such as Shenzhen, Shanghai and Beijing because of the intensity of venture capitalists and angel investors over there. The advantage of cost, local network and capital richness attracted entrepreneurs to be closer to investors in large cities (P2P1- DCM, 20/10/13, Beijing)"

This description of the geography of start-ups revealed the reason why Shenzhen was one of the most popular places in Guangdong and China for FinTech firms. As recognised by financial technology firms, a FinTech lending firm was regarded as the Technology, Media and Telecommunication (TMT) sector in the venture capitals' field and following the rules of other TMT companies. This rule of growth was different to other conventional financial institutions, where profitability and size of portfolio was a dominating figure in company valuation. Instead, scalability and effectiveness of client attracting iwass key regardless of whether those firms are making a profit. As a result, in order to increase money valuation, marketplace lending firms choose large cities as their head-offices, where potential users were easy to attract and venture capitalists are located around. However, the uneven distribution of the

firms reduced the accessibility of SME borrowers and individual investors in small cities, where fewer VCs were interested. Marketplace lenders also addressed lending risks, which will be explored in the next chapter.

5.4 Human Agents Embedded Lending

FinTech firms were also driven by human agents to originate loans rather than information technology as compared with marketplace lending. They were embedded in major cities in Guangdong and one of the largest, up to 2013, had nearly 120 branches in both urban and rural areas nationwide. Smaller firms entered the market late, but expanded with a slightly different approach. They chose working with local lending institutions, such as MLCs or GCs, to deliver the service. There are 10 interviews which were taken from start-ups in this category, which have been summarized below (Table 5.3).

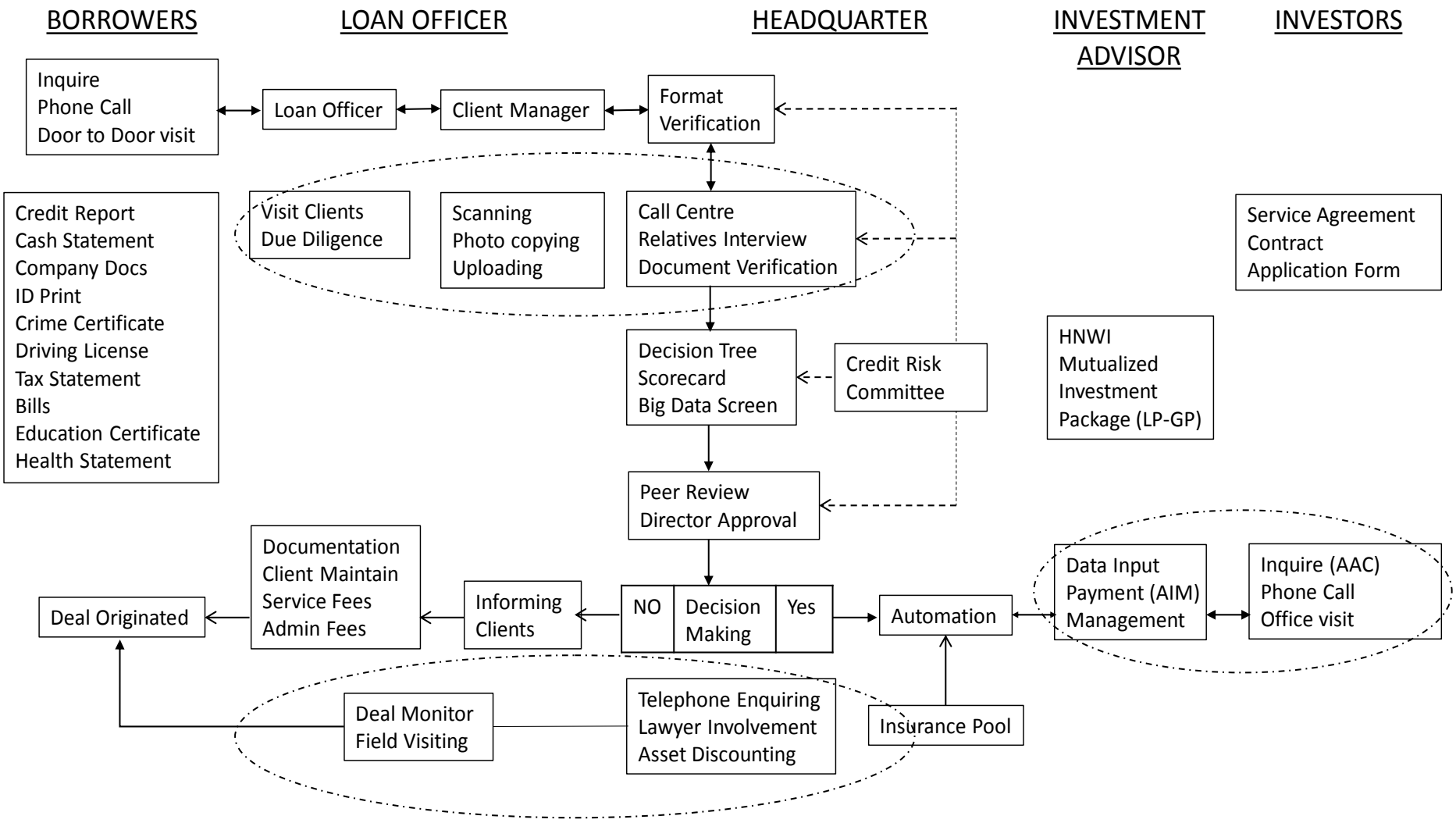
Table 5.3 Human Agents Embedded Lending Firms Screen

Data Code	Established	Number of Interviews	Interview Code
P2P6	12/2012, Beijing	1	P2P6-P, 28/10/13, Beijing
P2P7	03/2012, Shanghai	3	P2P7-P, 21/10/13, Shanghai P2P7-VP, 21/10/13, Shanghai P2P7-VPRM, 21/10/13, Shanghai
TU1	05/2012, Guangzhou	1	TU1-CO, 17/11/13, Guangzhou
MLC-1	04/2010, Shenzhen	1	MLC1-DMR, 22/11/13, Shenzhen

There were three types of embeddedness within human agents' embedded lending firms that are worth highlighting. First, loan officers and investment advisors were required to work outside the office in order to attract clients. They were expected to use personal social networks to motivate friends or families to borrowers or to invest in their employer's firms. To prevent their

fraudulent behaviours, the firms set up a separate division to check the documents and upload these to the centralised information system for borrowers' risk assessment and investor's automated asset allocation. Second, firms built up business branches nationwide aggressively to maximize their capacity of clients capture. The local branches educated local borrowers as to how to attract their credit report from regulators and submit their database for risk appraisal. In addition to credit report, borrowers were also required to submit their residential information from local government to fulfil the risk check, such as mobile bills and housing expenses. Third, firms mobilised local officers to visit borrower's residence and push them if loans were overdue by involving lawyers and debt collectors. Although intermediaries followed the approach with software embedded lending firms to proceed loans, their lending process was heavily embedded with the local business environment. Figure 5.2 below outlined these characteristics. This section will explore how the FinTech lending firms grow with human agents and social relationships embedded with them. The dash lines highlighted the position of embeddedness in the lending process.

Figure 5.2 Lending Process for Human Agents Embedded Lending



5.4.1 Agent Recruiting

Debt securities and security based firms started their operation in the urban areas where they established their head-offices, before expanding to other provinces or regions. There were two types of expansion plans: firm subsidiaries and firm franchising. The former type referred to a firm head-offices setting up its local offices and regional plans by making their own decisions. The latter one allows others to run the business brand after charging them fees or sharing profits. 85% the interviewees in this category chose to use the formal type as the importance of control was critical to its subsidiaries. The cost of the absence of digital marketing and informational management was the increase of human agency costs. They employed their team leader and trained their sales specialists in order to maximise the value of local branches. The largest lender had more than 30,000 agents nationwide in operations since its establishment. One of the trade association leaders described a firm's strategy:

> My logic was as follows: for a firm to succeed, you either have to have an internet strategy, or an army of low-cost foot soldiers. We are old school bankers, thus we decided to lay out a low cost network (TU1-CO, 17/11/13, Guangzhou).

Both lending and borrowing employees are worthwhiling exploring to understand the lending process and significance of embeddedness. On the borrowing side, loan officers started from an internship before undertaking a 6-month period qualification examination. After they become formal employees, they were promoted from junior to senior positions and then team leader. Every half a year, the the Head-offices will re-examine their qualifications by the amount of loan disbursement and non-performing rate. However, a large proportion of the income

comes from the monthly performance, which is given by city managers. There were 75% of interviewees who admitted that the firm organised inter-city competitions and awarded the best loan officer simply according to the number of loans originated. Loan officers were encouraged to participate and devoted themselves and their team-members in the name of teamwork. After forming a team, loan officers were committed their entire life, both during personal and working time, to the lending activities. Their work was called ‘street sweeping’, which means going onto the street and meeting potential customers (P2P7-VP, 21/10/13, Shanghai). They were also required to print cards and posters to paste on the street with their mobile numbers (MLC1-DMR, 22/11/13, Shenzhen). Those practices increased the productivity of debt security lenders, but also introduced cost and risk toward firms. One owner of the firm commented:

> We are constrained not only by risks, but also by cost. The smaller size of the loans, the greater we spend on operational cost. If there are more than 300 staff that have been recruited, there is little profit that can be produced within the current geographical scope (P2P7-P, 21/10/13, Shanghai).

On the other hand, investors were able to select their preferred borrowers online and were provided with the characteristics of borrowers’ information. This process was conducted either by themselves on their laptop or mobile, or with the assistance of wealth management officers from local branches of firms. Attracting individual investors needed a different approach and strategy than capturing borrowers. Firms needed to brand their knowledge in wealth management to convince HNWIs. Investment advisors were trained to understand mainstream WMP in financial institutions and speak their narratives in product promotion. They were advised to make cold calls from the office and meet clients in stock

exchanges or outside banks. Their main objective was to convince HNWI investors that FinTech products were worthwhile in terms of an investment. In order to attract high quality HNWIs, firms also issued membership cards with exclusive access to trips aboard or talks by political and social celebrities. Some investors were brought to rural areas to visit marginalised borrowers as part of investors' education. Apart from membership cards, firms also created podcasts and seminars to educate citizens and attract clients from the ground.

These narratives suggested the FinTech embedded lending firms did not necessarily reduce the overall cost of lending, which contrasted with the decentralized and high efficiency business philosophy of other technology firms. Although marketplace lenders insisted lending immediately through the internet, the other types transformed the technology driven business into a conventional financial practice, which was heavily based on intensive labour forces and their social networks. Those transformed FinTech businesses increased their firm value not entirely through innovation, but also through the expansion of business premiums and venture capitalists.

5.4.2 Agent Governance

In addition to the operational costs, there were more challenges in the local offices on the debt securities of lending firms. Most of the pressure was put on loan officers and investment advisors. Both of the teams were confronted and challenged from three aspects. First, local offices were managed centrally and had to follow instructions from the Head-offices. Second, local officers engaged with local customers in a way which conventional private lenders behaved. Third, local officers were responsible for maintaining relationships with local regulators and

funding partners. Those locally embedded relationships determined the success of lending firms and were frequently quoted in the interviews with practitioners. In this subsection, these lending practices will be explored and embeddedness will be analysed.

Document checking and scanning were the two major events that local staff spend a large amount of time in doing every day. In *P2P Firm 7*, it was essential that the contract was signed in the business premises rather than anywhere else. In this case, after convincing borrowers to visit the office, the loan officer had no further authority in the deal origination. Instead, they should start on-site investigation by asking questions in person. This was the first ground investigation, which did not determine loan disbursements from the local office, they should start submitting paper based ID and documents to the local office of lending firms. Those documents normally included personal credit reports, bank statements, company registration files, personal identification, any crime certificates, a driving licence, tax statement, living bills, education certificate and even health examination report. Most of these documents had to be obtained from local authorities and were at high risk of being made counterfeit. Local officers collected documents by following certain rules and orders set by the head-office.

> Sometimes local officers had to work very late to upload the right format of documents. This was caused by failure to follow the latest version of lending guidance published by the Head-offices. For example, we modified the rule to submit 6 monthly mobile bills instead of three monthly ones as in the old version (P2P7-VP, 21/10/13, Shanghai).

This process consumed a huge amount of time and investment from firms, which, if small ones, were not affordable to develop in both scale and in technology. Some newly established companies, which were not able to do this, have developed a

sort of free-riding method to attract qualified borrowers with less costs. An interview with the Vice President of Risk Management from *P2P firm 7* revealed that:

> Our competitors will use our credit analysis report for qualified borrowers as the only document to disburse the loan. My colleagues in another company told me once the loan was approved by our company, an extra 50K will be leased from them without any other documents (P2P7-VPRM, 21/10/13, Shanghai).

This cooperation and standardization of lending processes had also been identified from the lending side of the business. Investment officers and their regional managers also took on extra challenges other than what digital information systems can cover. Those challenges come from local competitors, local regulators and local customers. Firms sometimes reported each other to local authorities in the name of illegal fund raising. As a result, local regulators started to investigate those reported companies with armed force and yellow banners. These actions did not prove the companies were illegal, but damaged the reputation of firms and created tension between firms and investors. Local investment advisors had to explain their business on the behalf of head-offices to the regulator and customers. More information on investors' protection and management will be discussed in the next chapter.

In sum, the debt securities based firms learned from conventional financial institution by reviewing all the documents and analysing the data validity of borrowers' information. Their practice of risk management was heavily embedded in local knowledge through distance telephone calling and field visits from local branches. After this, clients were identified and documents were uploaded from local staff as well. Compared with data driven mechanisms as marketplace

lenders, the other types of lenders utilized human agents to identify the validity of personal information. The local branches were equipped with professional ID readers and databases of court records for civil residencies. Without their duties to check their background and verify the information, the firms could hardly control the risk hidden in the ground and local social relationships.

5.4.3 Regional Secondary Asset Exchange

To increase the popularity and safety of lending firms, human agent lending firms utilised three approaches to deleveraging portfolios and lowering the risk of the liquidity flow in the lending process. First, risks were distributed through an online secondary asset exchange, which was an embedded algorithm of automation on firm software. Second, loans were re-packaged into structured financial products and sold to public investors by networks of investment advisors. Third, with the support of local government, loan derivatives were swapped at local financial exchanges belonging to the HNWIs through institutional investors. The path of exchange evolved from the private secondary market, but was carried out by human agents to the public secondary market established by the firm or even the local government. This subsection will introduce those different types of secondary markets and risk deleverage mechanisms.

On the investors' side, deals originated from the business premium rather than on the Internet. 74% firms required individual investors to visit in the physical premises of firms. In the luxury decoration space and professionals' induction, potential investors would be expected to be members of an investment club and to put their money from their bank account into the virtual account of the firms. Those retailing investors would receive tutorials as premium service with the

assistance of in-house managers' hand by hand in front of the computer screen. Only 10% of the human agent embedded firms will demonstrate the access of borrowers' lists to investors, while the remainder just demonstrated a name of portfolios without showing the real identity of the borrowers. In order to brand the asset management portfolios and separate the risks, the firm split itself into at least two spinoff consultancy firms. One firm was consulting for the borrowers as an intermediary of information and risk identification. The other side was a fund management firm for the investors as wealth management advisors. 85% of the firms have flexible terms and conditions for investors to change decisions at any time. The others charged punishment fees if investors withdrew money and broke the automation contract.

The secondary market was an essential element of firms, particularly regarding human agent lenders. 45% of human agent embedded firms established a secondary market for investors to exchange invested assets. A functioning secondary market increased the liquidity of FinTech loans, and therefore increases the confidence of investment. Investors, as the result of a secondary market, were offered alternative exit channels of investment additional to maturity of loans. The secondary exchange was also appealing to FinTech firms as institutional investors could also be allowed in the transaction of deals, which improved the legitimacy and credibility of the firms. P2P7 built open APIs on their portfolio to allow external asset management firms to incorporate their products with FinTech loan assets. As one of the CEOs of a human agent firm quoted in the interview:

> The boosting number of P2P firms confused retailing investors. The disordered competition in the market increased the difficulties of choosing where to put money. By building this secondary market, I wish to convince investors we have quicker liquidity options and safer withdraw channels than the others (P2P7-P, 21/10/13, Shanghai).

There are 30% of human agent lending firms who built a secondary market on the online firm, yet the others were distributed offline by investment advisors through their personal relationships. In order to be better embedded into the wealth management market with FinTech loans, the portfolio on human agent firms could then be arranged as General-Limited Partnership (GP-LP), which was a structured fund that is managed by an affiliated company. Through this structured financial derivative, human agent embedded firms were able to secure these existing financial assets to HNWIs and sophisticated investors in their personal networks. Those connections with conventional financial institutions increased the liquidity of portfolios and the popularity of lending firms among both retail and institutional investors. Those techniques of investment advisors of human agent firms echoed with practices of banking wealth management, which contradicted the transparency and efficiency of marketplace lending and FinTech lending firms. Higher returns and shorter transaction periods provided lending firms with competitiveness against wealth management teams from banks. Nevertheless, the firms had to move aggressively to maximise their capacity. Senior people and career entry employees were the targeted clients, with the possibility of money transferring from bank accounts to debt based asset firms.

The FinTech lenders also invested in local equity exchange as shareholders and built their own regulated trading facilities. The advantage of human agent

embedded firms in Guangdong is the advanced infrastructure of security exchange. With the eight local equity exchanges and one national stock market, Guangzhou and Shenzhen were driving Guangdong as a frontier space of debt based security firms. Security firms were involved in the securitisation of FinTech loans as market makers in the local exchanges. In addition, local legal services recognised the electronic contract and modified dispute resolution process. Those efforts would not have been possible without local government support. Previous employees of security companies and equity exchanges were also playing important roles in the FinTech lending sector, specifically in Guangzhou and Shenzhen.

In sum, the growth in human agents lending firms attracted not only individuals, but also institutional investors to this new class and asset. 80% of FinTech lending firms developed the cooperation with institutional investors to accelerate the deal origination and product diversification. The matching process was adjusted from peer-to-peer distributed networks into a centralised counterparty system operated by the firm. On human based lending firms, the role of lenders changed slightly as deals were not originated by two parties, but through more complex processes that were facilitated by the firms. The individual lenders, rather than engage with borrowers directly, chose to deposit their money in a pool of funding that was managed by the firm. The lending process of human agent lending firms indicated the strong embeddedness of their business with individual loan officers and investment advisors. Their personal social networks played an important role in the growth process of FinTech lending. However, it also increased the systematic

credit risk of human agent based lending processes, as few people know how the money of the investors will be used in real time transactions.

5.5 Commodity Mortgage Lending

The commodity mortgage lending contradicted the other types of FinTech lenders, as it used personal assets as collaterals in business lending. Those lending methods were characterised by informal lending in Guangdong, but embedded with technological components in the digital age. This type of lending was also distinguishable from regulated financial institutions by type of collaterals. Commodity based mortgage lenders required movable assets from borrowers. 50% of those in the interview were transformed from pawnshops or guaranteed companies, where techniques of car investigation were embedded. The others were transformed from other types of FinTech firms due to the failure in controlling the risk of loans. There were seven interviews from four organizations interviewed in this category, which have been summarised below (Table 5.4).

Table 5.4 Screening of Commodity Based Mortgage Lending

Data Code	Established	Number of Interviews	Interview Code
P2P5	05/2012, Shenzhen	2	P2P5-P, 20/11/13, Guangzhou
			P2P5-VP, 21/21/13, Shenzhen
P2P2	06/2011, Shenzhen	3	P2P2-P, 18/11/13, Shenzhen
			P2P2-VP, 12/11/13, Shenzhen
			P2P2-CiM, 21/11/13, Shenzhen
TU1	05/2012, Guangzhou	1	TU1-CO, 17/11/13, Guangzhou
GC-1	04/2010, Shenzhen	1	GC-DMR, 22/11/13, Shenzhen

Similar to human agent embedded lenders, mortgage lenders had a large amount of employees that were allocated to different divisions and cities nationwide. The distinctions were the risk measurement, which collateral embedded and required additional knowledge about securities to lending practice. The risk assessment was described more easily than non-secure lending as the delinquency of collateral can proportionally compensate the risk of loss. However, the firm needed to equip themselves with knowledge and skills on the valuation of assets due to the complexities of collaterals.

A commodity mortgage loan could be held against a variety of the borrowers' belongings, such as properties, equity stocks, intellectual properties and vehicles, as collateral for short-term financing needs. Although lending firms had multiple products for borrowers, 95% of loans originated based on vehicles. The procedure of the issuance of a secure loan, in general, included document checking, on-site inspection, contract signing, loan disbursement and redemption. The practices were more heavily embedded in local actors as asset valuation was determined by local agents, knowledge and social networks. First, loan officers were trained to capture clients who had continuous driving records. After a willingness to borrow was expressed, inspections were conducted by local vehicle specialists at the business premium of lending firms. With the agreement of borrowers, the ownership of vehicles would be notified at the local vehicle administration and might even be transferred to lending firms if needed. The head-offices assessed the valuation from its local office and issue a contract and disburse the money. Last, the local office monitored the borrowers with the technical support from the head-offices and collected the loans when due. The loans were then packaged as

wealth management products, which was similar to agent based lending, and sold to the retailing investors. This section will examine these three phases in detail and highlight the embeddedness within the commodity mortgaged lending practice.

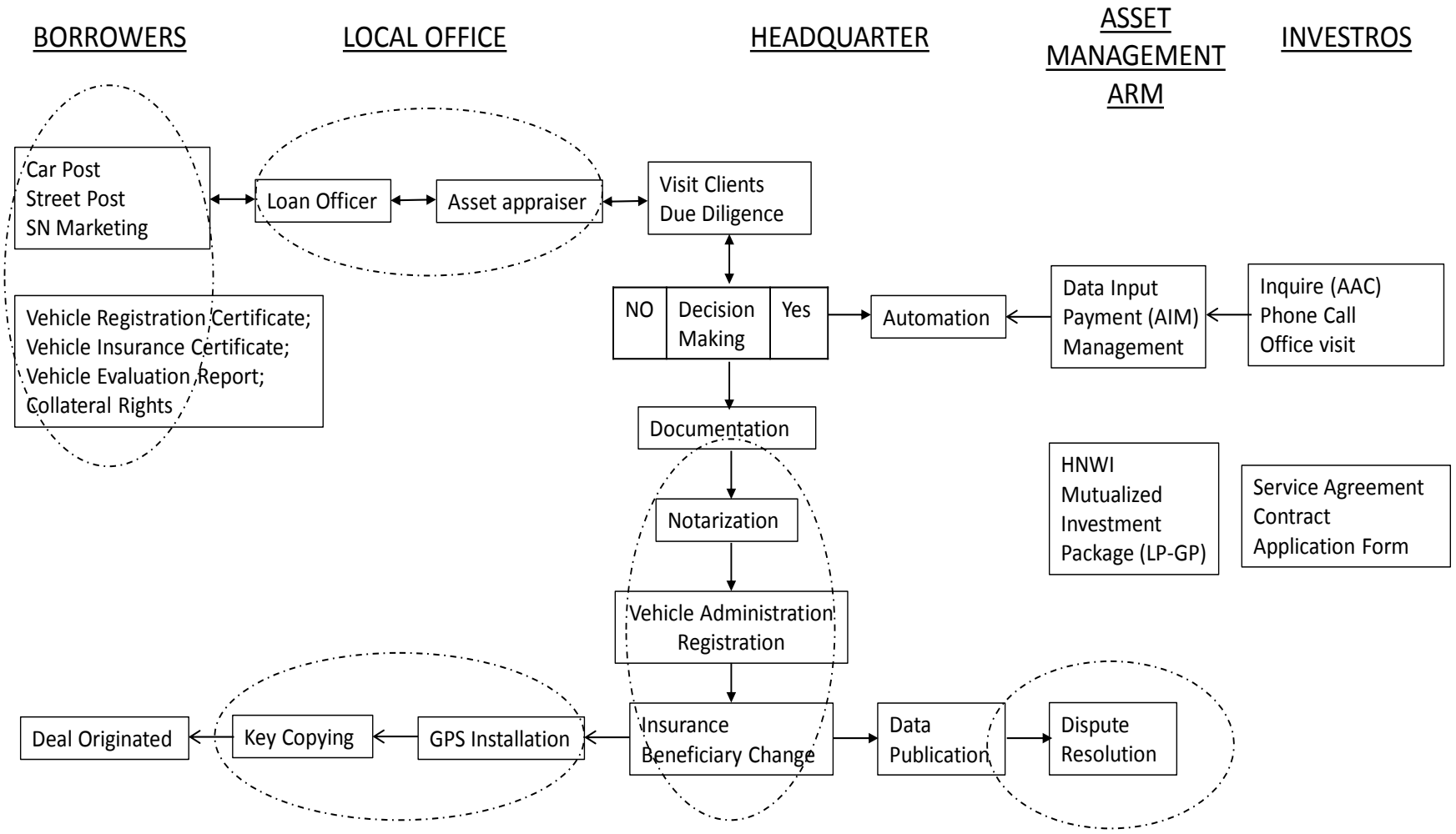
As shown in Figure 5.6, three types of embeddedness have been identified in the interview and analysis. First, the FinTech firms utilised local regulations and administration as supplementary to centralised credit references. By taking advantage of vehicles as movable collateral, FinTech firms were able to better control risks against borrowers who were not yet in the centralised credit bureau. Second, FinTech firms utilised GPS devices and pre-installed sensors to monitor the movement of vehicles that had been collateralised by borrowers. They were then incorporated using the assurance of locally based professional appraisers as full time in-house staff. Third, FinTech firms operated using sophisticated local business networks and political systems to ensure their benefits and protect them from fraudulent borrowers. Figure 5.3 below outlines the lending process of commodity mortgage lending. The dash lines highlight the position of embeddedness in the lending process.

5.5.1 Vehicle as Collaterals

Conventional assets include properties and equity stocks, which the conventional financial institutions widely accepted. There were FinTech lending companies which attempted to provide down payment loans, yet their initiatives were prohibited by central banks and local authorities in the name of disrupting the market. Re-mortgaging was also introduced earlier in the market, yet the difficulties round property damage and huge differences across the different cities

in Guangdong resulted in property re-mortgaging not being the most popular of loans. Equity stocks were widely used as collaterals, but the fluctuation of the stock market discouraged regulators from repressing its own regulatory location. Vehicles became the most popular collaterals in Guangdong.

Figure 5.3 Embeddedness in Car Mortgage Lending



The vehicle was an asset that was used and administrated by the local government in Guangdong and other provinces in China. From the appearance of a vehicle plate, it was easy to identify in which province and city the vehicle is registered. By noticing the different colours of vehicle plates, it could be seen that these were also identical to the ownership of vehicles, such as business owned, individual owners or foreign owners. By distinguishing the owners and place of registration, vehicles were offered different access areas and administration policies. For example, Guangdong Police Station issued vehicle plates to cars from Hong Kong and Macao so that their passes to mainland China are clear. After issuing vehicle plates, local police stations encoded a vehicle with digital information, which included historical records of ownership, driving experiences, pledges and maintenance. This information was utilised by the mortgage lending firms in the process of vehicle valuation and risk assessment.

The vehicle plate was administrated and issued by the local police station in Guangdong together with other essential vehicle related documents, including a vehicle registration certificate and vehicle Insurance certificate. These documents were only issued by the local government, and were the pre-requisite condition to other documents, such as the vehicle evaluation report and collateral titles. Apart from car types and these documents, the place where the vehicle was made was a significant part of the valuation of vehicles. Each local government had its procedures for the verification and title exchange towards lending against cars. For example, some districts required notarisation of lending contracts before car collateralisation. In Guangdong and other provinces in China, notarial services were a regulated government body rather than the routine function of the civil

service (Chen, 1986). Borrowers and lenders had to pay extra fees even for a single contract agreed by each other (P2P5-VP, 21/21/13, Shenzhen). Some places in Guangdong required borrowers and lenders to meet each other before notarial services. This regulation disabled FinTech lending as marketplace intermediaries because of the requirement to meet in person. As a result, vehicle based mortgage lending became locally embedded within the same city. Nevertheless, those regulations integrated participants of lending firms in the same place and enhanced the embeddedness of lending within local contexts. In the following sections, the relationship between borrowers, lenders, car owners, car possessors and intermediaries will be further analysed.

5.5.2 Methods of Car Mortgage Lending

There were three types of business model that were identified based on car mortgage lending firms. All these business models had a similar structure of firms, which linked borrowers and lenders by web technology. However, the process was slightly different between each due to the changes of participants. The car was the core asset of all the business models, but was possessed by different participants in the lending process.

The first type of business model employed the GPS device as an enabler of lending. After borrowers and lenders agreed to the deal, the lending firm installed the GPS devices into the vehicle so that the firm can monitor the movement of the vehicle as a solution of risk control. The borrower still owned the vehicle and was flexible in using it. The installation was agreed by the owner of the car, but the place of sensors was kept as secrets without the owners' acknowledge. When the

borrower drove the car out of the city, the installed device would notify the firm as an alert.

> We issued the loan on the second day after application. Although she drove away from the city once during her borrowing, we cancelled our penalty charge as she was going back home as her grandma had passed away. After this experience, she become our loyal customer and introduced us to her friends (P2P2-VP, 12/11/13, Shenzhen).

This option of lending was easy for borrowers, but difficult for lenders and intermediators. As a result, the lender and intermediator very often increased number of conditions to the deal such as higher interest or punishment fees to compensate risks. It was described in the interview that fraudulent borrowers sometimes appeared and caused challenges in respect of claiming the repayment of the loans. Those fraudulent risks will be further explored in the next chapter.

The second business model required a borrower to park their vehicle on a parking site operated by the intermediator. As a result, the real possessor became the lending firms rather than the borrower. The borrower still owned the vehicle, which was returnable after the borrower repaid their loans and interest. At this point, the intermediator and the borrower must visit the local vehicle administration bureau, if required, to complete the pledge process, before loans can be disbursed. The lending firm could also work with a local court in case a default occurred and assets need to be liquidised to repay the loans from the lender. As the lending relationship had been notarised by local agencies, the clearance process should be more rapid than the normal clearance process in the local court.

Lending firms relied on local knowledge and embedded social relationships in this lending model. For instance, lending firms had to secure a safe and affordable

space for parking collateralised vehicles in the urban area. In both Guangzhou and Shenzhen, this resource was not easy to obtain unless there were people around who had relationships with the land administration department. Beside the car parking space, lending firms also relied on sophisticated social relationships to liquidise assets into cash and then to compensate the individual lenders. The evidence has been captured in the interview with the founder of P2P2:

> Local people are sought to join the management board, who has the relationship with judges or leaders in local courts. It is much quicker and cheaper to execute civil auctions than normal business relationships (P2P2-P, 18/11/13, Shenzhen).

It turned out that the vehicle pledged business model in car mortgage lending also required embedded social relationships as an enabler to control risks and guarantee repayment. This type of lending proved again that FinTech lending was significantly embedded within the local business environment in order to survive and to grow.

The third type of FinTech lending firms acquired the vehicle first and then leased it back to borrowers. In this business model, lending firms set up partnerships with a local asset management firm as a lessor. In the intermediary process, borrowers had to agree to transfer the ownership first to the asset management firms before accessing to the loans. After the borrower repaid the loans, the ownership would automatically be transferred from the lessor (lender) to the lessee (borrower). Lenders had ultimate ownership of the car and had the most consolidated contractual relationship against missing collateral.

This model required the lending firms to be capable of securing the asset management firms and developing second hand car dealers. In the case of there

being a default in the repayment of loans, lending firm were able to sell the vehicle to a second-hand dealer to compensate the lenders. The evaluation officer would normally work with second hand car exchange managers to co-appraise the quote of the vehicle using the documents provided. As one of the senior executives of FinTech lending firm confessed:

> I don't believe in the court procedure because the auction is too slow to do business. I prefer to seize what I deserve from the investors in my firm. It is proved by our (equity) investors (P2P5-P, 20/11/13, Guangzhou)

Three models of vehicle based lending proved that lending firms not only embedded technology and human agents, but also embedded the collateral and existing social relationships behind the pledged items. Those social and even political relationships behind the lending practices will be further explored in the next subsection.

5.5.3 Political Embedded Firm Growth

One big distinction between car mortgage lending and other types of lending firms was their embeddedness with local business networks and local norms. Historically, Guangdong business has been largely influenced by Teochew merchants. This influence has transformed financial services into private lending and mutual investment services. There were 40% of interviewees who are senior executives of FinTech lending firms, and who highlighted their position in the local council directly or indirectly. All the private entrepreneurs were embedded into the local level of CPPCC, which represented the power and social status of individuals in the local political hierarchy. Previous research (Chen *et al.*, 2011; Qin and Deng, 2016) introduced the private entrepreneurs' general willingness to join the CPPCC, because membership in the CPPCC implies political security, social status and

glory, business opportunities (from fellow members and/or the government itself) and privileges. The emergence of senior executives of FinTech lending firms at local administrative levels represented the intention of local entrepreneurs to be embedded into the local social and political structure.

Additional to political embeddedness, Teochew business culture had also strongly influenced local business lending and borrowing. Teochew or Chiussan was the language and cultural discourse particularly in the east of Guangdong that had developed into several metropolises throughout history. This area was surrounded by mountains, and therefore had been blocked by other parts of Guangdong. The only portal of Teochew was foreign trade through the sea harbour with other nations. In fact, Teochew had one of the oldest harbours in Chinese history and was the third largest one in the 18th century. Due to the geographical exclusion from other parts of Guangdong, Teochew merchants bonded with each other and formed a close network within their community. Today, Teochew people not only developed strong network within Guangdong, but also largely lived outside China in Association of South East Asian Nations (ASEAN) (Ma and Huang, 2004; Chao and Deng, 2009). This community was enhanced through families, marriage and language and had formed financial arms through collective efforts. In modern businesses, this cultural relationship evolved into equity alliances where shareholders were known to each other. In the early firms, Teochew firms were largely SMEs and specialised in trade, retail, wholesale and catering. In the 1980s Teochew businesses started involving themselves with processing and textiles, but few were in mechanical engineering.

There were several reasons car based FinTech firms grew in Guangdong have built a relationship with the Teochew business culture. First, FinTech lending firms grew rapidly in Guangdong with the deep influence of Teochew business culture. With the FinTech firms, Teochew investors aligned themselves with each other and put their investment into Teochew owned firms. This collective investment secured the funding source of FinTech firms, and then served local businesses, who were run by Teochew entrepreneurs. Due to their established network nationally and globally, the firms were more readily scaled and expanded than similar firms without community support. Second, the linkage between Teochew people was not only in the business sector, but also the public sector. When public officers at the Vehicle Administration Office were from Teochew, it proved easier to be referred to them than to other people due to this community rooted culture. The importance of reference was sometimes critical in car lending given the effectiveness of documentation or exclusive access to business applications. This hidden business rules was also referred to in the interview with the local trade association leaders:

> Arrogant business representatives from the north took for granted that Guangdong is similar to other regions and entered our market without proper manner and preparation. Their failure highlighted that the culture and social network is more complicated than what they imagined (TU4-CO, 17/11/13, Guangzhou).

Apart from cultural assets, community embedded lenders also attempted integrating data from local data to identify credit risks. In addition to charging collaterals, community embedded lenders also collected information from company houses, court files, customs and other public data sources that were only

available locally. The connection was related to borrowers' risk, yet was not fully referred to by established credit bureaux. FinTech lenders built up close cooperation with local authorities, which enabled them to use local data for local SME lending. The remainder of the marketplace lenders employed independent consultants to give advice on credit risk analysis. Founders from Firm 5 claimed confidently in the interview:

> Our shareholders are all powerful people in this city. No matter where the borrower hides, they had better meet us if he or she would like to survive in this city. We will find this person by all means as we are influential in formal and informal societies. As a loan officer, I do not personally care too much about borrowers' defaults (P2P5-P, 20/11/13, Guangzhou).

In sum, FinTech firms in Guangdong revealed the strong linkage between technology and local knowledge. This connection affirmed the competitiveness of FinTech firms in the market as well as explaining its dynamic cooperation with conventional loan providers. In the following three sections, the lending process of FinTech firms will be explored in three steps: before lending, during lending and after lending. These three processes will highlight the development of FinTech in the local lending sector, whilst at the same time discussing its limitations in lending innovation in the Guangdong context. The mutual engagement and dynamic coordination through the technology of communication draw upon tacit and reified knowledge and participation. This also reflected a community of practice, which acts as a locally negotiated regime of competence and shared learning networks (Amin and Roberts, 2008).

5.6 Embeddedness in Financial Technology

So far, the discussion has focused on embeddedness of FinTech firms in Guangdong among borrowers, investors, regulators and local financial systems. It was difficult to imagine that a significant social network existed in the digital and technical context of firms, which reflected FinTech firms, as one types of service provider, was not an exception of economic geography and sociology. A theoretical lens might be employed to understand the implementation of technology with financial service: Granovetter's (1985) embeddedness theory. This chapter looked beyond of technologies in services provided by FinTech firms but examined the embeddedness with the background of local lending network in Guangdong. Three reflections have been demonstrated below.

The first reflection came from the embeddedness of ICT. Embracing the Internet and other ITC enabled technology remarked financial service into decentralised and anonymous where FinTech firms were characterised by reaching their customers through smart devices (Hong, 2014; McDaniel *et al.,* 2016). Within the umbrella of technology, lending relationships between lenders and borrowers seems weakening. Their relationships, however, were strengthened by the external lending agents, technology enabled social networks and digital money applications. This chapter identified a strengthened network between Guangdong FinTech firms and customers and investors through social networking application. FinTech firms motivated their employees, loan officers and investment advisors, completing their sales based performance by taking advantage of personal networks on their mobile phones. In addition, they obtain their business partners and senior staff through personal network from university alumni network and

leading information service provider such as BATs. The embedded and arm's-length relationship of FinTech firms determined its strategy in marketing, recruiting and fund seeking.

Second, locality matters for lending through FinTech platforms. The locality, in the case of FinTech service, provided information, human resource and funding to the growth of business. In order to increase market shares, FinTech firms not only investment on technology, but also expanding and operating into different cities, regions and localities. Tremendous human resources were sought to extend business through personal network within that particular locality. The human resource brought information and knowledge particularly within that place and added value for the FinTech firms. As indicated in this chapter, FinTech selected places to settle and operate. Guangdong had become headquarter of hundreds of FinTech firms because of proximity of Technology Corporation which covered and parented spin-off firms through venture capital investment and incubation services. The locality therefore became an enabler of formation of the entrepreneur ecosystem and a factor for the FinTech firms and services became embedded within a region.

Third, the embedded credit reference is a supplement solution to the traditional credit scoring system. As this chapter indicated, FinTech firms had to develop their own credit reference system when they were excluded from the CRC data from the Central Bank. However, they utilised embedded credit reference as a supplement solution to evaluate risks and prevent fraud. Those credit reference aggregate information and data that embedded with local service providers, local regulators and other FinTech firms. Together FinTech firms created a shared local

system and embedded credit reference system that supplement to the CRC data. Admittedly, the application of local data somehow breached the privacy and the ownership of private property such as vehicles. The borrowers of FinTech lenders might be desperately needed to prove his creditability when he could not demonstrate his own record from the CRC system. On this point, the usage of local registry and embedded date of the borrowers, which local banks did use, supported FinTech firms in Guangdong and diversified the local lending paradigm.

The embedded practice of FinTech firm brought significant impact to the local lending system. Those locally embedded lending practices added value to local financial systems in two ways. First, the local embedded practices increased the integration of the local financial system. Through the bonding and bridging of FinTech lenders, SMEs had an alternative and local funding source from which to grow. At the same time, local lenders obtained additional funding from local High Net Worth Individuals (HNWIs). FinTech lending firms were also embedded with local financial exchanges and institutional investors within the conventional financial system. However, the over-embedded lending practices also caused exclusion and inequality at a local level.

For example, a large population of potential borrowers had been neglected from FinTech service since they were excluded from using the latest technological device. The exclusion came from three directions. First, people who were not using mobile phone and social network applications were excluded from outreach of FinTech firms in Guangdong. Since most of the services were delivered through smart phone or other personal portable devices, the smart hardware became a pre-requisite to access to FinTech services. For those users who were not using

these devices, they were unfortunately excluded from FinTech lending services, neither as borrower nor as investors.

Second, customers who were not registered as local residents were excluded from FinTech services. Most of the FinTech lending firms required borrowers to have local registration or local registered properties as a condition of borrowing. Those new migrants and non-urban residents were unfortunately excluded from the FinTech services. Third, radical sets of methods have been developed that have used social media to persuade people to engage with these firms and these have imposed a greater burden of debt or investment than needed in their lives. These problems were across the spectrum of social media. Intrusion into people's everyday lives by the obligatory sharing of pictures in social media applications was contaminated by local lending companies. It is not appropriate that friends and families connected in the same network see these. Last but not least, there is a trend for growth on the investment side to outweigh that of the borrower. This indicates that the imbalanced growth of FinTech might lead to financialisation on the investors' side and thereby exploiting middle class investors.

5.7 Conclusion

This chapter identified a wide and tight social networks of local individuals and firms beneath the popularity of FinTech firms. The identification of embedded and arm-length networks between FinTech firms and other shareholders at local community added value to the implementation of embeddedness theory in the sector of financial service.

This chapter focused on the three lending processes of FinTech firms in Guangdong and five types of embeddedness reflected in the lending processes.

The first of type lender specialised in digitalising credit data from collection to analysis in an open and collaborative firm. The second type of lender aggressively filled in the gap, where regulated financial institutions were not able to downscale. The third type of lender capitalised movable vehicles as collateral with local knowledge and information.

Three types of FinTech lenders shared the same characteristics in lending, although they appeared differently in the lending process. First, FinTech lenders were able to sensitively capture and create new information to alleviate asymmetry in SME lending. They were learning new skills and technologies to identify hidden information for SMEs, and they were actively framing business models to charge their services. Second, they were actively engaging with established regulated financial institutions to entitling themselves as a member of qualified financial actors. Evidence had been given on their partnership with MLCs, GCs or Trust Companies to expand their customer base or funding source. Third, FinTech lenders desired local knowledge and social capital to build a strong and comprehensive financial ecosystem. By working closely with local governments, FinTech lenders acquired the necessary resources to survive and to grow.

This chapter contributes to debates in financial geography regarding globalised financial networks and local embeddedness in the spatial organization of FinTech services. Some may argue that the interrelated processes of technology financial innovation and deregulation have increased the homogeneity of processes and frictionless regional financial flows, branded with the "end of geography" to describe financial services. In this chapter, however, spatial considerations remain paramount in understanding the organization of the FinTech industry in

Guangdong. It is the first time that the spatial characteristics have been address in the FinTech sector as a paramount in portraying lending process of FinTech lenders outside UK and US. Peer-to-peer lending is the prominent FinTech actor that represented in this sector. It demonstrated that process of local embeddedness applied strong influences in FinTech lending, leading to the spatiality of FinTech firms within the financial networks of Guangdong. Although FinTech lending was a niche part of local lending network and highly embedded with technology, local embeddedness remained an essential factor in the lending process and risk prevention.

The spatiality of local embeddedness has implications for the nature and meaning of risk management of the FinTech industry. The national FinTech services was an interconnected network of locally embedded lenders each specializing in the production of loans. Risk management meant providing borrowers and investors with local access to FinTech market nationwide through seamless intra-firm and inter-firm networks. The results also suggested the fundamental importance of understanding the role of business routines in the organization of financial services. FinTech firms theoretically provided new routines through adaptation and learning from customers. Those challenges and evolution of FinTech firms' are analysed in the next chapter.

CHAPTER 6

ROUTINES AGAINST FRAUD IN LENDING PROCESS

> “The art of war teaches us to rely not on the likelihood of the enemy's not coming, but on our own readiness to receive him; not on the chance of his not attacking, but rather on the fact that we have made our position unassailable. Sun Tzu, the Art of War”

6.1 Introduction

FinTech firms in Guangdong utilised technology as additional intermediate to provide financial services, yet exposed themselves in new types of threads. The Internet Society of China (ISC, 2016) publicized that 688 million internet users in China has suffered from fraudulent information from internet in 2015, include webpage, mobile phone message and phone calls etc. More than 1.6 million criminals committed guilty on fraud which caused 91.5 billion RMB loss. In addition, FinTech firms had to address asymmetric information in the lending process without access to the national credit scoring system. This immature lending ecosystem put challenges to FinTech firms. From 2011 to April 2014, there were 118 FinTech lending firms reported having difficulties in operation. Among those firms, Guangdong had 23 ones which ranked highest at national scale (Lingyicaijing, 2014). In order to identify and alleviate fraudulent behaviours, FinTech firms spent tremendous money and techniques in dealing with the fraudulent behaviours with customers, employees and regulators.

Three types of fraudulent risks are explored in this chapter. First, technological fraud brought challenges to obtain real identities of customers. For example, borrowers used faked ID or fake families to apply loans. Alternatively, the customers’ information that stored on local server had been cracked and caused information leak. Second, FinTech firms were exposed to the other fraudulent risks

from borrowers, and also from lenders and employees. Borrowers obtained several loans at the same time from different borrowers without records in the national credit scoring system. Lenders who lost the investment on the FinTech firms were not satisfied and expressed their anger by blocking FinTech offices. In addition, both senior and junior employees quitted their job frequently. This is risky for FinTech firms because they left and joined competitors' company with customers' trust and information. Last but not the least, FinTech firms were not included in the policy making process neither recognised as financial service provider in Chinese regulatory context, which caused weak and uncertain representation against fraudulent crime. Those fraudulent risks brought evolution of routines on FinTech firms. Three dimensions of new routines were worth exploring from evidence draw in the chapter.

This chapter identifies and explores the routines of FinTech firms to address fraudulent behaviour that routines, capabilities or practices that FinTech firms have developed to avoid uncertainties and to prevent fraudulent behaviours in Guangdong. Three fraudulent behaviours have captured and presented in this chapter prior to the analysis of evolution of routines in the context of FinTech firms in Guangdong. This chapter highlights which FinTech firms reflected some characteristics from traditional financial sector and locally embedded services, they had to adapt to new routines to address uncertainties that emerged only since the application of internet technology in unregulated local financial services and unstructured financial instruments.

6.2 Evolutionary Approach to Routines of FinTech Firms

Before addressing the fraud and routines that evolved and built against fraudulent behaviours, it is critical to examine the current theories in explaining their correlations between service providers and customers in a same spatial regime as well as in finance sector. This section went through evolutionary approaches in management and strategic entrepreneurship research to seek the answers to explain the FinTech services. Two theories were identified through the literatures.

The concept of routines has been widely applied in the context of management, sociology, economic geography, yet it has not intensively used in specific segment with empirical evidence (Becker, 2008). Fraud has been explained in many ways in social science sources, from being expressed as “acquiring goods and/or money by dishonest means” (Levi and Smith, 2011) to more a more detailed clarification, where it is asserted to be, “a human venture that includes dishonesty, decisive aim, amount of longing, risk of detention, breach of reliance, validation, etc.” (Ramamoorti and Olsen 2007).

Both routine and fraud need to be considered in the framework of evolutionary economics geography as the formation and adaptation of routines were dynamic through change of time and space. Fraud also evolved accordingly with the development technology and with the organization of crime. In the FinTech sector, both fraud and prevention routines were upgraded and identified through empirical evidence. After the summary of literatures in both areas, evidence will be presented in lending, investment and management routines of FinTech firms.

6.2.1 Routine

It is a tendency that routines are examined in the context of evolutionary economics geography as daily work (Feldman *et al.,* 2016). Considering such a micro-perspective, an evolutionary approach to economic geography was prone to portraying the expansion of the economic landscape as shifts in the timespace distribution of routines during a lengthy period of time (Boschma and Frenken, 2006). This economic landscape pertained to how new routines present themselves, and how they spread out in time and space. There was a trend that the optimal routines were to be selected in the evolutionary process in which adaptability would be simultaneously targeted. In consequence, choice takes place both at the micro-level of the firm through its routines, and at the macro-level of markets and institutions. Market competition works on variety as a selective mode, which was a determinant of routine types and popularity (Ormerod, 2007). The selection environment encompassed both markets and institutions, whose effects turned out to be particularly obvious when a major institutional change takes place and the “playing field” on which firms compete shifts in a substantial manner.

Therefore, comprehending the suitability of routines called for an analysis, not only of firms and markets, but also of institutions as pertinent enabling and constraining contexts. Cohen and Levinthal (1990) contend that firms were inclined to perceive, absorb and apply external knowledge only when it was placed near their own knowledge base. Simply put, efficacious knowledge transfer between firms stands in need of absorptive capacity and cognitive proximity (Festré and Lazaric, 2007, Klein et. al., 2010). Whereas evolutionary economics had laid emphasis almost

exclusively on the cognitive dimension, other forms of proximity are in existence that exert influence on successful replication and diffusion of routines within and between firms across space. As a result, the growth of the economic landscape was reconciled by cognitive, social, geographical and institutional processes that merit attention in evolutionary economic geography.

The significance of firm routines that expose behaviours, resources and capabilities functions as a major component of understanding the ways in which firms evolve during periods of competition. Essential to this approach was a concern with the evolutionary principles of variety, selection and retention. Firms make alterations to their routines through different means, such as imitation, talent hunting, merger and acquisition, training and capacity building, events networking etc. The trajectory might be incremental change or trial and error (Boschma and Frenken, 2006; Boschma and Martin, 2011). Routine could be either tangible, such as management patterns or rules, or intangible, such as networks or orders (Becker, 2008; Bryson and Rusten, 2011, Pentland, et al.,2012). Within the context of firms, routines consist of resources and capacities identified in resource based view.

It is possible for routines to apply to all products in a firm or to a line of products. However, it is of vital importance not only to recognise and figure out specific routines that have developed within individual firms and across sectors, but also to conduct routines with empirical research. Bryson and Ronayne (2014) set off research in technical textiles as an example that how routines can be implied in different industries. In this research, financial service is the focused where asymmetric information has been discussed earlier which caused market failure

for banks providing access to SMEs in the process of operation (Stiglitz and Weiss, 1981). FinTech firms should be examined in terms of how to work out the routines in order to come to grips with fraudulent behaviours from customers, which are adaptive to old routines. It is critical to carry out a full examination of this issue through the discussion of information asymmetry.

6.2.2 Fraud

Fraud is, socially, a complicated and indefinable idea. The regulation is very vague about this procedure, and officials of the law sometimes mentioned the body of law that are concerned with fraud as a conceptual morass (Doig 2006; Green, 2007; Vishwakarma, 2015). Fraud does not subsist on its own, is not a legal crime and does not have a single official explanation defining it (Doig 2006; Raju and Murthi, 2015). The law only states that “the theory of fraud, is a broad idea of what it entails to defraud someone” (Doig 2006). This official theory of fraud exists in numerous formats and according to an extensive variety of rules within different authorities (Green, 2007), and its denotation and description may alter according to the decree that the word is applied in (Reurink, 2016).

Where the financial market operations are concerned, such as banking, securities, and insurance, fraud is assigned a more exclusive sense and is regarded as the illegal fabrication or alteration of significant financial data (Ambhire and Teltumde, 2011; Saha, Bose and Mahanti, 2016). Financial data is the key element of the financial market dealings. The members in the financial markets only trade insubstantial privileges and duties, whose worth thoroughly depends on the position and future functioning of the supplier of those privileges (Lomnicka 2008). To evaluate the present position and future functioning of the supplier, and to

ascertain the apparent worth of a financial tool, it is significant to own precise data and the capacity to understand that data.

The specifics of the financial fraud differ greatly in their depictions, as they are grounded on the market divisions in which they are committed, the financial tools they influence and the performers that are a part of that act. Due to this variety, the sources concerning the procedure of financial fraud as explained before, exhibit an excess of frequently coinciding expressions and theories. Their examples include fraud, financial fraud, securities fraud, corporate fraud, management fraud, accounting fraud, financial statement fraud, financial institution fraud, fiduciary fraud, bank fraud, investment fraud, brokerage fraud, and insurance fraud (Inderst, 2011; Patterson and Koller 2011; Harrington, 2012; Beyer, Meza and Reyniers, 2013; Albrecht *et al.,* 2015; Button *et al.,* 2015; Reurink, 2016). To organize and simplify this terminological chaos, a theoretical division is made between three kinds of financial fraud. These include financial statement fraud, investment scams and fraudulent financial miss-selling.

These three divisions of fraud mentioned above are not completely established by present work performed regarding finance and management. One important shortfall in the present studies is the escalating complexity confronted in the financial market dealings from a speedy technical, financial technology and extending options of financial creations (Beck and Zhan, 2010; Friesz, 2015; Taplin, 2016). Even though most of the deliberations concerned fraud are committed by the financial organizations, there are not many studies that deal with fraud that is committed against the financial technology. In Chinese context, particularly, that research on fraud were neglected in financial services.

6.2.3 Fraud and Routine in Financial Service

The application of technology in financial services has been captured by recent studies across social science realm (Harrington, 2012; Fligstein and Roehrkasse, 2016). One increasing concern from scholars are the complexity and frequency of information and knowledge exchange between financial service actors that beyond ethical radar. Technology, on one hand, increased the sufficiency of transaction, but also increased the difficulty of detecting arms-length exchange between intimate counter-parts on the other hand. The sheer number of white-collar crime in financial sector suggested that banking professionals believed technology helps hide evidence of fraud (Patterson and Koller, 2011; Reurink, 2016). Organizational routines have been introduced to financial services in the early 1970s to understood information asymmetry (Ackerloff, 1970). The discussion of routines tasks appeared in two process of financial service. One stance was how to adopt the customer loyalty through cooperation between the front-office of back-office in the banks (Lewis, 1993); and the other was how to identify hard and soft information from bank customers. The academic debate has not yet extended to the FinTech sector and how these new types of financial service against fraudulent risks with organizational routines.

In the banking sector, front-desk of banks had less routines compare with job in the back office. The staff at the front desk was expected more service offering and monitoring customer preference changes in order enhance customer loyalty. In order to adopt customization, the front-office required intensive labour in contact customers and capture feedback of services. Therefore, the front-office in banks was not expected to adopt routinized tasks. Back office, in another hand, need to

be efficient and to adopt high standardized service routines to support the need from front office and customers. Technology could be used to form routinized services in the back office in order to achieve high efficiency against unpredicted customers' behaviours (Safizadeh, Field and Ritzman, 2003). Those routine tasks should be replaced from human agents to computers include bureaucratic internal report and compliance (Jackson, Saffell and Fitzpatrick, 2016). Credit scoring is an example how risk could be identified from borrowers against asymmetric information (Leyshon and Thrift, 1999; Jackson, Koh, Tan and Peng, 2004; Saffell and Fitzpatrick, 2016).

The funding of SMEs through banks has always been difficult due to lack of the track record, collateral and the information (Leyshon and Thrift, 1995; Jiang and Xu, 2007; Tian, 2013). The methods used by banks has become more constrained in recent decades due to increased centralization and computerized assessment of creditworthiness (Leyshon and Thrift, 1995). This rise of 'transactional lending' has come about at the cost of relationship lending through local branches with local knowledge (Hayek, 1945). In this shift from relationship to transactional lending, 'soft' information, based on relationships and judgment of credit officers (Pollard, 2003), was traded in for 'hard' information (Berger & Udell, 2006). The hard information included numerical evidence such as credit scoring, financial statement, ownership certificate, title of property, bill records, supplier contracts etc. On the other hand, the soft information, was obtained through personal networks and acquaintance of borrowers (Berger, 2009; French, Lai and Leyshon, 2010; Beck, 2013). Alternatively, information could be estimated from the communities or neighbours by loan officers from the field visit.

Majority of banks used hard information as routine tasks in process against asymmetric information. In general, the stability aspect of routines was well developed in related literature, yet the endogenous adaptation of routines as a matter of variety in its performative character doesn't receive substantial attention. In contrast to that, the questions where routines originate from and how organizational routines evolution has been barely addressed. When customers of FinTech lenders in Guangdong, both borrowers and individual investors, adopted new lending process by new firms, it required routines of assessment to be adjusted and adapted so that the lending risk could be minimised.

Table (6.1) below demonstrated those routines and their linkage to the conventional routines and uncertainties. The formation and evolution of routines in FinTech firms against fraudulent risks were explored in this chapter. Further, this chapter identified the formation and evolution of new routines from the process of adaptation with customer behaviours. Three types of new routines were identified from the research to prevent fraud by FinTech lenders. First, new routines emerged by using social network applications to counteract the fraudulent behaviours of borrowers and substitute the drawbacks of centralised credit reporting system. Second, new routines were forms to encourage individual investors put money into FinTech firms rather in bank deposit account by improving investment safety and resilience. Third, new routines were shaped as codes of conducts and implemented within employees from junior to senior level.

Table 6.1 New Routines on P2P FinTech firms

Type of Information	Conventional Routines	Problems	New Routines
Lending	FinTech lenders embedded their routines with traditional banking sector	With poor credit reference system, P2P lenders suffered from flatulent borrowers	They use social networks and external technique support to substitute technological and institutional exclusion
Investment	FinTech lenders absorb individual investors capital as conventional approach of WMPs	FinTech firms practices were not fully compliant and technologically weak	Those firms upgraded software and database protection as well as fund safety
Management	FinTech lenders authorise basic level employees highly free actions	Local junior level staff compete and cooperate with customers and others to adopt new routines	Management team learnt from employees and customers and adapted new routines in management

This table embarks upon analysis of each routine in the following sections. Routines tasks on lending process will be first introduced with three aspects, such as routines against over-indebtedness of borrowers, counterfeiting identities and break monitoring devices. Routines for investment safety will then be explored through how the FinTech firms improve information security of online transactions, how they communicate with investors and how to use contingency fund. Last, managerial routines will be analysed on how FinTech firms retain customers and productive employees and how they dispute disagreement with them.

6.3 Lending Routines

Lending routines were significantly formed on FinTech lending firms at Guangdong due to the scale and rapid growth of FinTech firms and their customers over there.

Four new routines were formed within FinTech firms after learning from their borrower customers. First, FinTech firms had to judge the indebtedness of borrowers before lending even through this borrower were qualified. Second, loan officers developed their own techniques in attract borrowers and exchange with others to maximum their pipelines; Third, FinTech lenders learnt how to identify the fake identities from borrows from paper work to collaterals. There three new routines were formed from old practices were highlighted in the table (7.2) below. These techniques also generated enormous of data which was not available at conventional banking sector.

Table 6.2 Lending Routines

Conventional Routines	Problem	New Routines
Agent obtained borrowers who were qualified of having a loan	Those borrowers obtained several loans from multiple lenders	Excluded risky borrowers and make sure they had repaid before paying others
Loan officers were hired and trained to attract borrowers	Loan officers were pushed to maximize their value by calculating their attracted borrowers and loans	Loan Officers exchange client information and co-create value for each other cross team and even across firms
Borrowers were asked to submit personal identifications and document to prove creditability	Borrowers learnt to buy and counterfeit their identities in loan application	P2P lender required verified documents, such as visa, to affirm identity and save cost;
Borrowers were asked to install GPS to track their locations as credit enhancement	Borrowers remove those GPS tracker	Lenders installed multiple trackers secretly in various places of the vehicles

These decisions and judgement made by P2P firms represented the adaptability of FinTech firms in front of changing dynamics of customer base. At the same time, the firms formalised their own routines again fraudulent borrowers in response to

the asymmetric information in the lending process. This new routines also represented the dynamics process of customer routines formation from customers and adaptation of FinTech firms in Guangdong from its lending firms.

6.3.1 Over-indebtedness

Multiple lending has been quite phenomenal in Guangdong since 2013. When borrowers use same identification and application materials to apply loans from several lenders, they are likely to acquire capital than they could borrow from one single lender. There are at least two scenarios when multiple borrowing happens. One is FinTech firms had little knowledge about the intention of borrowers. The other was the firm intentionally gave extra credit to borrowers. In either cases, FinTech lenders were exposed to the greater risk. In order to address multiple lending, FinTech lenders were adapted to the changing dynamics of customers and competitors. In order to obtain good borrowers, some lenders were even gambling with other lenders by setting up earlier repayment date to its colleagues. The counter party might be FinTech lenders, MLCs, credit card companies or even banks. As one of the interview admitted:

> "We do not reject borrowers who use our loans to pay credit card. In addition, we set the repayment date days before the date with banks. If we are able to secure the payment earlier, we would not loss but take advantage of banking credit reference information. If banks dare to lend, why don't I? (P2P7-VP, 21/10/13, Shanghai)"

In logbook lending, for example, most of the borrowers were honest to the lenders in terms of the ownership of the vehicle. However, most of the flatulent cases are result in false information given or duplicated mortgage. In the worst case, borrower mortgages its car for one lender without parking then re-mortgages it to another lender as security. As a result both lenders claim the ownership of the

same vehicle. As indicated by a founder of FinTech firms, they prevent fraud in their unique way:

> "There were often some disputes between us and other firms when both of us would like to claim a same vehicle. Even gang fighters were not abnormal between lenders and their peers. In tackling this problem, we would strongly suggest our clients to mortgage their cars to us, park in our compound and share vehicle spare key with us (P2P6-P, 28/10/13, Beijing)."

As the results, firms would also require a certificate from borrowers to demonstrate the validity of their vehicle to be a mortgage. However, the borrower may claim several certificates at the same time and mortgage to different firms. Then both parties needed to sign the contracts for lending and pawning with notarization from local government. Those practices represented the newly formed routines from borrowers and FinTech firms' responses to the borrowers.

6.3.2 Counterfeit Identities

As introduced in Chapter 6, telephone interviews will be arranged with borrowers and their relatives and friends as cross checking method to identify hidden information as flatulent behaviours which would not appear on their application forms. Borrowers learnt this technique and developed routines to disguise from identification. Such routine include using voice syndication devices and fake IDs. These fraudulent borrowers prepared landlines and mobile numbers embedded with digital voice changing software to deceive remote calling centre from P2P lending firms. As they were been trained to answer financial questions, they helped the borrower to walk through this test and charge them services fees.

Borrowers also learned the format of document preparation used by lenders in credit assessment. A story was introduced by an interviewee that a second time

borrower approached to them and requested a loan with larger size. The borrower provided well prepared application package including full finance statement, business plan and other documents required for loan application. However, the application was accidentally rejected because they were too clean and too professional to be true. After a couple of mouth, the borrower came here again and applied smaller loan. At the same time that person committed his fraud in previous application by making fake documents with help of external agency. As one loan officer added:

> It seems not difficult to purchase a whole package of fake identities and application materials from somewhere including ID card, property titles, marriage certificate, bills etc (P2P2-RMVP**, 28/11/13, Shenzhen).

In response to false document and ID, FinTech firms adapted new routines by creating separated lending products which required visa and passport from the borrower. Although very limited borrower has this document, it saved time of assessment by taking advantage of foreign embassies' system in verifying personal information. Given the limitation of the credit reference infrastructure, firms adopted self-owned interface to assembly and compile any public information on borrowers such as court and business administration bureau. Passport has been utilised as an alternative approach to prevent fraudulent risks as all the documents have to be carefully examined when individuals applied their visa and passport. This technique has been captured by risk assessment manager at P2P 2 which highlighted below:

> We develop another new type of lending which is based on visa application. If our borrower has visa granted by selected countries, he receives high degree of confidence. It is because he can't use false document to get visa. This helps us to verify the validity of its credibility with low cost (P2P2-RMVP**, 28/11/13, Shenzhen).

Only by pre-existing offer letters from larger firms who conducted due diligence through the process. This posteriori process may bring unnecessary capital to borrowers which exceed its creditability and put the other lender in more dangerous situation.

6.3.3 GPS Interference and Uninstallation

As introduced in Chapter 5, in order to avoid fraudulent risks from unsecured lending, firms introduced both conventional and alternative properties as collateral in lending process. Inspection was the most complex process which not only required sufficient knowledge of cars and laws, but also the identification capacity of invisible risks which hidden from the loan application. The most significant risk is borrowers' default. Sometimes it was not borrower who borrowers money from the firm, but some borrowers attempt taking money away on our firm in the name of innocent borrowers. Sometimes they brought a new car and attempted to apply from us in the name of someone else. In addition to unintentional borrowers', loan officers also noticed the fraudulent behaviours against GIS devices.

> We have to be very careful in dealing with [non-mortgage] borrowers. Although we will install GPS devices on the car, we noticed those devices were often removed [off the vehicle]. Sometimes we have to install several [devices] at the same time on a same car so that the risks could be minimized. It has to be done secretly. In addition, we need to maintain very close relationship with local police officers to have their assistance in claiming our assets [mortgaged vehicles] (P2P4-VP, 30/10/13, Shenzhen).

This testimony again offered the relationship that FinTech in SME lending sector is inevitably not independent from local knowledge. The local knowledge is helping firms not only in creating new business models, but protecting them from fraudulent behaviours. Routine process on FinTech firms was identified in risk

control. The lending risk was largely caused by information asymmetry and unequal access to the information between borrowers and lenders. In emergent of FinTech provides alternative opportunity for routine processing apart from mainstream financial institutions. However, the new lending organizations must not only rely on conventional routine; they must also create new ones to cope with different customers at different condition.

The creation of information is the creation of a new judgement of lending. The dynamic, complementary process that results in a shift to a new point of view requires interaction —a dialogue or debate—among people. The process is convoluted, involving a cycle of affirmation, denial, and resolution before new information is created. Since the significance of information is elastic during this process, individuals have the opportunity to interpret and reinterpret for themselves; this freedom allows group members to organize information individually. With light barriers, FinTech firms had open opportunity to work with other institutions and created new information to alleviate information asymmetry and create new information to mitigate risks.

6.4 Investment Routines

Technology advancement has brought financial services to internet stage with both opportunities and vulnerabilities. For example, by applying new technologies, lending firm gained additional exposure to its customers through internet, as well as protected themselves from cyber-attack. The establishment and the organization of online forum by the firms improved transparency of operation and increase confidence to its customers. The usage of digital currencies impressed new customers and increased their loyalty.

Table below (6.3) outlines the new routines and their formation background. In this section, three new routines were identified on the human resource administration process on both staff and clients. First, the lenders require an early repayment date than its competitors so that the borrowers can repay their loans before any other loan were due. Other routines were also implied in borrowers' side to prevent loss of money. Second, individual investors were received and. Third, the lenders created key performance indicators for their sales team in each cities to keep their loyalty and productivity. Three new routines were identified in the table below. In this section, three routines are explored to understand how fraudulent behaviour were prevented in human resource segments.

Table 6.3 Investment Routines

Conventional Routines	Problem	New Routines
Data and Information were generated to improve service	Server was attacked and cracked which disabled operation	External Protection Upgrade server and website; Trial and error;
Social Network was used to obtain clients	Investors organised and influenced FinTech firms' decision making	Inter-active with lenders through online forum
FinTech firms use same bank account for their own money as well as investment pool	Suspicion increased against the isolation of use of funding from the public	Custodian fund were set up against
Digital currency was used to increase number of online users	Fraudulence registration took monetary reward then became inactive	Family and friends orientation and education

6.4.1 Information Security- Safeguard

Information security was not a significant problem in SME lending until some practices were upgraded from offline to online. To protect their firms and assets which embedded on it, the firms had to investment significantly on information security. For example, one firm in Guangdong who employed 300 staff for credit reference, had to hire more than 1000 people in firm maintenance and information security. (Jindun, 2013). The increasing significance of information technology in the process of firm growth has been regarded as new trend of academic literature as routine in recent literature (Levin and Barnard, 2008; Bryson and Ronayne, 2014). While most of the discussion focused on the efficiency and productivity brought by information technology, their role in tackling asymmetric information in financial services as routines were not fully covered.

85% marketplace lender in the interviews bought pattern websites directly from professional website design companies with pattern codes, installation and training services. Yet 10% among those of the services neglected information securities and caused fraudulent attack by hackers. There are three fraudulent risks were caused by information insecurity on technical infrastructure. First, the invasion to the database caused serious leaks of client information, including their names, ID code, home address, mobile number, service contract and document photocopies. Most of the firm embedded Client Relation Management (CRM) System within their Management Information System. The CRM system was sometimes built and maintained by themselves or by the third party providers. It happened to some of the firm the hacker broke the fire wall of their system and downloaded the HMNI client information. Second, the cracking attack caused

disclosure of companies confidential documents includes remuneration of staffs, training plan, financial figured or staff's background. Last but not the least, crackers were able to block the traffic of the website by injecting giant amount of spam information at high frequency, which increased the cautiousness of potential and existing investors as the website was suddenly became invisible. The anxiety might raise possibilities of investment withdraw which ultimately crash down the company. It appeared in the interview that the hackers put the database on open bid in underground market when the firm rejected their payment request. Illegal fund transfer also occurred to a fake title of investors. Although the firms called the police officer to resolve it, their reputation was harmed through the event.

Firms moving lending businesses from offline to online brought them higher visibility and accessibility to potential customers, but also brought unprecedented challenges caused by information insecurity. Such challenges also appeared to conventional financial institutions such as phishing (Beck and Zhan, 2010), those challenges were more visible in other online service providers (Button, et al., 2015). As founders of FinTech firms appeared from diversified background, there were not universal routines from the interview that respond to the challenge. The 65% of firms emphasized the importance of hardware in preventing cyber-attacks; while the rest argued cross-industry collaboration should be the key. The divergent attitudes were influenced by the degree of funding sufficient. The CTO of FinTech firms believe business routine of information security is their core competitiveness which should not be outsourced to the third party operators.

> I have to convince my investors and lenders this is a secured a firm. Nobody wants to loss their penny in this fancy business. This is the first impression [to our customers]. What are your concerns if you have visited 10 websites with the same display? (P2P3-CTO, 09/11/13, Shanghai)

The *P2P Firm-4* which was not angel backed had lower priority on information security routinization due to cost concerns. Instead, it brought a pattern to launch their business and improve this system after the number of registers increased.

> To build a normal level of information security [infrastructure], we need to invest 300K [per annum] at minimum without human resource expense. Advanced security might not be considered until angel and further investors come in discussion (P2P4-P, 30/10/13, Shenzhen).

In sum, there was increasing caution towards internet security and formed diversified routine to cope with the new challenge which was optimal to their interest. The routine in front of uncertainties to FinTech firms were more or less portrayed as judgement and decision which was becoming an essential part of their strategy.

6.4.2 Harmonious Crowdfunding

Although internet based lending firm increased transparency of operation, there were serious tensions between investors and firms at certain type of moments when the firm didn't repay the loans immediately. Rumours and discussions emerged immediately on internet forum on the suspicion from investors. The suspicion was about the personal identity of firms founders, their recent cash flow evidence, mobile numbers, credit documents validities etc. Individual investors tracked the company's address by looking at their website and accidentally presented on site to investigate the validity of the company. Furthermore some of them would take photos and post on their personal blog or online forum to share their investigations with other lenders. Those investors shared their perspectives

and observations on the internet forum which became the popular reference for new investors in this sector. Their analysis was widely accepted due to their analytical tools and reasonable argument. Sometimes they identified a false document but sometimes they also made mistakes by over-assumption.

> Our users were capable to identify if a photo provided by the firms or the borrowers were false by proving Photoshop use history on a clear photo. They were able to measure the similarities of government stamp between real sample and fake ones. They posted their judgement on our forum by helping other investors to know what is happening and to gain reputation in the community (P2P4-P, 30/10/13, Shenzhen).

The activities of individual investors and the online forum drew significant attention to FinTech firms in Guangdong. The firm couldn't underestimate those unexpected visitors because they had been aware some of the visitors had extraordinary followers on social media and influence other investor's decisions significantly from same city. Two new routines were commonly seen that formed to address the increasing curiosity of the investors and social media pressures. For example, companies had to organise open session between executive managers and individual investors within their business premises regularly to meet the curiosity of investors. One of the managers informed they formed a new division to cope with coming firm investors after they encountered several unprepared visitors.

> We didn't expect that investors will check our website and registration addresses and come along to see us. I realized afterward they wanted to know we are real company not doggy cheaters for their money. After presenting our philosophy and working premises, we convinced we are real (P2P9, 28/10/13, Shenzhen).

The firms also actively engaged with online forums and participate in the discussion such as on popular loan products, new established firms as well as interpretations of local media exposure. Those communications were regarded very critical when negative news pulled over from any sources of media. It was a consensus among practitioners that small investors must be protected in first priority. Although it required effective management on the thousands of hundreds of accounts, it helped to diffuse the spread of rumour that was against the company. Their investment would be refunded before professional or sophisticated investors. It was believed by 66% of the firm that professional investors were close stakeholder of the firms and they were able to help the firm at emergency.

> I am really appreciating our investors at our firm, especially those active discussants at leading online forum, who increased their portfolio on our firms when there were rumours against us. They helped us to regain the reputation and survived at the very urgent moment (P2P4-P, 30/10/13, Shenzhen).

Apart from adding communication routines in operation, FinTech firms also adapted capacity in fraud prevention from malicious investors. It was very often for online service providers to offer discounts and digital currencies as vouchers to attract new customers (Holmes, Balnaves and Wang, 2015). In Chinese online service systems, zombie registers were often captured to collect those digital currencies without spending on the website. Those zombie customers were described as “Ru Yang Mao, in Chinese: 缛羊毛” which meant “grooming sheep” on online firms. They had also became increasingly visible on FinTech firms in Guangdong.

Fraud also appeared in other types of FinTech lending process. For example, 70% of the FinTech firms identified fake ID and fake interviewees in the due diligence which increased the difficulties of credit assessment. In secured lending, FinTech firm had pledge to protect the loans, yet their installed GPS were sometimes removed from vehicle or blocked signals with professional devices. Those challenges endangered the lenders' safety and influenced confidence of firms. It is very interesting to obtain those newly formed routines upon FinTech firms. They were formed not for boost their outreach in the region, but for protect themselves from vulnerability and uncertainty from public opinions and media bias. They were formed from unexpected market reactions which was not part of their firm strategy until being necessary.

6.4.3 Contingency Fund

At present, lenders and borrowers' funds on most FinTech firms were directly credited into or withdrawn from their accounts within the firms, without setting up any escrow accounts. Such a situation entails the risk of funds being abused or misappropriated, as well as substantial risk of "self-financing" and "false financing". Two types of funds need deposit services. One was the payment from retailing investors to the borrowers or the debt securities subject to the lending model of the firms; another was the contingency fund that was set up by the firms to hedge the default risks. The difficulty came from banks avoidance of absorbing fund from p2p industries. There were two ways how bank can monitor FinTech funds. The first way is deposit account (存管) where banks monitored and took care of every transaction through this account. The second is escrow account (托管) where banks guarantee the total amount of the fund but would not be responsible the

purpose of users. At the moment in Guangdong, all the banks were only able to set escrow account for non-financial institutions according to the complexity of micro-payment management, adaptability of current account management system and lack of regulatory directives of cooperation. Technically, firms have no authorities to withdraw a penny from the deposit account without a consolidate reason. However, they were able to move the money from escrow account as the level of supervision is different. Some of the managers from firms worried about the illegal use of the fund:

> It is the suicide to filling the old bad loans with new investors' money. I would never do this even by sacrificing my revenue to fill the holes. Unfortunately I know my colleagues were enjoying doing this as lack of rules in the market (P2P2-VP, 12/11/13, Shenzhen).

It was clear from the interview the rule is not representing the regulations but the order in the market. It was repeated to hear the call for regulations from the practitioner to guarantee the safety of fund institutionally. This request could be understood as fairness and openness in formal financial sector to new lenders rather than limitation of market shares or entrance requirement. Only a limited number of P2P firms were accepted by banks to custodian service for individual investors. This mechanism was further explained by the President of *P2P Firm 2* in the interview:

> Banks were willing to consider providing a deposit account to us, and they were doing a lot research on the establishing the payment systems that serves our business. Their pressure however comes from the regulators as there are no directives on the cooperation between banks with P2P lenders (P2P2-P, 18/11/13, Shenzhen).

As a result, p2p lenders depend on third party payment service as clearance and settlement vehicles. A majority of p2p lenders chose some major payment

company to cover clearance and settlement demand. This is the business culture inherited from trust companies when they sell wealth management products to the public.

Chinese HNWI investors were overly protected by regulations for the concerns of social stability. Financial institutions decisions were politicalised in critical moments to protect public investors. Different to regulated financial institutions, P2P firms were rarely insured therefore has risky position in credit events. A contingency funds were often established by firm to prevent credit event. This fund was charged additionally from the investment fees against every single individual investor. When a loan was due on the firm, the repayment of loans was indirectly guaranteed by firms to its individual investors. There is no contractual agreement but a trust-based agreement between investors and firm. In case of any non-performing loans (NPLs) occurred, contingency fund would cover the loss and individual investors were to be repaid by firms. All the marketplace lending firms cover the loss occurred in any event. Those norms and relationship in the conventional sector has also affected FinTech firms in Guangdong and their strategic development in both technology advance and financial capacity building.

The contingency funds were a popular vehicle to be set up by large FinTech firms. Normally it charges totally 2% of transaction value from two parties and put the money into a separate account. Although this fund was not excluded from touch of firm, it played a role as fire walls between fraudulent behaviours and retailing investors. However, the fixed amount of capital pool was unable to prevent the dynamic changes of risk which volatilized through business cycle. In addition, as the absence of banking support, contingency funds were not able to be

independently monitored. To increase the customer base, 90% firms further promised the individual investors investment guarantee scheme. It gave investors the privilege of withdrawing its investment anytime at all conditions. 40% of the firms promised to be repaid in 24-72 hours while the rest had longer period of repayment time. However, this scheme put firms and borrowers at disadvantage positions. Either borrowers needed to repay the loan in advance or firms should re-purchase the investment when investors requested withdraw. It also pressured the smaller firms as they lack capacity of fund to maintain customers.

6.5 Management Routines

Management routines referred to routines that were created or modified to manage junior level employees and senior executives. Those staff included both loan officers and investment advisors at all management level. Through every day's practice on dealing with customers, employees accumulated knowledge and formed routines to better identify the risk and uncertainties. On one hand, fraudulent firms appeared often not only in Guangdong but wider China due to absence of authority on market. On the other hand, firms would not be able to access information and funding sources as their legal status were not fully recognised. Firms therefore worked out new routines to increase their legality and transparency to better accommodate their customers. They were trade associations, information exchange mechanism and alternative dispute resolution. Those new routines to some extent complemented the lack of regulation on the market and helped the customers and competitors in good business manner. Table 6.4 summarised the adaptation of routines of FinTech firms in management approaches. Three new routines were formed to tackle fraudulent behaviours from

employees as well as the competitors who might damage the reputation of the firm.

Table 6.4 Types of Management Routines

Conventional Routines	Problem	New Routines
Loan officers were incentivised for attracting new borrowers	Loan officers referred borrowers to each to maximise the work outcomes	FinTech firms hired no loan officers but brought information from other firms;
Loan officers handed in customers' profile to the firm for further assessment	Loan officer might submit fake document and misled the judgement	New division was set up between loan officers and credit assessors for authentication verification.
Dispute resolved at court between firm and customers	Waste of time and money with little effect at end	Alternative Dispute Resolution was introduced along with electronic contract

By initiating new management routines, FinTech firms attempted to protect their customers and sought the maximized benefits for their business. These approaches were different from the lending routines and investment routines as they were restructuring of organizational and managerial routes, rather than technique changes, to address fraudulent behaviours. These new management routines not only addressed the external fraud, but also fraud from internal staff and services within a firm. In addition, it required higher authorities in the firm to grant the permission to correlate different divisions in a firm, rather than single division actions. Further detail will be outlines below in three subsections.

6.5.1 Sharing Networks of Loan Officers

FinTech lenders were facing serious external risks from its borrowers and investors. Nevertheless they have to address the governance risks in all level of its organizations. The fraudulent risks raised from its employees have been highlighted in the interviews. In this section, levels of fraudulent behaviours will be assessed based on the narratives and summaries with interviews. The competition between loan officers exacerbated because the booming of the industry and homogeneous firms established their business in a same region with similar promotion tactics. Sometimes loan officers had to watch each other in securing their targeted clients. Even street fight occasionally took place between two groups of loan officers when they help their clients to claim their credit report (Sina, 2014).

New established firms would attract experienced team leaders or even city managers to join their firm by offering double or even triple packages. The leaving of key figure could be fatal to the old employees as the loan officers may bring not only valuable clients but strong team as well. The same loan officer would have to distribute pamphlets, make cold calls, visit borrowers to verify the information and collect money at maturity. Although the employees were not able to access benefits from the firms, they were highly dependent by their employers in originating deals and maintain clients. When high performance loan officers considered their job alternation, management team would retain their jobs by changing remuneration structure. As one of the director comments:

> Once a very good loan officer had to leave the team for following her husband to other cities, I most cried for her leaving as she brought away half of our deals (P2P6-P, 28/10/13, Beijing).

As introduced in the previous chapter, the value of loan officers and investment advisor reflected on the embedded networks of borrowers and individual investors. It became an increasing cost of FinTech firms to recruit fresh graduate and lost them in a short time. Similarly, the price for hiring experienced staff was rising as well. In order to alleviate high cost and risk of training loan officers or investment advisors, FinTech firms gave up recruiting and training full-time employees, but buying information from staff from other companies. It is because the embedded network of employees not only include customers, but also colleagues in other FinTech firms.

It has been quite popular in Guangdong that loan officers exchange borrowers' information among their private personal networks. They were motivated to exchange other borrowers' information because they need maximise their value proposition. Performance of loan officers were evaluated by the number of submission of deals and the number of accepted deals. On one hand, loan officers will be rewarded when they over-performed while, on the other hand, they might be punished if they failed in meet the minimum requirement of submission. As a result, the frequency of information flow between FinTech firms were highly robust. This process occurred within a same firm as well between loan-officers which is called Fei Dan (in Chinese 飞单) translated as flying deals. Loan officers admitted the existence of the underground network of information sharing which was recognized as the counter-party of rigorous evaluation towards their performance.

Sometimes loan officers worked with each other in passing and exchange profiles of rejected clients from their own company to the other. Bonus would be split between each other as well once the client was approved by the system or risk

assessment officer from the secondary firm. This cooperative manner has been increasingly accepted formally by the very late firms where there was either attempts to cut the labour of sale or no sales division at all. This transition appears in the first type of lenders that lending division has been completely replaced by external partners in the late stage of business evolution as well as the comments from team leader in another interview:

> We don't have a sales team. We depend on sales team from other companies to approach our clients. In comparing the products at the market, the salesman would choose which one to sale to their clients in gaining his bonus. In addition, the company is establishing online sales function that is supplementary to our current promotion (P2P7-P, 21/10/13, Shanghai).

This organizational routine benefited both FinTech firms and staff. On one hand, FinTech firms reduced cost of capturing information from the market and cost of preventing fraudulent risks from employees. On the other, loan officers boosted the working efficiencies of customer attraction. When a borrower was rejected by one FinTech firm, the loan officer can pass the information to other loan officers and FinTech firms to have another try. However, this loan officer based sharing network became problematic and was questioned by the FinTech firms.

6.5.2 Anti-fraudulent Division

This information sharing networks initially supported the circulation of value and resources in the embedded network of loan officers, but gradually went beyond ethical. Different FinTech firms paid different salary bonus for one borrower if he or she qualified for the loan risk assessment. Loan officers started finding the highest bonus in a day among several local FinTech firms and pulled all his customers in that firm before his employees. This arbitration behaviours betrayed

his own employer and broke the ethical conduct. It also happened loan officers had personal agreement with borrowers to share the loans once the approval were granted. It was suggested in the informal interview that some of the borrower had not genuine willingness to borrow. Those fraudulent behaviours became destructive to the FinTech sector and were questioned by senior managers:

> The Fei Dan network became a concern of mine and the entire company as well as other companies. We are cautious of who our borrowers are and where they are from. We were concerned about the lending risks as well as the reputation of our company (P2P5-CM, 20/11/13, Guangzhou).

To prevent the fraud happen, the FinTech firms, particularly that used human agents for market expansion, set separate anti-fraud mechanism between the local office and risk assessment team to prevent the fraudulent behaviours. Firstly, anti-fraud team was formed at the local office which connecting between local loan officers and the head-office. Second, anti-fraud team were also established at the head-office which connects to local anti-fraud team and risk assessment office.

Member of anti-fraudulent team were recruited from colleagues who were expected to higher education than sales agents. This team was trained to verify the validity and reliability of documents, identifications, valuation of assets, and they were capable of financial analysis and physiological tests. They were also equipped with knowledge and specialised device for ID card verification, internal database access and legal training. They are required to examine all the documents from borrowers and submitted to the customer relationship management (CRM) system that developed by the FinTech firm. In spite of being placed and administrated at the parallel level in the local office with loan officers, the anti-fraudulent team was able to exchange information with the head-office. In

contrary, direct communication between loan officers and the head-office is prohibited for the concern of anti-fraud.

In addition, local anti-fraud team was only able to talk with its counterpart in the head-office rather than credit assessment unit. In the head-office, the anti-fraud team reviewed the documents uploaded in the system and give feedback to the local team if further documents were expected from other units in the head-office. At the same time, the anti-fraud team in the head-office monitored data from each province and gave warning if necessary. In general, the anti-fraud team in the head-office was responsible for coordinating local office and other department in the head-office.

Figure (7.1) below outlined the role of anti-fraudulent team in the human agent FinTech firms. The dash lines represent the anti-fraud routines in the organization structure. It started from borrowers to the credit assessment unit but through three gateways, loan officers and anti-fraud officers in the local-office and head-office. The aim of this routines was to prevent fraudulent risks from loan officers and borrowers through human agent effort in the FinTech firms.

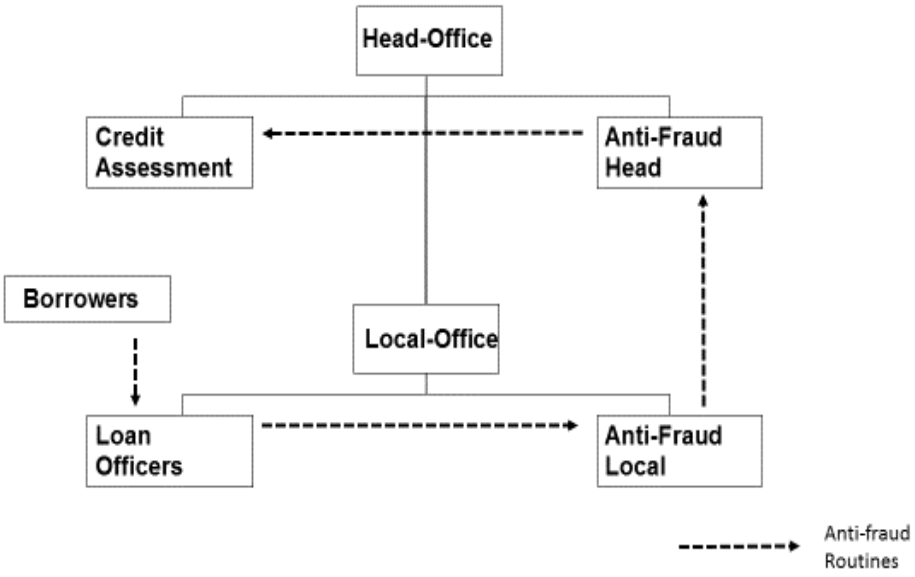


Figure 7.1 Anti-fraud team in FinTech firms

These measurement of FinTech firms pressured loan officers with requirement of KPIs. Except dealing with clients for salary bonus, the loan officers had to deal with anti-fraudulent routines from the Head-office and local office by verifying the customer identify and accuracy of information input. Loan officers were dealing with the head-offices from two separate division: the risk assessment team and the anti-fraud team. The cooperation between local office and the Head-office was important but fragile in the process. One of the local manager mentioned this in the interview:

> We always need to apologise for the loan officers as we are not able to accept their clients as agreed. The reason is the HQ changed the manual which was enforced immediately. We are then not able to upload the document as we were able to a day before. Sometimes we have to apologise to hard-working staff at the front desks (P2P5-VP, 21/21/13, Shenzhen)

This routine of isolation between loan officers and risk assessors identified the adaptive capacity of FinTech firms in Guangdong which was driven by the changing customers and employees. Each loan officer and investment advisor had its way of dealing with information, which indicated each employee is idiosyncratic. The firm standardised the process not on customer attraction, but the risk prevention so that they have control of loan application and pace of capital flow within the firm.

6.5.3 Customer Dispute Resolution

Regulators were much powerful than lawyers and courts in Chinese legal system and particularly in financial issues (Chen, 1986; Lin, 2014). Weak dispute resolution existed while retailing investors went on street to pursue political intervention. Angry people would create posters and block the entrance of lending companies or government institutions to petition their loss in investment and argue for compensation. There are three reasons the customers would not pick legal actions as priority.

First, the Chinese legal system has negative attitude towards disputes on FinTech firms. They are neither accepting those appeals from investors nor recognising existing evidence generated from the firm. One reason is that court would be not able to precede any civil appeals if they break criminal laws. Although Chinese law permits the lending contract between two civil parties, it strictly prohibits illegal fund-raising from the public and categories it as criminal offenses. Therefore the court would be very cautious if any appeals relate to illegal fund-raising as the court has to sustain or reject the case if it does.

Another reason brings difficulty to the court is the validity of electronic contract. In the marketplace lending model, when investors and borrowers were intermediated through firms, the contract between two parties was signed electronically through the website. However this type of signatories was not recognised by all the courts in Guangdong. Nevertheless the court were conservative to evidence that only banking statement was accepted rather than cash flow records that generated from new payment facilities that provided by technology firms. This exclusive acceptance on evidence contradicts to the prevalence of online payment utilities offered by FinTech firms and exclusion of banking sector on the custodian fund requested from alternative lender practice.

Last but not the least, the tradition of the court prefered the mediation rather than judgement in civil affairs which prolonged the process of disputes and increased the cost for the assurors (Lin, 2014). Very often firms or lenders would pursue alternative approach rather than court to settle the disputes due to the small amount of transaction compare with cost of court procedures. One of the interviewee withdrew his appeal due to the court requires notarizations for each deal originated from the firm by personnel regardless the same process, which needed at least 6 month to complete the process. Compare with the amount of money invested in small loans, the firm insured the deals by themselves.

Apart from the legal perspective, competitors might also attack each other by complaining to the local regulators. The excuse of complaining include illegal fundraising, fraud so on so forth. The consequences of complaint were serious including supervision interview, on site examination or even operation sustained.

Lending companies had to appoint senior executives within Guangdong or from other province to specific city to solve the problems. Some city managers experienced the expropriation of contracts and laptops by local regulators. In addition, loan officers were often caught by the police or enforcement team while they were promoting the lending service on the street by pasting cards or plugging name-cards on vehicles.

Lenders were worried about the absence of market order without formal and informal authorities. They initiated new department and internal reviews to tackle the chaos. To prevent the fraudulent behaviours from borrowers, firms added clauses in the service contract claiming the rights as agent of retailing lenders in case any delinquencies occurred from borrowers. In addition they worked with local arbitration commissions to have alternative dispute resolution rather than suing in the court. Guangzhou Arbitration Centre was the first local arbitration organisation in China that accepted dispute resolution on FinTech lending.

To cope with local regulators, some companies launched a department to deal with complains and maintain government relations. It was often the new department was not only dealing with one regulator, but several related government department, such as the Finance Affairs Office (FAO), the Business Administration, the District Officers and the Information and Technology Office, at the same time as there is no regulation in the market. Some firms invited retired regulator to join the board of directors or advisors of their company to mediate the relationship of regulators. While they are dealing with local regulators, they approached to provincial and even national societies as a trade association body to advocate light touch regulation from central government. Although there was

weak foundation to form a trade association, practitioners were keen to influence the policy makers and impress retailing investors to increase the confidence in the market and protect their business. As one of the interview explained:

> It happens before the new regulations set high bar and entrance requirement with limited hearing from the industry. The consequence was collapse of industry and wind off of business. Most of the lenders expressed the anxiety when this regulation appeared in SME sector again (P2P2-VP, 12/11/13, Shenzhen).

The relationship between FinTech firm and local regulators reflected the uncertainty with absence of regulation in this sector. Reporting and complaining to local regulators became a tactics of FinTech firms in the competition. FinTech firms also adopted organizational routines to address this uncertainty. Some of them hired in-house expertise in the head-office to respond emergent event from each local office. Some of them even allocate public affairs officer at city or province level which can respond local issues more efficiently. The mechanism of routine tasks in responding regulation will be explored in the future research.

6.6 Routines in FinTech Firms

This chapter introduced a broader definition of the routines, which were expected to explain how FinTech firm prevent fraudulent behaviour through organizational tasks. Based on this definition, routine can be formed at any level in the organization of FinTech firms. Specifically, this chapter explored the process of routine formation and evolution when FinTech firms dealt with uncertainties. To deal with asymmetric information and fraud, firms created new routines through competition, cooperation and trials and error. Those three mechanism have been used to develop new routines along with lending process and added new elements to the literature on the evolution of routines.

First, adaptation to customer routine drove the evolution of FinTech firms. Customer routines were formed because of their familiarities of lending process of FinTech firms and risk appraisal methods. Those customer routines include both constructive and destructive manners. Due to lack of information of borrowers and individual investors, FinTech firms paid time and cost learnt the lessons of customer routines as fraudulent behaviours. To prevent the potential harm to the firms, FinTech firms had to change and update loan guidance as adaptive routines against customer routines. In another word, the evolution of customer routines led to the adaptation of firms and pushed new routines formation within the firm. Therefore, the competition between FinTech lenders in Guangdong could be characterised as a competition that maximize the understanding of the routine of customers in order to minimise the risk in the lending process. This sequence of routine formation and evolution that drove by customers was not fully discussed in the routines literature.

Second, junior employees were the gateway of adaptation to customer routines at the hierarchy of organizational structure. They were directly and initially adapted the routines of customers as they were dealing with customers in every day's practice as well as their performance indication. The FinTech firms have their adaptations after they learned from their employees and adjust their management approach. Hence, a basis of shared system knowledge was generated to bridge the asymmetric information between different lenders and their loan officers, investment officers and customers. This collaborative routine was adopted by customers' adaptation to the conventional routines. The new routines served well in risk identification and mitigation associated with information asymmetry.

Last but not the least, routines were constantly evolving along with adaptation from customers and employees and from trails of error process by the FinTech firms. It was because not each firm adapted their own routine to address their customers. Even there were similar approaches had been taken by different firms, time of adaptation can still make difference. As some of the firms suffered from the cybercrime as lack of experience in information technology sector, they adopted new routines in addressing online fraudulent behaviours and data protection. Similarly, when the business environment changed, such as customer adapted fraud, FinTech firms had to learn from the adaptation and evolve its own routine to respond.

Earlier research argued that routines can increase asymmetric information because they reinforce the old practice, but also routines increase metric information given new approach to capture information source and judge its validity. New start-up firms were able to shape new routines and intended to replace the old ones (Bryson and Ronayne, 2014). FinTech firms, as a representative of start-up firm in financial service, were flexible in alter old routines because of capture and learning new ideas and practices even in uncertainty. It may be that competition, cooperation and trails of error that is the ultimate cause of formation of new routines. FinTech firms not only achieve creativity and leadership through routines, but survive and strike fraud through alteration of routines.

Good FinTech firms had to gain reputations harder than the regional lenders and banks. Not only because they were not regulated by the authorities, but also the disruption of fraudulent FinTech firms and cybercrimes within the market. To

protect those investors and borrowers on the platform, FinTech firms built up several routines and evolve with the fraudulent behaviours. As discussion in the sections (6.3; 6.4; 6.5), FinTech firms adopted routines at both the division level and the managerial level to protect the investors, such as the fire walls against cyber-attack, establishment of contingency fund, increase pledged lending against vehicles, counterfeit identities solutions and GPS devices. They also improved their services from communication with customers to understand their priorities and expectations. Those routines were not existed in the banking sectors which were protected by laws and regulations exclusively in that sector.

However, the FinTech firms also inherited the problems and the old routines from the banks which were the KPIs and bonus structures that incentivised miss-selling of financial products. The old routines were placed by the senior management team and the directors of FinTech firms who were working in the banking sectors. As indicated in the section 6.3 and 6.5, loan officers organised a network in a same city and exchanged customers' information for income optimization. Also, it resulted the danger of documents counterfeiting and gang up with borrowers. Although the new routines were adopted to alleviate the harm of information sharing and fake documents, FinTech firms needed more routines to address the challenge. The problem revealed the proximate of FinTech firms and banks and danger of performance measurement of staff in the FinTech firms.

6.7 Conclusion

In spite of this rapid industry growth academic literature on FinTech is still scarce and most research is not conducted in the context of China or specific region, which contrast to the latest development of FinTech worldwide (Bruton, et al.,

2015; Shim and Shin, 2016). This study offers the detailed analysis on the heterogeneity in information used FinTech firms in Guangdong. This offers insights into the formation and adaptation of routines of theories about information asymmetries.

Three types of asymmetric information have been identified in this chapter. First, information was asymmetric in technology adaptation. Due to lack of knowledge in internet security, the FinTech firms were attacked by cyber criminals. Similarly, the credit criminals used advanced technology to counterfeit borrowers' identity and other information in order to pass risk assessment and take the money from FinTech firms. Due to asymmetric information online to the offline, individual investors dropped visit to local branches as a group format and gave review on online forum. Those narratives of information asymmetry was not covered in previous literature because of lending process advancement. Second, information was asymmetric between groups of stakeholders, such as borrowers, individual investors and employees of the lending firm, due to rapid growth of peer-to-peer lending and homogeneous competition. The FinTech firms had to cooperate with colleagues in the same industry to form trade bodies to prevent the risks. Third, information asymmetry was also caused by the exclusion from regulatory framework including justice, credit and funding accessibilities and governmental issues.

FinTech firms evolved with customers in Guangdong and adapted to their behaviours and practices. For FinTech firms, this meant that standards of acceptable routines have to concentrate to a position wherein consumer interests are at paramount. The most fundamental argument for consumer routines lies in

the recognition that it is the principal rationale for evolutionary approach to drive formation and adaptation of routines within FinTech firms. Loan officers and investment advisors are the gateway of change as they are always speculating as well as its customers. Management team co-evolved with employees and customers through process of trail and errors.

CHAPTER 7
CONCLUSION

7.1 Introduction

Since China opened itself to the world in 1979 and joined the World Trade Organization (WTO) in the late 1990s, there was an emphasis by the national government of China on economic growth. However, this economic strategy did not emphasis social inclusion until relatively recently as the initial focus was on targeting particular places and groups across China. By 2016, only 5% of Chinese SMEs had access to financial services provided by conventional financial institutions (Lu, 2016). One particular challenge that China faces was keeping economic growth but developing a sustainable, inclusive and long-term economic strategy. Individuals and SMEs which were currently excluded from the current economic system and from mainstream financial institution needed to be provided with access to financial services. Particularly, SMEs have had great difficulty accessing external sources of finance and in particular from China's mainstream banks. FinTech offered one potential solution to providing SMEs with access to financial services.

This thesis has employed grounded theory to develop a methodology involving both semi-structured interviews and participatory observations as part of a qualitative study. An interview questionnaire was designed after desk research and pilot interviews with undertaken with a Chinese FinTech firms and micro-lending companies. After six-month field work in Guangdong province of China, 102 people had participated in the interviews from 42 firms and organizations, regulators, trade association representatives and investors. Interview data had

been categorised, translated, transcribed and analysed in 12 months before being explored using theory. The analysis shows that FinTech was highly developed in Guangdong compared with other regions in China subject to the number of firms, number of financial professionals, technology development and customer demand. FinTech firms had contributed to increasing access to finance in Guangdong for both individuals and SMEs. They developed business processes which were embedded within personal social networks. FinTech firms experience information asymmetry and fraudulent behaviour from customers but have developed organizational routines that have tried to deal with this problem.

This thesis has explored the geographies, resources, embeddedness, routines of FinTech firms in Guangdong province, China. The analysis began by exploring the existence of market gaps that prevented firms from obtaining loans to finance themselves or self-employed entrepreneurs. The persistence of this finance gap suggests that the Chinese banking system was unable to lend to SMEs, and part of the problem was related to top-down regulatory frameworks. FinTech firms are alternative providers of micro finance that have the potential to contribute towards closing this financial gap. FinTech firms tend to be locally based technology start-ups that are embedded in local businesses and governance networks using local knowledge to try to counter problems that emerge from information asymmetry between customers and service providers. This aim of this chapter is to summarise the main findings of this thesis, and revisit the core theories that informed the analysis in each of the substantive analytical chapters. The next section will re-examine the aims and objectives of this thesis including a discussion of the research gaps. The following sections explore the contributions made by this study

and develops policy recommendations for the Chinese FinTech sector. The final section identifies future research and also reflects on this project's research methodology.

7.2 Filling Research Gap: A Re-examination

This section re-examines the research questions developed in chapter 1 and reflects on the project's aims and objectives in relation to the research design, methods and analysis. Four objectives were identified at the beginning of this thesis (Chapter1, Section 3) which highlighted the evolution of FinTech actors/firms, the location of the study relationships between FinTech actors/firms/clients and operational processes including understanding the FinTech lending process. In response, this section will explore how this thesis has developed these four objectives through an analysis of FinTech in Guangdong.

There is no question that FinTech firms have been established in Guangdong and that they provide an additional and alternative source of access to finance for SMEs and individuals. They are an alternative source to the mainstream banks but for many SMEs they represent perhaps the only available provider of external finance and in this case they are an additional source of finance when there is no real viable alternative. FinTech firms targeted a market and regulatory niche in the provision of access to finance and also as an investment vehicle. Part of the reason for the growth in FinTech firm in Guangdong was attributed to the inability, inefficiency of the heavy-regulated banking sector (Chapter 3), but also the particular characteristic of Guangdong, for example the proximity of Hong Kong and the special enterprise zone at Shenzen. In addition, FinTech firms better utilized technology to serve disadvantaged customers, e.g SMEs and individuals,

than banks which prioritised technology implementation for international and policy transaction over the provision of services to SMEs and individuals. FinTech firms were a recent addition to China's financial system and have thus been under-researched. This thesis attempts to fill the gap in understanding the role FinTech firms play in providing access to financial services.

In addition, this study focused on Guangdong province, China, and is the first research project to explore FinTech at a regional scale in China. Previous research had examined alternative lenders in different national contexts (Marshall, 1989; 2004; Rowlingson, 1994; Bryson and Buttle, 2005; Appleyard, 2008; 2011; Zhao, 2008); very little academic work had focused on Chinese cities and accessibility of finance in a regional context. This thesis focussed on Guangdong province and examined the different actors providing FinTech services in this region. In addition, existing research on access to finance in China has highlighted economic, sociological and anthropological perspective and developed a positivist view on credit provision in China's rural areas (Du, et al, 2005; Liu, 2007; Li, 2011; Tian, 2013). In this thesis, FinTech firms located in Guangdong FinTech have been examined heterogeneously and idiosyncratically using a dynamic evolutionary perspective (Foss, 1997; Boschma and Martin, 2010; Bryson and Ronayne, 2014), which had not been applied to FinTech firms before.

This thesis also filled a gap in understanding the relationship between FinTech firms and their customers. In addition, it revealed FinTech firms, not only coordinated activities with local lenders, but worked closely with information service providers, investors and regulators in the same geographical context. By

using the concept of embeddedness, this thesis addressed new aspects of embeddedness or arm-length networks in the operational process of FinTech firms in Guangdong. Although similar interpretations had been offered by previous research (Baker, 1990; Uzzi and Gillespie, 2000; Luo, 2016) in banking services, FinTech firms' operational process offered new perspective in understanding embeddedness in a Chinese context in which a problem exists between customers and providers regarding trust.

Last but not the least, this thesis added new empirical analysis on information asymmetry by exploring how FinTech firms absorb knowledge from customers and form new routines to prevent risks. The problems related to asymmetric information meant that FinTech were exposed to fraudulent behaviour by actual and potential customers. There was an added complication in that FinTech firms are an unregulated sector of the Chinese finance system and regulation was only developed from 2016 when investors were exposed to fraudulent FinTech firms. This thesis identified the organisational routines and processes used by FinTech firms to try to prevent risk and to tackle information asymmetry in a dynamic manner. This analysis developed the existing research on information asymmetry and market failure by exploring how FinTech firms had developed protective routines to identify additional information to inform the lending process that was not used by the mainstream banks and was an attempt to prevent fraud and reduce lending risks.

7.3 Contribution

This thesis has made three contributions to the research on financial technology and inclusion from a firm's perspective. Those contributions include further

development of the knowledge gap and are the primary building blocks of this thesis. In summary, three core contributions can be identified. Firstly, this thesis has explored the evolution of China's financial system in terms of itsspecific functions and location of financial provision and financial inclusion for SMEs with a particular focus on exploring the emerging geography of China's FinTech industry. Second, this thesis has identified social embeddedness in FinTech operational processes, including lending, marketing and fund raising. Third, this thesis explored the evolution of organizational routines along with the adaptation of customers to existing routines. The next section will explore these three contributions in turn.

7.3.1 FinTech Ecosystem in Guangdong

Previous research on financial inclusion and financial accessibility indicated that firms involved with addressing financial inclusion were located in marginal places in both metropolitan cities as well as rural communities (Bryson and Buttle, 2005). FinTech firms in Guangdong, however, did not follow the same trend, and were concentrated over eastern China in the major cities and coastal provinces. FinTech firms were established in response to economic development and market opportunities rather than by social visions. The consequences were that FinTech firms succeeded as they avoided the capital costs of created a branch network, but had limited resources to provide services to firms or individuals who were did not use Smart Phones mobiles or did not have access to the Internet.

This thesis began by exploring FinTech firms in Guangdong, or the establishment and operation of new financial vehicles based on the application of technology to the delivery of financial projects. FinTech firms provided loan products to

financially excluded firms and individuals. As technology start-up firms, Chinese based FinTech firms were relatively small firms compared to the mainstream financial institutions but acted as an intermediary between individual borrowers and investors interested in peer-to-peer or peer-to-business investments. SMEs were also excluded from the mainstream banking sector as they focussed on providing financial services to larger state-owned-enterprises. By exploring the financial gap in Guangdong province left by regulated financial institutions, the thesis identified the heterogeneity of financial services provided by FinTech players, which was different to the relative homogeneity of service provision by the regulated banking sector (Chapter 3, section 3, section 4). It was important to note that FinTech firms were not formed in a vacuum as theywere shaped by existing resources, such as technology, social networks, regulations and knowledge held by borrowers, investors and policy-makers (Chapter 4, section 5). The relationship between accessing the different resources partly explains the heterogeneity of FinTech firms, for example, those providing loans with collateral provided by firm-based assets as against those targeted individuals with loans secured against, for example, cars.

At the same time, the emergence of FinTech firms in Guangdong indicated that locality matters in the financial services because of local knowledge as well as relationship banking. Evidence has been demonstrated in the Chapter 4, 5 and 6 in terms of how local government like Guangdong built up locally embedded infrastructure and policy framework not only to support FinTech firms but also other local lenders. Although the power from the local government was limited and their power did not influence banks very much, the local authority was substitute

to the central government in directing local financial sources. The balance between central government and local government in regulating financial services is essential to the development of the FinTech firms as well as the empowerment of local financial ecosystem. Lessons to learn on the regulation side from the perspectives of local areas will be extended in the discussion in the following sections.

7.3.2 Embedded lending network

Three types of FinTech firms were identified. First, some FinTech firms utilised digital technology to attract customers over the Internet with a focus on social networking sites such as WeChat, Weibo or e-commerce firms that provided online services for frequent consumption. FinTech firms promoted their services, organised marketing events over those social networks, and expanded using third party referrals (Chapter 5, section 3). Second, other FinTech firms employed a large sales team in each major city of Guangdong and targeted other cities. They achieved expansion and growth of business not from the accumulation of registrations on their websites, which was perceived as an online platform, but by social relationship developed by sale agents they recruited in each city. This is a more conventional agent-based marketing and recruitment process (Chapter 5, section 4). Third, FinTech firms used borrowers' assets – for example, cars - as securities when there was insufficient data to determine lending risks. FinTech firms monitored the mobility of vehicles of borrowers' and transferred the ownership of cars through personal relationship with local vehicle registrars (Chapter 5, section 5). Embedded personal relationships and the use of cars for security contradicts the image of FinTech firms as being hi-tech firms with limited

investment in fixed capital infrastructure. However, of the use of cars as security provides an example of local embeddedness by highlighting the importance of social relationships in the unregulated FinTech market.

Most FinTech firms were only providing services in the city where human resources and mobile internet services had full coverage. The importance of embedded networks explains why FinTech firms tend to locate in urban areas. The current business model did not support FinTech firms in disadvantaged areas where social networks would be under-developed or dispersed and additional sources of information to inform the lending process would be difficult to obtain.

7.3.3 Organizational Routines against fraud

Another critical contribution of this research concerns the evolution of organizational routines associated with increasing fraudulent behaviour from both borrowers and FinTech providers. This thesis explored routines that have been developed by FinTech firms to try to deal with actual or potential fraud and also explored the evolution of routines. The fraud risk was a result of information asymmetry that could be attributed to the inconsistency between old routines within a firm and newer routines linked to alterations in customer behaviour. When customers hide their identity or information from FinTech firms, an extreme form of information asymmetry occurred.

This thesis added to the theory and context in terms of debt capital, financial accessibility and FinTech literature with regard to overcoming information asymmetries. FinTech firms have attempted to develop new routines to prevent the risk of fraud and information asymmetry in operational process by learning from customers and employees who constantly exchange resources and

information for mutual benefit. FinTech firms have developed strategies to try to cope with tricks developed by actual or potential customers that might lead to fraud. By learning from customers and employees who had local knowledge, FinTech lenders have learned enormously from conventional financial institutions in terms of the ways in which to identify fraudulent risks (Chapter 5, section 4), but borrowers adapted to the existing methods and developed new techniques to hide their identity (Chapter 6, section 4). Therefore, to deal with processes that lead to enhanced asymmetry, firms have had to develop new routines.

FinTech firms, as with other start-up firms, have to adapt to alterations in customer behaviour and adopt new routines to deal with the information gap. This thesis identified three mechanisms regarding the formation of routines and the evolution of existing routines (Chapter 6). First, customer routines drove the evolution of FinTech firms by requiring risk mitigation through fraud prevention including using additional sources of information in the lending process. Second, junior employees played an important role in adaptation to customer routines within the hierarchy of the organizational structure. Third, FinTech firms learnt to protect the borrowers and investors on their platforms with an evolutionary manner which applied ICTs and new business routines to ensure responsible lending and borrowing.

The evolution of practices reflected the benefits of technology in advancing financing services and offering alternative and additional source of funding to the local business, but also revealed the tension between innovation and data protection as internet based activity. Although the regulation didn't come up with the development of FinTech firms, the importance of regulation and market order

worth being acknowledged. The following section will explain the implication of this thesis upon regulation of FinTech firms and services.

7.4 Regulation Direction

From 2013 to 2016, the FinTech sector attracted great attention from investors and regulators due to rapid growth. In China, peer-to-peer lenders were not formally regulated until late August 2016 (CBRC *et al*., 2016). The new regulation mandate included detailed rules for peer-to-peer lenders such as loan size, a cap on the number of customers, such a cap on the number of loans per capita and centralised online transaction databases. This thesis did not discuss the appropriateness of regulation, but some of the findings might be relevant to the regulatory framework and business ecosystem that is developing to support FinTech firms in China and might benefit local SMEs. As summarised in the earlier section, FinTech firms have been embedded in local business networks and were capable of obtaining information to address the asymmetric problem dynamically between customers. The outcome of the research reflected the debate on the boundaries of regulation between state and market actors. In this section, five recommendations will be proposed in relation to the regulation of FinTech firms in terms of openness, intervention and self-regulation.

Most firms expressed the same concern regarding the absence of regulation and the critical changes that might occur in the near future. Those concerns formed into collective propositions for local authorities to consider and led to the development of interim controls/regulations placed on the FinTechsector. It was identified from this research that FinTech firms were able to keep growing their

businesses as well as to develop new routines to prevent risks. On the one hand, they worked with employees and customers in the same geographical network to originate deals. On the other hand, FinTech firms had to observe their practices and strived for the development of routine measures that would support FinTech growth without threats from fraud and other uncertainties. The embedded business activities and dynamic routine process indicated that to some extent the self-regulatory ecosystem worked (Nambisan and Baron, 2013). By and large, a well-developed self-regulatory process might enormously help individuals to select appropriate courses of action or strategies, considering their major objectives and resources, while shunning those that did not match up with these objectives and resources. This finding echoed with previous research on self-regulatory processes which were substituted or replaced by the development of a regulatory framework by the national government of China. At the same time, regional government should have the authority to It suggested that a different regulatory framework needed to be developed and applied to FinTech firms compared with the current regulation of other financial service providers.

The growth of FinTech was not subject to government intervention, nor was it limited to tech start-up companies. Instead, following the classic contribution to economic theory behind the growth of firms, a firm was a fundamental aspect of human behaviour, and the central part of a dynamic, vibrant, successful market economy. The best that government policy could do was to encourage FinTech by allowing an environment that encouraged FinTech firms to flourish freely with open competition, rules of law and within a transparent and effective legal system. It was also optimal that the Government did not create FinTech firms or tell them

what to do. The following are five areas that this thesis may contribute to in terms of policy-making to support the Chinese FinTech sector.

First, government policy should not interfere with firm planning, forecasting, and investing through the development of an inconsistent banking policy. The creation of monopolistic banking institutions and the segregation of information and capital source protected the mainstream banks from the uncertainties of SMEs, but limited their outreach to local small firms. The regulatory intervention also limited the innovation capacity of banks as well as discouraged them from adopting technology into their business and routines. In contrast, FinTech firms relied on market prices to perform “economic calculations” (Kirzner, 2015) without external intervention. They have been forming judgments about what to produce based on embedded resources and predictions of market change. The limitations of loan size and number of borrowers per firm, for instance, hindered the economic calculation of FinTech firms. Moreover, this encouraged speculation in FinTech firms without thorough consideration of local embeddedness and challenge regarding the evolution of customer behaviour. Stimulus and forms of activist policy created “regime uncertainty” (Klein, 2015) that made FinTech firms favour short-term over long-term, growth-creating investments.

Second, FinTech firms should not solely measure their success by reference to capital markets or by focusing on providing returns to the equity investors, but should also measure success by providing benefits to customers and by accumulating capacity through advancement of service and products. Monetary expansion not only increases the service price of FinTech firms, but also increases the variability of relative prices, making economic calculation particularly

ambiguous. Even knowing that an artificial boom was under way, FinTech firm must exercise judgment regarding the opportunity, scale, and profitability in relation to FinTech firms' own markets, rather than focusing only on the valuation and expansion using other people's (equity investors) money (Chapter 5, section 3). Judgments are particularly difficult to make under periods of rapid monetary expansion. Once a recession hit, there would be national policies to stimulate the economy, restructure industries, or allocate resources to politically favoured firms and sectors. This makes a bad situation worse by discouraging entrepreneurs from liquidating poor investments and directing resources to better uses or more efficient customers.

Third, the government should reform the legal constraints placed on small firms; in particular, personal insolvency, illegal fundraising and acceptance of electronic evidence should be reassessed and examined. The failure of firms is acceptable across a business cycle and such failure should not be regarded as a sensitive issue in terms of public policy, but is an example of a market working in practice (Chapter 3, section 2). Schumpeter's process of creative destruction occurs as entrepreneurs' experiment with different combinations of inputs and outputs, trying to find those that make the best use of the economy's scarce resources (Schumpeter, 1934; Klein, 2015). If a FinTech firm cannot meet that customers' needs, it should be replaced by other firms. This is reflects the operation of the market as it engages in a process that allocates resources to and between firms.

Fourth, policies should not plan the development of clusters of small firms and innovation. The remarkable success of Guangdong's information technology industry, centred in Shenzhen, along with other technology clusters in places like

Longgang and Dongguan, have tempted policy makers to consider that they can engineer the next Silicon Valley through targeted subsidies, tax breaks and other instruments (Chapter 3, section 5). However, technology clusters emerged from the bottom up, not the top down. Ecosystems often rely on powerful “anchor entities” such as universities, incumbent firms, research institutions, and the like, but these anchors cannot be planted for the specific purpose of creating an innovation ecosystem. It will be hard to predict where the next cluster will emerge, what services it would offer and where new markets will result. Governments should also form a regulatory framework based on advice from civil societies, such as trade associations and key representatives, rather than making decisions in isolation (Chapter 6, section 4).

Fifth, FinTech services as well as other internet-based activities should be better acknowledged by legal and regulatory studies in terms of data sharing and privacy protection. FinTech firms collected information from customers, both borrowers and investors, for the purpose of risk management and fraud prevention (Chapter 5, Section, 3). At the same times, FinTech firms took a different approach in depositing and utilising the personal data, which was distinct to the financial institutions (Chapter 4, Section 5; Chapter 6, Section 3). The application of customer data would help identify multiple borrowers and curb over-borrowing, yet it also raised concerns over confidentiality and data protection (Gai, et, al., 2016; Allen & Overy, 2017; Zetzsche, et al., 2017). This tension and other important issues could not be fully covered in this thesis, but they are worth to be better addressed in the future FinTech research on the policy implementation.

7.5 Future Research

This research has explored FinTech firms as one part of the solution to support financially excluded enterprises in Guangdong. The research has focused on access to finance for small firms using Guangdong's FinTech firms to collect field data between the end of 2013 to the beginning of 2014 (Chapter 2, section 2.3). The six month work identified the initial evolution of FinTech firms in Guangdong and interestingly identified that Guangdong had developed an innovative cluster of FinTech firms and that this cluster was one of the most important emergent FinTech clusters both nationally and internationally. However, this research is only able to present preliminary findings on a small sample of FinTech firms over a limited time period. After three years of data collection, Shenzhen has overtaken Silicon Valley and become one of the largest FinTech investment hubs globally (FT, 2016). This trend indicated more research should be undertaken regarding the evolution of FinTech firms using a wider sample of firms.

Further research should also explore the wider range of services provided by FinTech firms, which are playing an important role in the changing Chinese economy by undertaking research into equity crowdfunding, distributed ledgers, payment industries, asset management firms, and insurance, regulation technologies and FinTech venture capital funds. This is an example of how financing marginalised communities is able to reduce inequality within the financial system and society. Peer-to-Peer lending firms were, therefore, only part of the story as they operate revolving loan funds, and are only one type of FinTech firm (Chapter 1, section 1.2). Even in the selection of small firms' customers, FinTech firms also provide a variety of services apart from peer-to-peer credit (Chapter 3,

section 3.5). The evolution of FinTech firms may involve more complex routines and embedded networks than the current conceptualization developed in this thesis.

First, the evolution of the FinTech firm ecosystem in Guangdong and neighbouring regions, such as Hong Kong and the Zhejiang province of China, also warrants further exploration in three areas. One strand of research that urgently needs to be undertaken is detailed research into FinTech investors, and especially the longer term social, economic and political impacts that can be related to FinTech investment. The investor was a significant driver behind the evolution of the FinTech sector both in China and other countries. This thesis has identified the role investors, either venture capitalists (Chapter 5, section 5.3) or institutional lenders (Chapter 4, section 4.3), play in addressing some aspects of financial inclusion by shifting the focus away from the mainstream financial institutions to FinTech firms with their focus on supporting local SMEs. This reflects the complex role financial services play in both local, national and global production network and the role FinTech firms play in the intermediation and facilitation of the networked financial world (Bryson, 2000; Neil et al., 2014).

Second, both regulation and technology were regarded as drivers of financial innovation (Wall, 2014), but they drove the development of FinTech differently. This thesis has placed a spotlight on the ways in which technology was intended to support SMEs (Chapter 3, section 3; Chapter 4, section 3) as well as how technology has been used by FinTech firms to enhance the provision of financial services to local grassroots customers, but the primary driver is not about addressing financial exclusion, but is instead about profit seeking behaviour

(Chapter 5, section 3; Chapter 6, section 4). One outcome of this search for profits developed via the application to FinTech solutions to the provision of financial services is some reduction in financial exclusion. Nevertheless, there is no information regarding the scale of this reduction and this requires further research. The issue is who is still excluded from access to finance, and, of course, this is about access to finance rather than cost of access to finance. However, further research is also required in the following two areas first, the identification of the best, safest and most effective technology for financial services to use for retail customers; secondly, which regulations should be set to encourage FinTech firms to favour small customers and to contribute to overcoming financial exclusion.

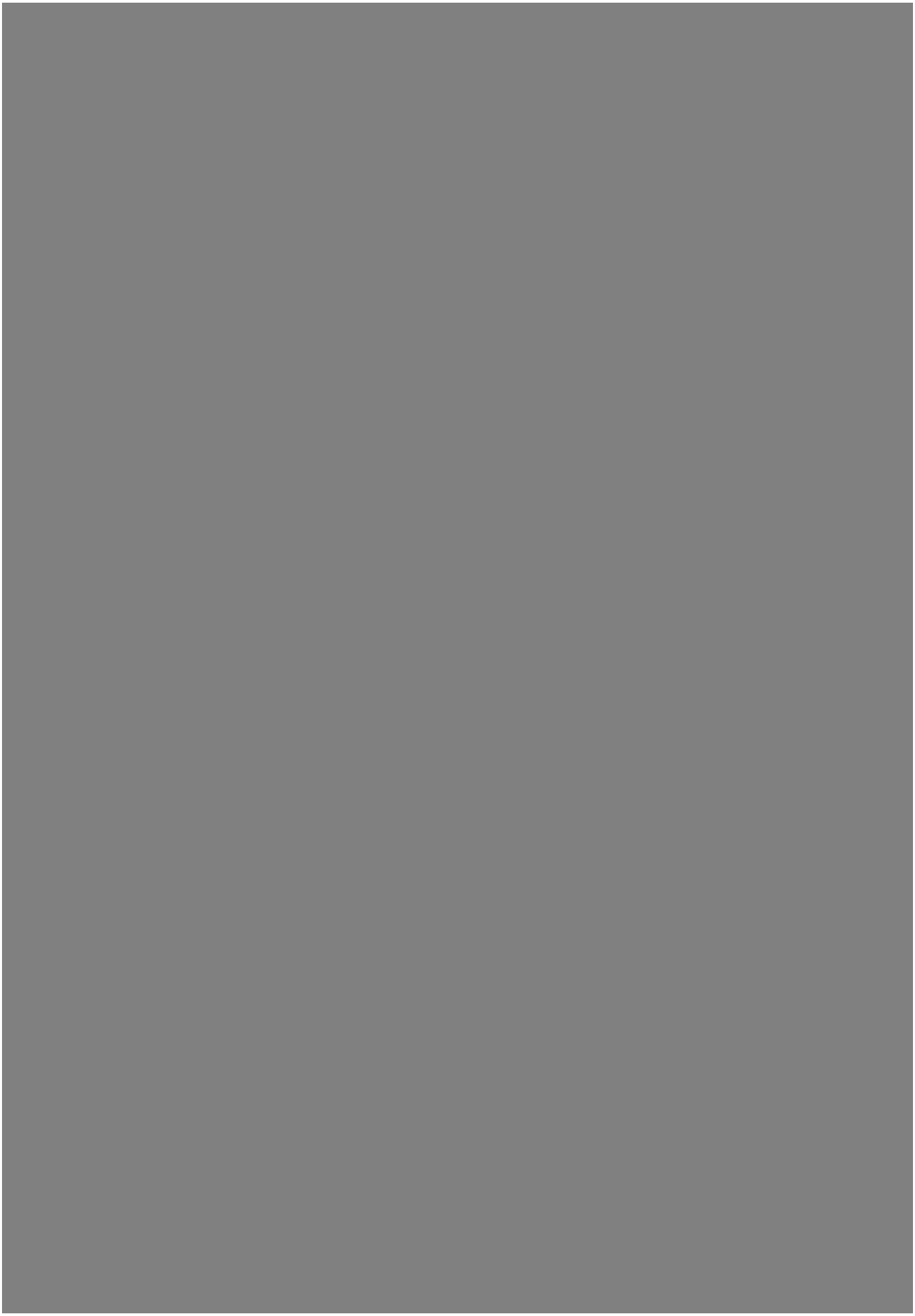
Third, future research must understand the customers' point of view regarding FinTech firms. Customers have been identified as a driver for FinTech firms to improve their services and mitigate risks (Chapter 6). The Consumer Paramountcy or Consumer Sovereignty was a term that is mostly applied in the Wealth of the Nation by Adam Smith, in which quotes he noted that: "Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer" (Smith 1776:660, para. 49.). Equally important for FinTech firms, or perhaps this is the other side of the coin, are borrowers, who were small firms in various industries and individuals and institutional investors, who were looking to optimise their money management. They were the consumers of FinTech firms and they have shaped the landscape, processes and routines of FinTech services. It is critical to understand their needs and expectations as these will, along with regulation, decide the future of the Chinese FinTech sector.

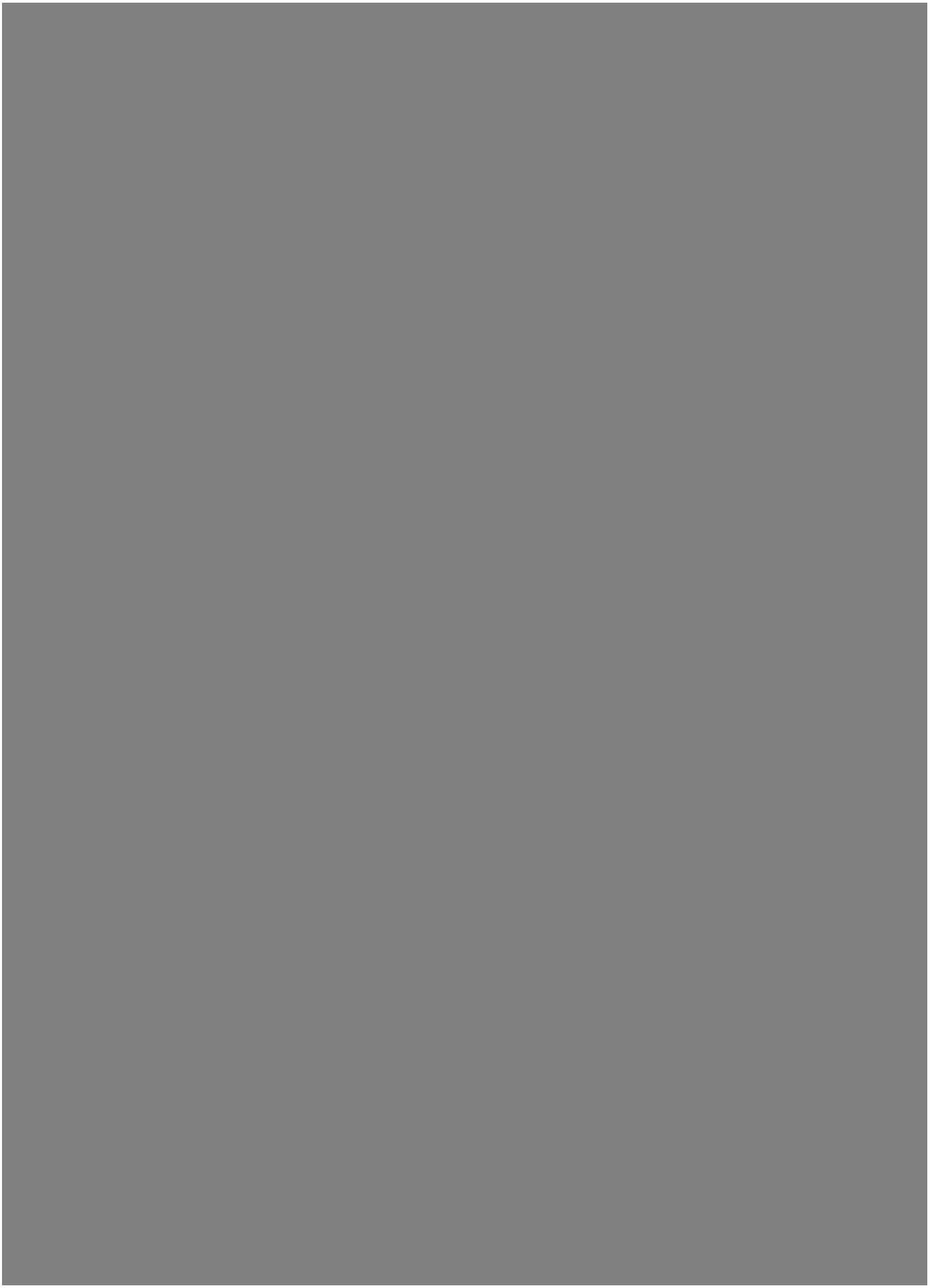
Finally, the research design of this thesis illuminated further research in the context of China by selecting a set of research methods. Four lessons were learned through the application of this research design and methodology to FinTech in China: obtaining references, gaining trust during interviews, participating in social network events as well as linguistic ambiguity. The completing of this research benefited from key informants who introduced the researcher to the in the local financial ecosystem. The use of third party referrals is an important part of the process of undertaking research in China. A second step was to gain trust from the interviewees so that they would provide information and knowledge as well as introduce provide an introduction to their personal networks. This technique has been explored in the discussion of the snowballing sample methodology (Chapter 2, section 3) but it is very useful in China's contest. One circumstance is that the researcher was encouraged to become involved in social life of interviews. Being invited to participate in a dinner or drink indicates that the researcher was trusted by interviewees and by accepting these invitations trust would develop between the interviewees and interviewer and this would add value to the research. Last but not the least, language should be carefully dealt with in the interview process in relation to the interviews and data analysis. Sometimes the language used in the interviews was broadly academic in nature but this was not the same type of language used by local practitioners. The background of the research in terms of working experiences and language may influence the interpretation of research results.

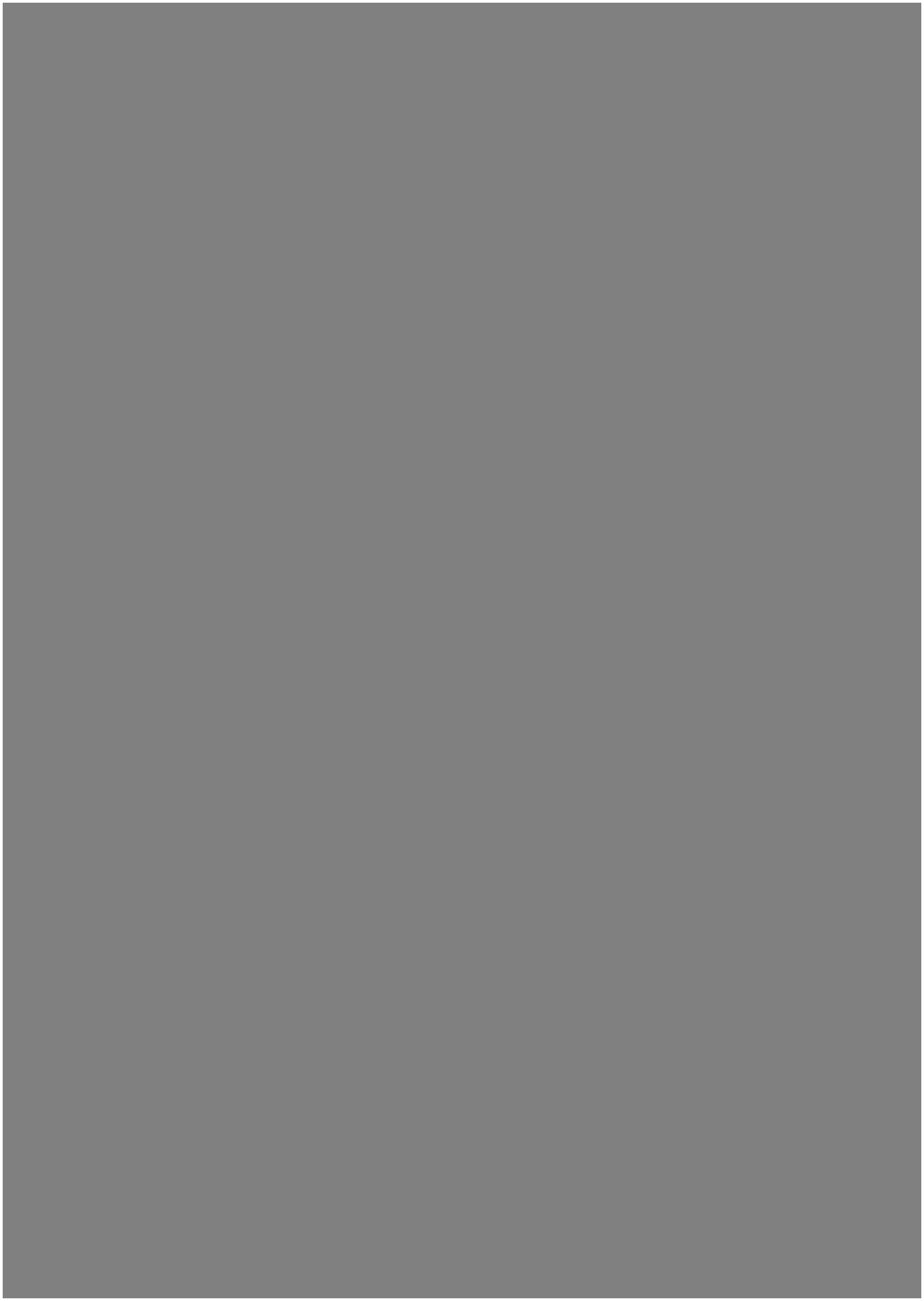
7.6 Summary and Conclusion

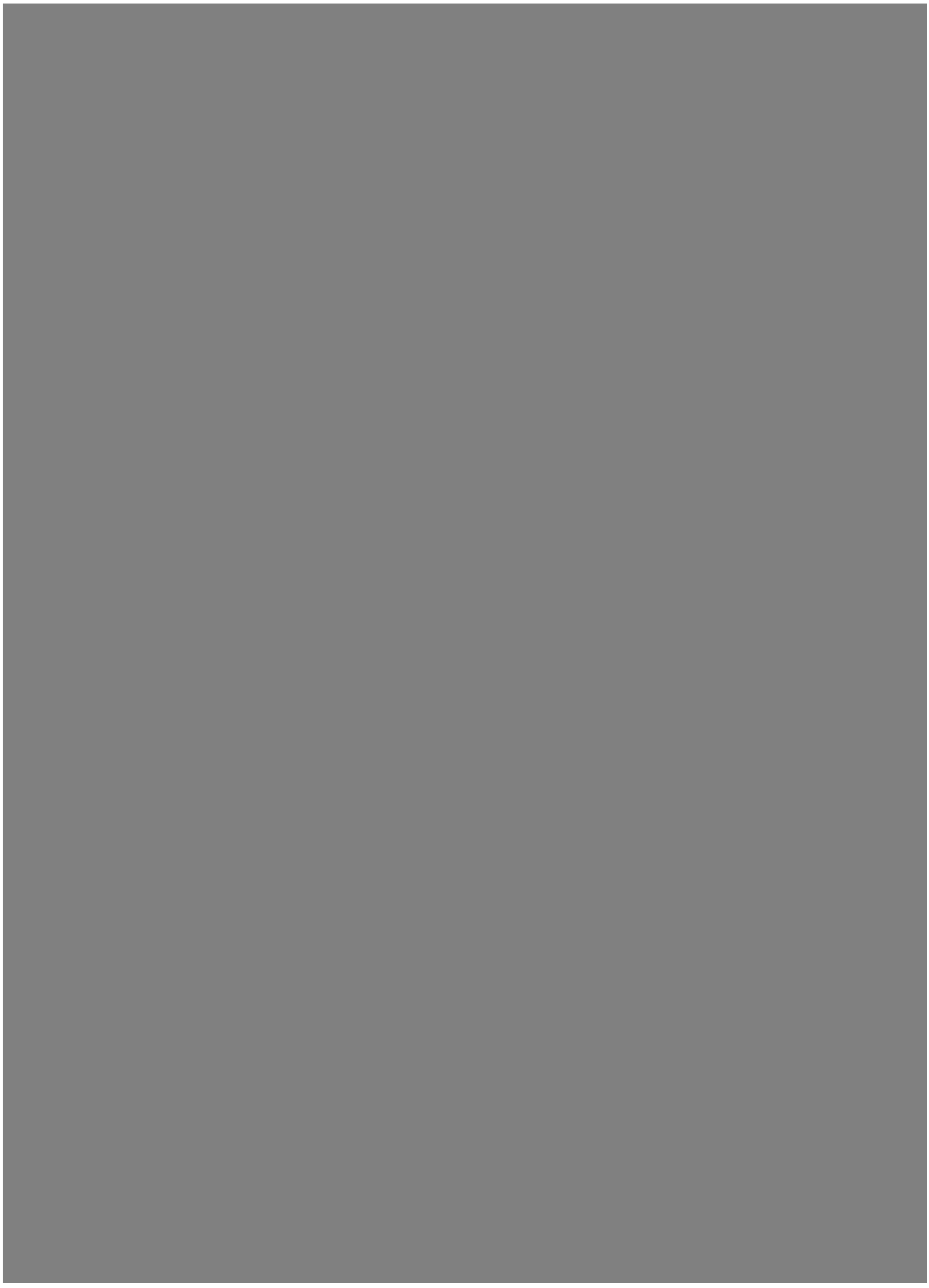
The FinTech sector is still a young but robust sector that has not received much academic attention despite developing interesting practices and services compared to the mainstream or more conventional financial services in China. Inevitably it provides a new angle to understand financial inclusion and exclusion given the status quo in terms of diversity and the adaptability of FinTech firms. This study offered is the first to explore the emergence of FinTech firms in China and it will be the first of many research projects that explore the growth and practices of FinTech firms. This thesis has highlighted that FinTech firms are highly multi-embedded into local ecosystems and drew around the networks of founders, employees and customers. Their evolution and adaptation reflects operational routines that were expected by customers but their development and evolution was influenced by competitors and employees. In addition to technology advancement, FinTech firms have been tried to become embedded in local networks to attract customers, mitigate against risk and to engage in resource exchange. By exploring these aspects of FinTech firms in Guangdong, this research contributes to understanding the on-going development of FinTech firms in China, but als in contributing to the academic and policy debate regarding access to finance, SMEs and the emergence of alternative providers of financial services. FinTech, today, represents one of the first applications of new forms of information technology to the provision of and access to financial services. It reflects the on-going transformation of economic relationships that are mediated through the interface of the Smart Phone that links actual and potential consumers with providers of services. Technology and its applications to financial services lies

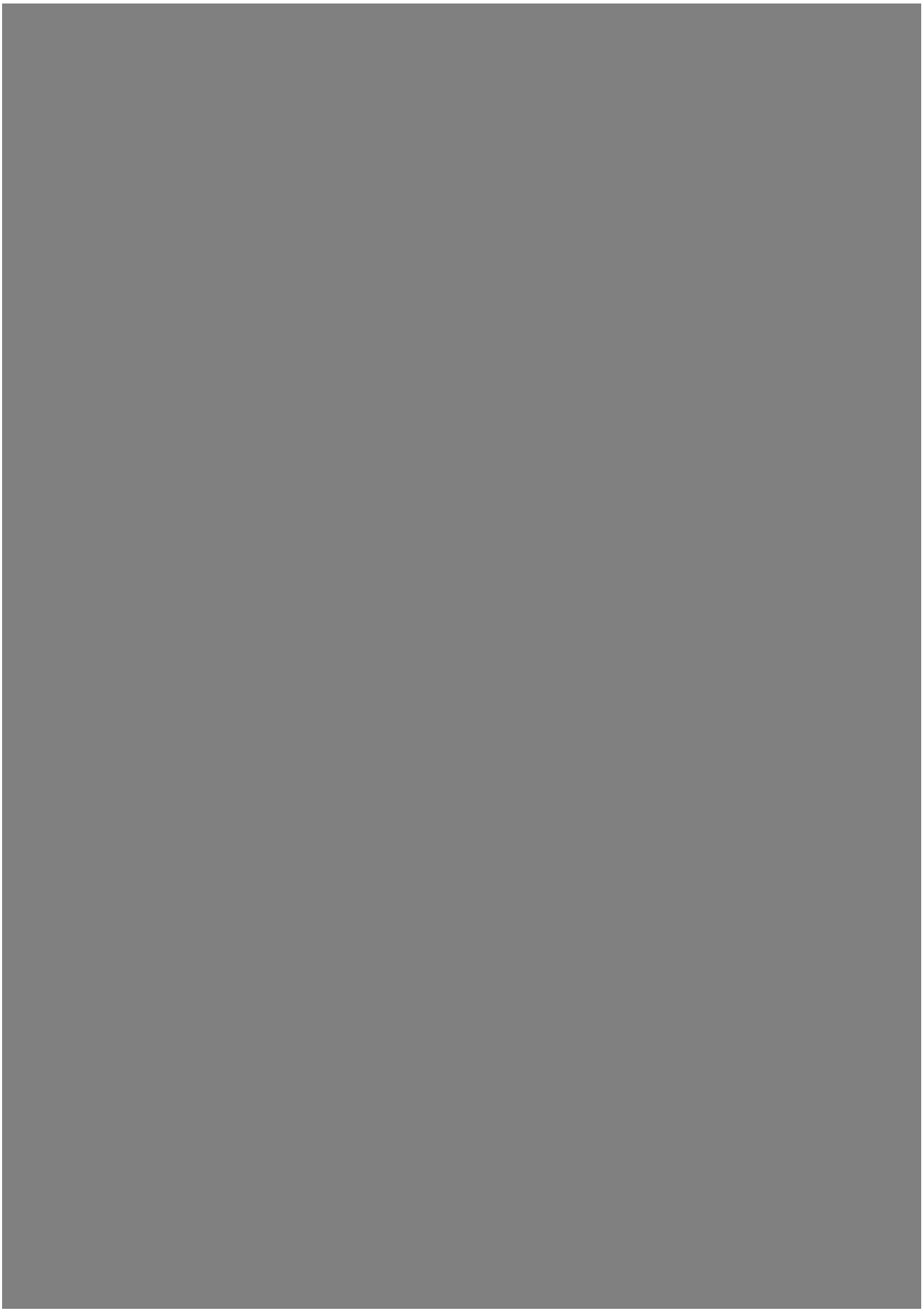
at the heart of the emergence of FinTech. Nevertheless, attempts by consumers and FinTech providers to ‘game’ the system leading to fraud and enhanced risks is a major problem. Like all financial services, the primary difficulty is mitigating risk that results from asymmetric information and central to this asymmetry are people. The on-going evolution of FinTech needs to continue to develop routines to address fraud and provincial and national regulation must continue to be created to reduce the exposure of customers to fraudulent FinTech platforms. The FinTech platforms must guard against fraudulent behaviour, but potential and actual FinTech investors and borrowers must also be aware of the risks of using financial services provided by a relatively new and under-regulated sector. What is certain, is that the continued development of China’s economy relies on effective, sustainable and secure financial services. The difficulty is that China has still some way to go towards developing such a system and many SMEs still find it impossible to access finance.

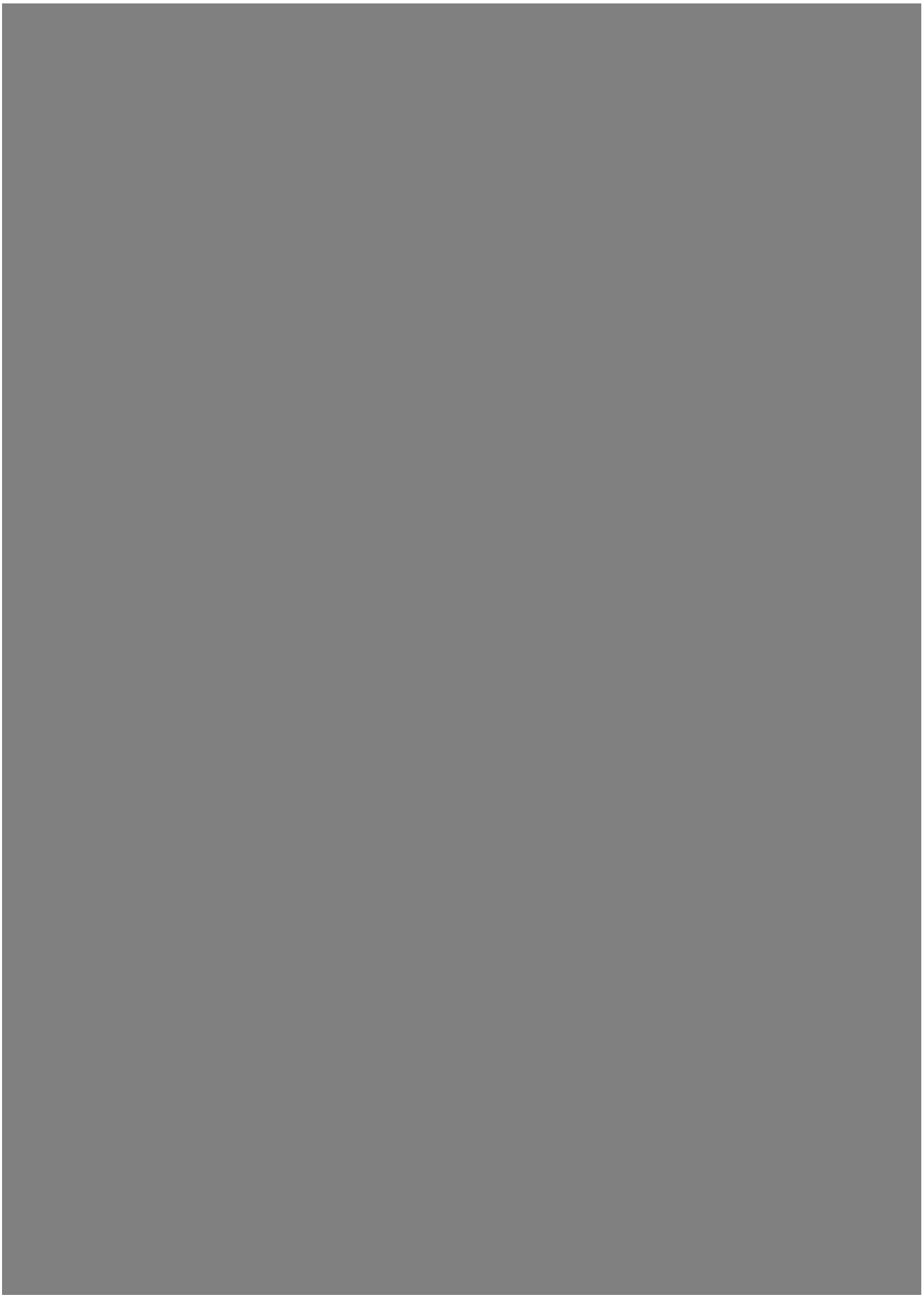


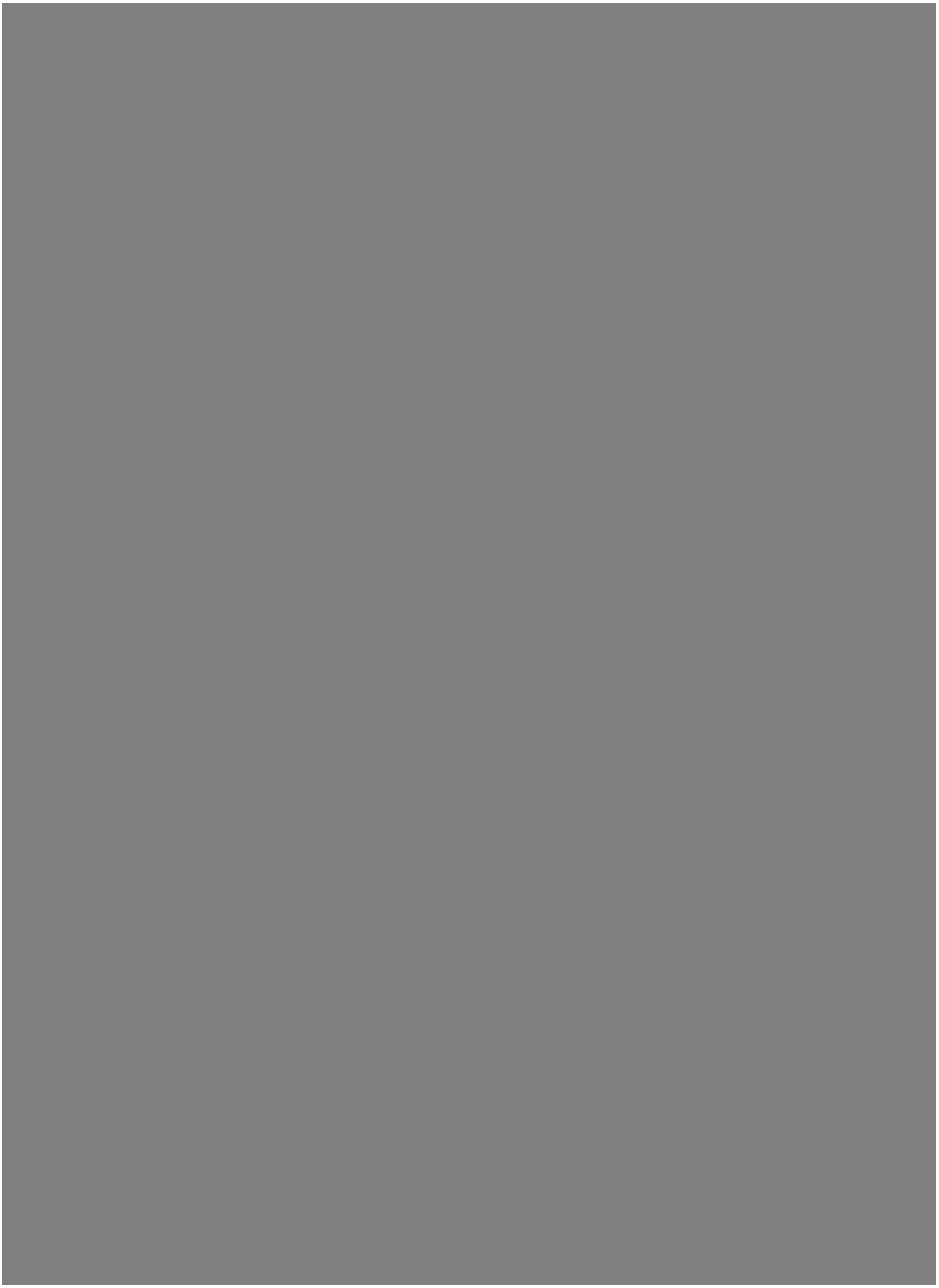


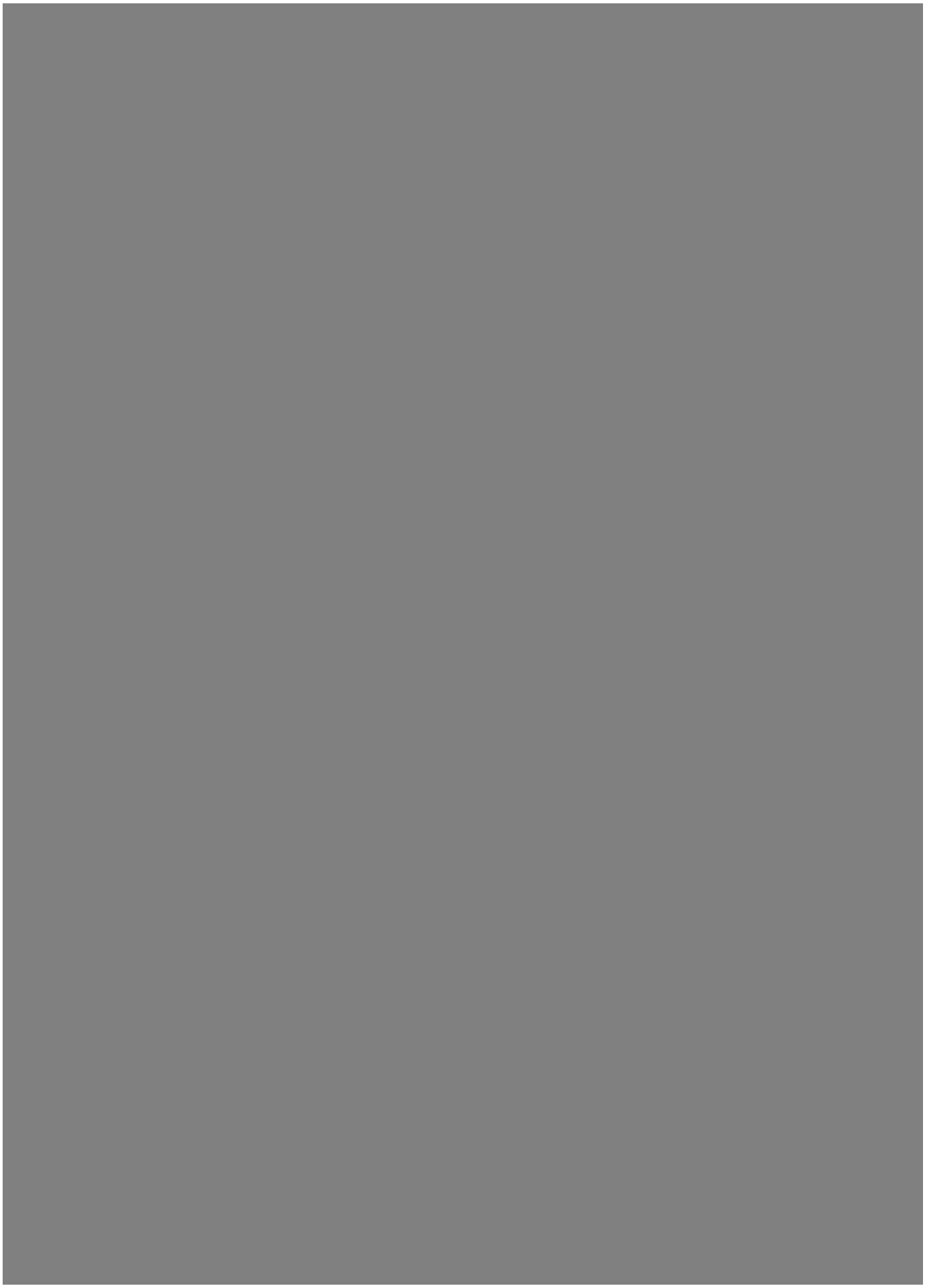


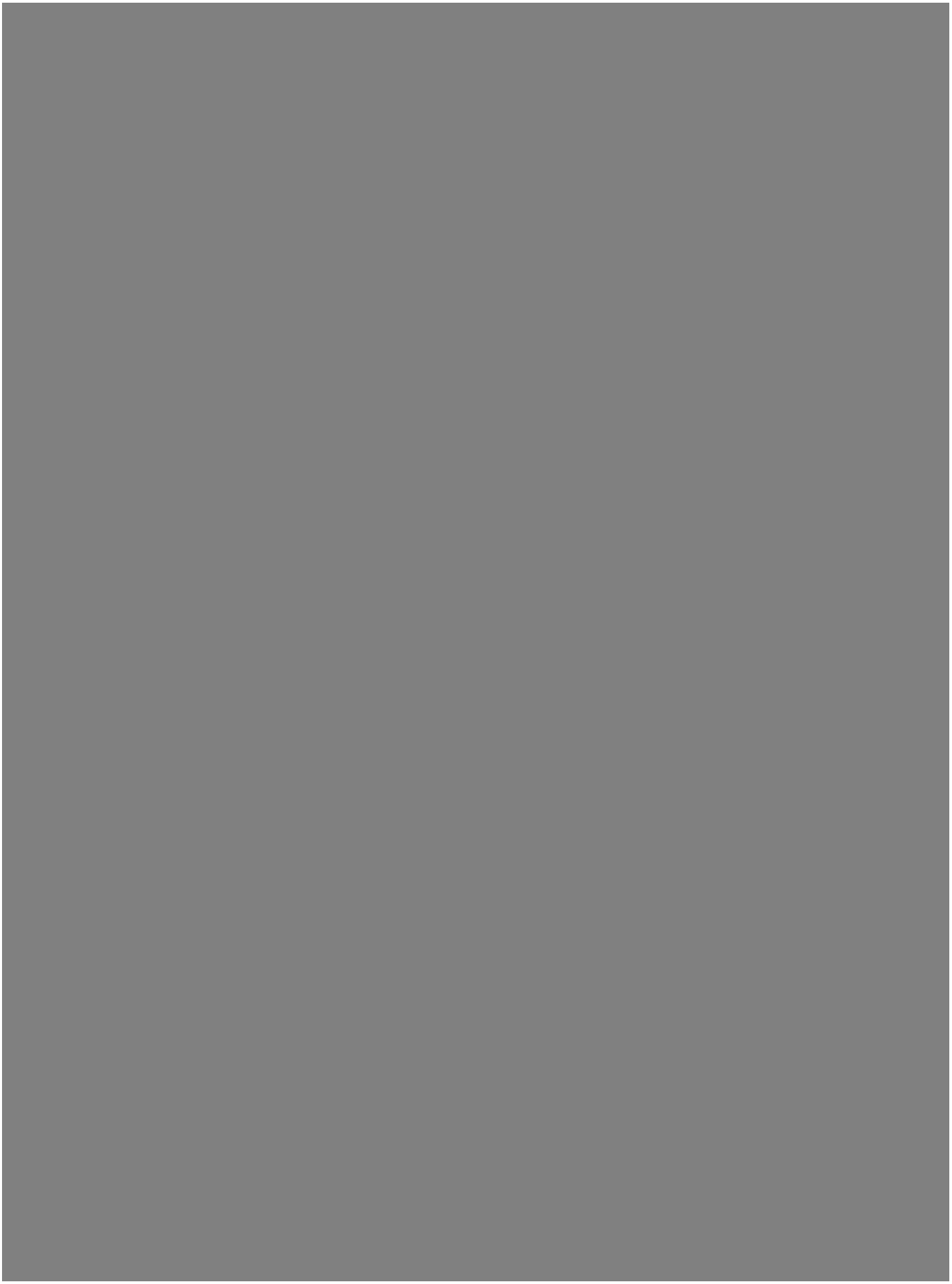


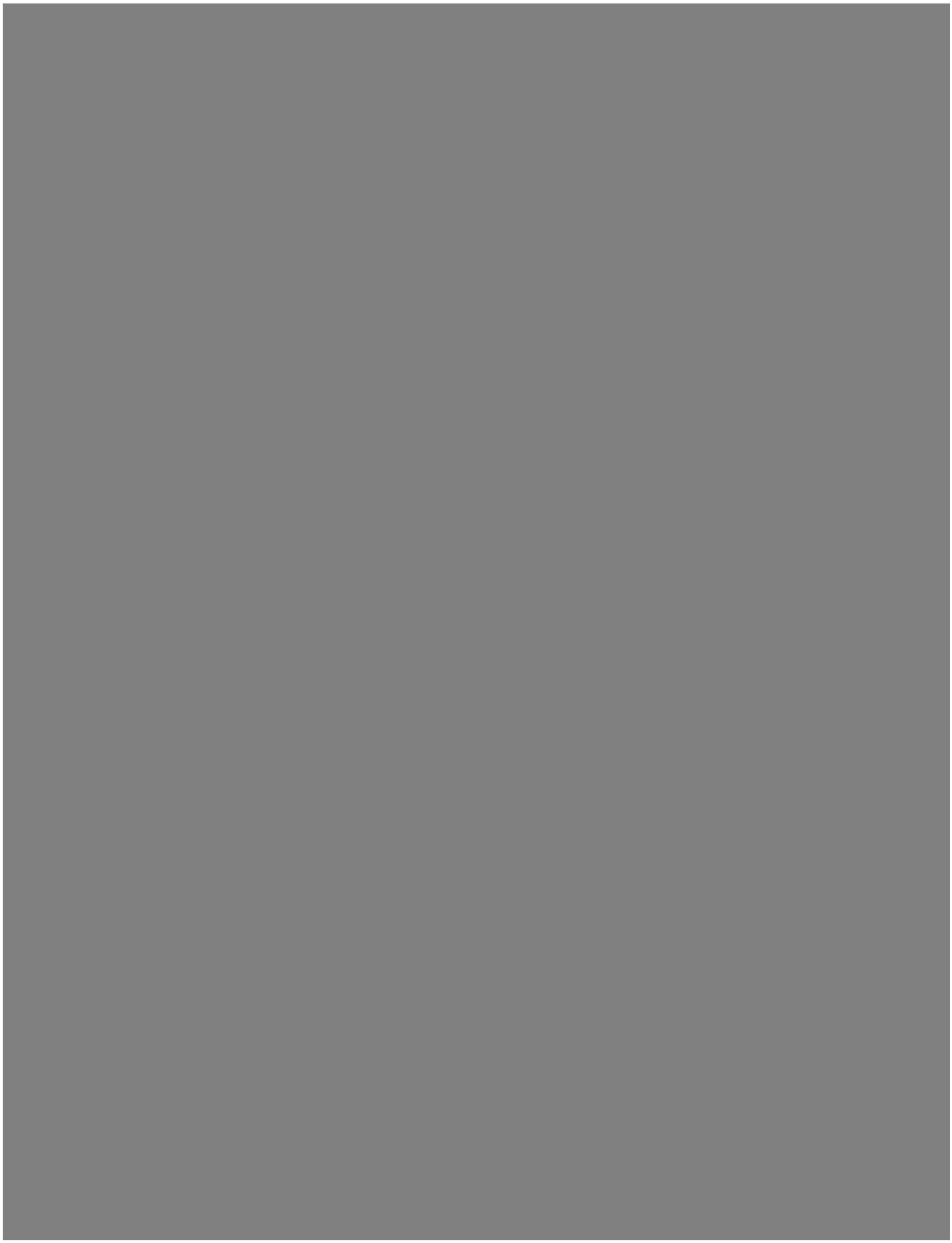












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