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Democratization of Finance in China: the Role of Internet Finance in China's Economic Transformation

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Democratization of Finance in China: the Role of Internet Finance in China's Economic Transformation

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Lastly, best wishes to my future self: to be free and unafraid.

Table of Contents

Abstract

Democratization of finance in China is both effective and risky. This is a comprehensive study of the benefits and risks associated with China's Inclusive Finance Policy and the rapid development of Chinese internet financial industry. Through a retrospective of the emergence of finance, this study will introduce the concept of democratization of finance and evaluate its development in China. The author further examines the approach of Inclusive Finance and Internet-based financial industry and their contributions to the overall financial industry. In addition, this study will also explore the role of Internet-based financial industry to Chinese economy in the context of China's economic transformation.

Chapter 1: Introduction to Democratization of Finance

1.1 Financial Democratization—Robert J. Shiller's idea

To most people finance is an abstract subject that only draws mass attention during a crisis. The rise of finance seems like that it only became important to people's lives in the recent centuries. However, finance has indeed been an indispensable element of civilization, in terms of birth of culture, rise of empires and hierarchy. Traces of the subject can be found in the oldest civilizations of mankind. After 4,000 B.C., the Sumerian people built the city of Uruk that was based on herding and agriculture, complemented with fishing and hunting (Goetzmann, 2016). The greatness of Uruk was that it had a highly developed economic system that relied on a central distribution center. The economy of the city was developed so well that it had a large variety of goods and materials where even the labor was specialized. Within such an economy, the primordial essense of the most primary financial instrument was developed: debt. Triggered by the profits——interest, the Sumerian people mastered the practice of lending; and the new industry based on lending was passed on as a legacy to the famous Babylonian dynasty. During the Babylon era, sophisticated mathematics was developed that people were able to calculate compound interests (Goetzmann, 2016). Moreover, among the unearthed writings could be found the ancient version of mortgages, loan contracts, even partnership agreements, which are strong evidences of the highly developed financial activities happened back then.

It wasn't until relatively modern times that we discovered more surprising facts of this period of ancient finance. In the 1920s, a Mesopotamian city of Ur was excavated, and an

“ancient Wall Street” was spotted in the middle-upper class neighborhood near the center of the city. Evidenced by a variety of tablets unearthed that recorded the activities that “financiers of Ur” were involved with, “lenders played an important role in the ancient economy of Ur” because they “supplied the silver money demanded by the temple” (Goetzmann, 2016). It is important to note the importance and multi-roles that temple played in the Sumerian society— “the entire machinery of the Sumerian economy ostensibly existed to support the temples, which were considered the households of the gods” (Graeber, 2011). The high status of temple in the social hierarchy is also an evidence of the uneven distribution of power and wealth. Due to the absolute authority of silver money demanded by the temple, those “financiers” from the middle-upper class created liquidity for the economy by lending out petty money or emergency loans, avoided unnecessary storage and rot of goods. Obviously, they were in control of the economic lifeblood of their civilization, which is why the Ur period has been considered as “an early hothouse of capitalistic enterprise” (Goetzmann, 2016). Moreover, the importance of finance also caught the sovereign’s attention. The government published legal codes that protected property rights, which favored the financiers’ interests, and even made the property rights superior to human rights. With the authority of law, many financial instruments were widely used as tools of both enterprise and sovereign power to achieve their goals.

From its beginning, finance has been a powerful industry among the elites; it was supportive to productive enterprise and sovereign ruling. It was also harsh to ordinary people, as evidenced by the exploitations put upon the working class, including the miring them in

debts, solidifying the social hierarchies, and extracting taxes and rents from citizenry (Goetzmann, 2016).

Followed the similar route, banking was also created for the middle or upper classes, and its development was closely associated with capitalism. The emergence of banking in its current form comes from ancient Athens since “Greeks invented banking, coinage, and commercial courts” (Goetzmann, 2016, p.73). By the fifth century B.C., Greeks caught up to the eastern civilizations in terms of “financial sophistication”. The Greeks were not limited to the business of “petty money lending” or even major family-based financiers; rather they built bank-like institutions that accepted “deposits of money for safekeeping”, which was popular among merchants. Being similar to these ancient financial techniques and banking, the emergence of banking in relatively modern Europe was also associated with debts and money managing. The concept of bank in Europe was developed from money changing industry and goldsmiths. It is worthy to note that these financial industries were also closely related to the middle-upper class. In fact, the concept of banking, from its initial emergence until pretty late in the history, can even be considered as a privilege for the upper class, since the top percentile in almost all societies “exert influence on both the social landscape and the political and economic order” (Picketty, 2014, p.182). The inequality embedded in the social hierarchies is reflected clearly in the development of financial industry. Based on the historical records, the most ancient banking business in the world was carried out by “the drapers of Barcelona, who were probably the wealthiest class of merchants in the city”, and the very first public bank was established by “the magistrates, and the city funds were

responsible for the money placed in the bank" (Gilbart, 1837). This bank, even though it was from ancient era, operated pretty maturely like a modern bank; it was in charge of exchanging money, receiving deposits and discounting bills of exchange (Gilbart, 1837). In 1694, the very first joint-stock bank, the Bank of England, was established in the United Kingdom. Being the first bank that was not controlled by the government, this bank operated like a publicly-traded company nowadays, splitting its liabilities and profits among its shareholders. The emergence of this bank is a great reflection of the highly advanced financial system that Europe had centuries ago. This bank laid out a basic framework for the development of the modern financial industry (Wang, 2015).

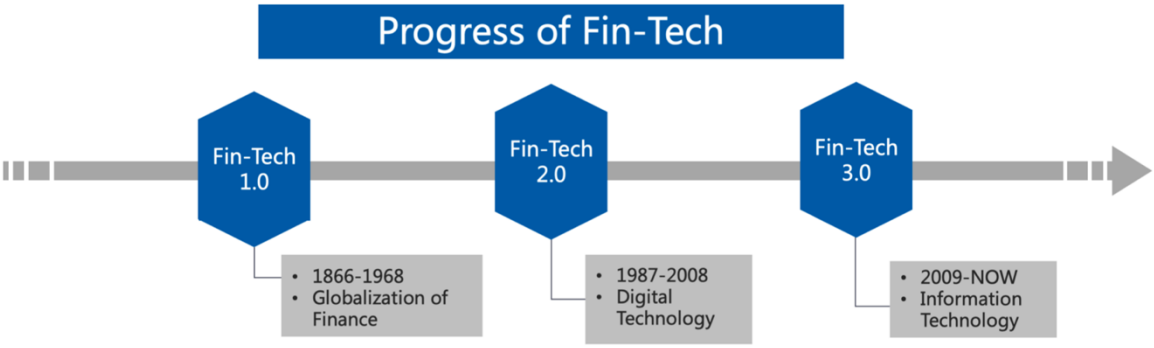
Since then, the banking and financial industries have developed rapidly in various capitalist countries; and they have greatly promoted the accumulation of capital and concentration of production. By the 17th century, modern banking emerged in Europe along with several new practices, including reserve banking business and bank note issuance. This relates to the interesting story of goldsmith. Back then, the wealthy British merchants would store their gold in goldsmiths in London; the goldsmiths owned private vaults and they charged for this kind of services. As an exchange of deposits for gold, a receipt would be issued by the goldsmith to the clients, proving the quantity and quality of the gold or other precious metal. Later on, the goldsmiths started to lend out money on behalf of the depositor, which marked the development of modern banking (Investment & Income.com, 2011). The goldsmiths' practices created a new type of "money"— the debts of the goldsmiths which could be considered as a commodity regulated by the sovereign. Interestingly, this is

consistent with the heterodox understanding of money, which basically defines money as a type of debt—"IOU" (Wray, 2009). In fact, British banks played a major role in the evolution of modern banking. In 1695, the Bank of England issued its banknotes permanently for the first time in the history; in the 17th century, British people also invented cheques for banks to settle the payments; and in the 18th century, banks started to provide more services, including clearing facilities, security investments, cheques and overdraft protection (Davies, 2002). But up until this point, finance and banking were still mostly exclusive to the wealthy merchants or aristocrats. However, the democratization of finance gradually emerged later, aroused a trend towards involvement of broad public. In the early 19th century, there was the "savings bank movement" in Great Britain, followed by a similar one in the United States (Shiller, 2012). These historical movements democratized banking to a better extent and endowed low-income people with the incentives and more importantly the opportunities to experience financial services, empowering the general households to access to appropriate financial services (Erturk, Ismail, et al, 2007). By the 20th century, the basic financial activities were pretty common among the ordinary people attributed to the democratization movements.

Speaking of the democratization of finance, an important contributor to this concept is Robert James Shiller. Born March 29, 1946, Shiller is a well-known American Economist, scholar and best-selling author. Besides from those mentioned titles, he is also a Sterling Professor of Economics at Yale University; and he has been a research associate of the National Bureau of Economic Research (NBER) since 1980, etc. (Yale, 2019). Shiller also jointly received the 2013 Nobel Memorial Prize in Economic Sciences for his empirical

analysis of asset prices (The Nobel Prize, 2013). Shiller has been focusing on the topic of democratization of finance for years, and he thinks it is the inevitable trend that the whole modern financial world is going towards. In his book *Finance and the Good Society*, Shiller states that "the democratization of banking is a slow process, occurring over centuries, benefiting from technological progress of various sorts, and still far from complete, even in advanced countries" (Shiller, 2012). Ever since the initial democratization happened in the 19th century, the finance and banking industries have evolved so much because of numerous innovations, and they have benefited the whole society in a revolutionary manner. However, it's worthy to note the amount of innovations experienced an explosive growth in the past two decades, from late 1990s till today. In Shiller's words, "over the past decades finance has been increasingly democratizing feed on the rapid development of technology" (Shiller, 2012). During this rapid development period of technology-driven finance, a new term became popular among the public: "Fin-Tech", which describes the new technology that aims to "improve and automate the delivery and use of financial services" (Kagan, 2019). A typical example of an archetype of Fin-Tech innovation is the ATM machine, which not only helped with the democratization of finance but also brought unprecedented convenience to people's daily life. Interestingly, from the perspective of industry evolution, there are different opinions in defining development stages (Liao, 2017). On one hand, some scholars divide the progress based on the historical revolutions that technology has caused to the industry of finance. The progress of "Fin-Tech" is divided into three sections, as visualized in Figure 1.

Figure 1: Timeline for Fin-Tech progress



Source: "The Evolution of Fintech: A New Post-Crisis Paradigm?"

1866-1968 is the era of the Fin-Tech 1.0, featured the globalization of finance, which benefited from telegraph and telephone technology. 1987-2008 is the Fin-Tech 2.0. During this period, the digital technologies were widely used in financial institutions, resulted in significant improvements in efficiency. From 2009 till today, we have been experienced the Fin-Tech 3.0, which is dominated by information technology and Internet financial innovations (Arner & Barberis, 2015). On the other hand, many put the emphasis on how the Fin-Tech have affected the market and people's life in the last two decades. According to Ron Suber, the President Emeritus of Proser Marketplace, there are four phases of Fin-Tech. The first phase is called EAU: Education, Awareness and Understanding. Suber regards this period as a time of establishing Fin-Tech as a "recognizable concept" among the general public, and the goal of this period is to legalize the online financial services and to eliminate the "fear of unknown" (Suber, 2016) The second phase is when big financial institutions start to pay attention to the online market; their moves will further solidify people's confidence about this emerging industry. The third phase is when the Internet financial industry has matured to an extent, and it starts to expand by cooperating with financial institutions like

banks; this is also a period when the regulations start to join in. Last but not the least, the forth phase is about the optimistic future, which will feature “rapid mergers, acquisitions, and full adoption into the main stream” (Suber, 2016). Suber’s opinion is a great interpretation of how Fin-Tech is closely related to the democratization, and it also offers insightful predictions to the future of both this promising industry as well as the democratization of finance.

As discussed above, among all the technological innovations, the most important one is the Internet, which Shiller regards as “a great medium for democratizing finance”. In the last two decades, accompanying the rapid evolution of the cyber technology, Internet finance has become a hot industry global-wide, creating a great variety of online financial services and new financial products. Based on advanced technology, this emerging industry that combines applications of big data, cloud computing, social networking and traditional finance industry pushes the democratization of finance to a brand-new level by creating revolutionary approaches for people to manage their financial issues. Moreover, the Internet democratized finance in a relatively equal way compared to the traditional financial industry. Internet finance abandons some conventional procedures that exists in the traditional finance industry, at the same time corrects the information asymmetry carried by those procedures (Li, 2013). So, to a certain extent, Internet finance eliminates the drawbacks of the traditional finance industry.

At the 10th Beijing International Finance Expo, the "Internet Era Wealth Management Forum" was held, and the weaknesses of the traditional finance were throughly discussed on

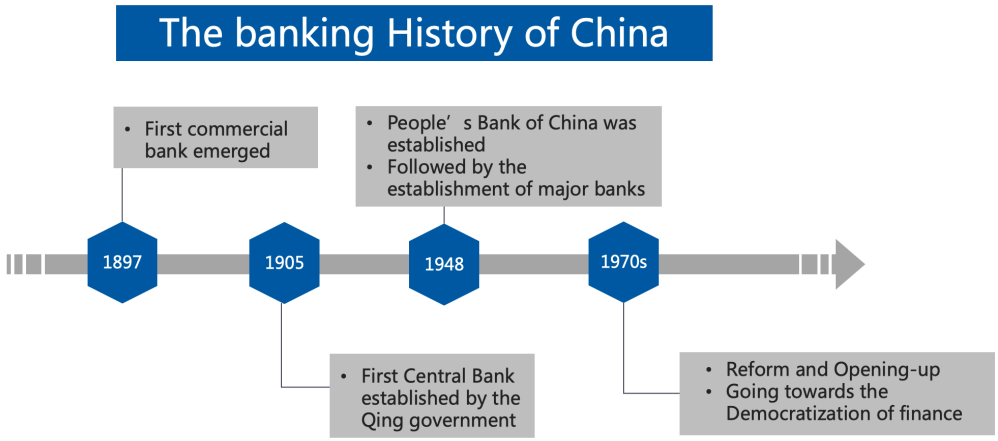
the forum. Lizong, Ji, the general manager of Beijing Yuanze Equity Investment Fund Management Co., Ltd, claimed that traditional financial industry was centered on standardized financial products, which were usually characterized by the tag of expensive, inconvenient, and time-consuming; and there was a contradiction between the services provided and nowadays individualized needs (Ji, 2014). Moreover, traditional financial services are also associated with moral hazards and adverse selections because of the information asymmetries within the industry. Information asymmetry, also known as information failure, occurs when one party to a transaction has a greater material knowledge than the other party (Kagan, 2018); and it usually refers to the situation when the seller has better knowledge than the buyer. The asymmetrical circumstances can cause negative consequences of adverse selection and moral hazards: adverse selection, like information asymmetry, defines a situation where the sellers possess information that sellers don't have, and buyers faces the risk of purchasing "lemons" (Akerlof, 1970); on the other hand, moral hazard represents the risk that a party provides misleading information or has an incentive to undertake unusual risks to make profit (Pauly, 1968). The concept of asymmetric information and the profit-driven nature of financial industry can lead some institutions to depart from the original intention, and to break the rules in order to make more profit. The unscrupulous practices of many shadow banks before the 2008 financial crisis are a great evidence, and they eventually lead to the great collapse of the whole industry. In contrast, by applying techniques like big data and cloud computing, Internet finance significantly reduces the asymmetry of market information, and allows everyone to conduct financial activities

without going through unnecessary intermediaries. Therefore, the financial industry can take the Internet technology to a good use to eliminate the problems caused by information asymmetry; and the evolved financial industry should take on more social responsibilities while pursuing its own interests and form a virtuous circle for the whole economy. All in all, this evolved financial industry further contribute to the democratization of finance…and its dangers.

1.2 Democratization of finance in China—Inclusive Finance & Internet innovations

Finance also has thousands of years of history in Chinese culture. As early as the Shang dynasty (B.C. 1600—B.C. 1046), China had already created a fairly independent currency system (Goezmann, 2016). The first institutions that dealt with financial businesses emerged in the Tang Dynasty in the early 7th century. Though the scope of services provided were relatively simple, these institutions were already independent on themselves. Later on, the "money houses" appeared in the middle of the Ming Dynasty and the "money exchange store" from the Qing Dynasty ran in the form of feudal organization, with weak financial strength and small variety of services offered (Yao, 2007). Since these ancient style of banking institutions could only provide the very basic services, they are quite different from modern banking.

Figure 2: The Timeline of Chinese Banking History



Source: "中国金融史 (History of China Finance)"

As shown in Figure 2 above, in 1897, the first Chinese commercial bank was established; a few years later, the earliest "central bank"/bank of the country was established by the Qing government in 1905. After the 1911 Revolution, China's banking industry has further

developed. however, due to the underdevelopment of China's capitalism-oriented commodity economy and the imperialist aggression, the banking industry developed in an abnormal manner. During the later period of Nationalist ruling, the Central Bank, the Bank of China, the Farmers' bank of China and all other important bureaucratic-capitalism systems monopolized the financial industry and controlled the lifeline of the Chinese economy (Yao, 2007). In 1948, the People's Bank of China, which is the central bank of China now, was established. Followed the newly constructed central bank, the original bureaucratic-capitalism banks were reorganized into their new versions; this list of reformed banks include the Bank of China, the Bank of Communications and Agricultural Cooperative Bank. Later on, The China Investment Bank, the Agricultural Bank of China as well as the Industrial and Commercial Bank of China were established (Yao, 2007). These financial institutions that were reformed or established after 1949 marked the emergence of the modern banking industry in China. Since the Reform and Opening-up from the late 1970s, China's financial industry has kept the pace with the global trend. Certainly, the financial industry of China is going towards the direction of democratization like its peers; and Chinese government refers this move as the "Inclusive Finance".

The concept of Inclusive financial sectors/financial inclusion was firstly brought up by the United Nations in 2005, defining a financial system that was "designed to create enabling environments for a wide range of retail financial service providers and to address gaps in the policy, legal, and regulatory constraints that prevent a financial sector from being inclusive" (UNCDF, 2018). Since this idea was consistent with China's broad strategy of "inclusive

development", it was introduced into China by a scholar named Jinpu Jiao on the Asia-Pacific Microcredit Forum in 2006, and spread rapidly (Wang, 2015). According to the *Research on the Development of China's Inclusive Finance and Its Countermeasures,* China's interpretation of Inclusive Finance has four main focus: inclusiveness of all societal groups; equality across all services; diversity of the financial services; sustainability of the Inclusive Finance. It was regarded as an important strategy in China's economic plan. In 2013, premier Keqiang Li set the development of Inclusive Finance as a major goal of the year. Before exploring the influence of Inclusive Finance, it's necessary to discuss the role that China's sectoral financial system plays in terms of democratization of finance. China's financial system is distinctly segmented, and the different sectors are subject to different level of regulatory controls. The financial institutions in the banking sector "are heavily regulated with regards to which market they can access, who they can trade with and who they can finance" (Lu, Bessler, et al, 2018). On the other hand, the non-banking sector, which is the private section of China's financial system, is much freer and it allows more possibilities. In such a segmented system, there is a limit for those financial institutions in the banking sector in terms of what they can do to promote the democratization of finance; but the environment of the private section is a fertile soil for financial innovations to emerge. Therefore, most of the financial innovations that aims to promote the democratization of finance are the accomplishments of private companies. Among all of those innovations, the Internet finance is undoubtedly one of the most contributing measures of democratizing finance. In addition

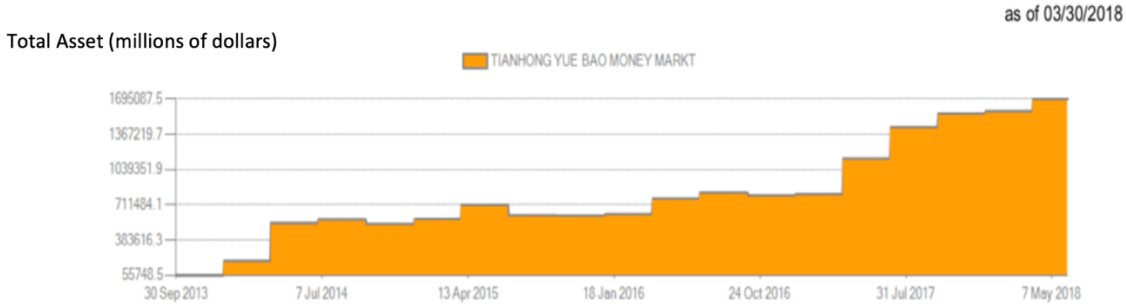
to the existing prosperity, the government's focus on Inclusive Finance certainly added some catalyst to the industry of Internet finance.

The industry of Internet finance in China has developed so fast that it has drawn massive attention across cities and villages. Aside from the "new online version" of traditional financial institutions, the stars of this industry are those new innovations, including peer-to-peer lending, third-party payment and Internet virtual currency, etc. Amongst the wave of Internet finance, there are several legendary companies playing leading roles. Alibaba Group is a great representative of them. Being a multinational conglomerate that specializes in e-commerce, retail, Internet and technology, Alibaba has been a pioneer in the Fin-Tech industry. Alibaba launched Alipay, which is a third-party online payment platform, through a subsidiary company Ant Financial in 2004, and Alipay quickly occupied the dominant market position in the whole Chinese market and expanded its businesses. In 2013, Alipay launched a whole new online financial platform called "Yu'ebao (余额宝)".

Yu'ebao is a unique financial innovation to China that pushes the democratization of finance in China to an extreme level. It is a cash management platform that allows users to earn appreciation in their Alipay account balance. Moreover, it is also connected to the main online payment function of Alipay, so it allows users to withdraw their money from Yu'ebao to spend at any time they want. After its initial launch, Yu'ebao has attracted a massive user group thanks to its convenience, high return rate and low risk levels as it was promoted. According to an article published on Forbes, Yu'bao was hailed as the "fund for the masses", because it removes the entry barriers that hindered small individual investors from making

higher returns than traditional bank deposits (Xie, 2017). This platform created a whole new way for people to finance their asset. By using Yu'ebao, people can invest as little as ￥0.1 whenever and where-ever, which is unimaginable for conventional banks or funds. From 2013 to present, Yuebao has not only raised awareness of asset management among masses, but also helped Tian Hong Yu'ebao Monetary Fund to become the biggest monetary fund in China. As shown in Figure 3 below, due to the Yu'ebao effect, the asset management scale of this monetary fund has boosted over the past years.

Figure 3: The Asset Scale of Yu'ebao Monetary Fund



Source: Bloomberg

By 2017, Yu'ebao Monetary Fund has become the largest monetary fund in the world with the scale of $165.6 billion, surpassed the $150 billion scale of the money market fund managed by JP Morgan Chase (Lucas, 2017). Moreover, the asset management scale of this whole platform has reached ¥1.8 trillion (about $268 billion) in 2018. For the first time in history, the total size of Yu'ebao has surpassed the overall amount of individual demand deposits of the "Four Big Banks" in China, which had a balance of ¥179.86 billion (about $26 billion) in 2017. To understand this jaw-dropping scale better, it's important to realize that the total GDP of the bottom 20% of nations from the 2017 ranking is less than size of money managed by Yu'ebao (Sina, 2018). In general, Yu'ebao has grown so big that it takes

a huge portion of the whole Chinese economy; and it is considerably a miracle of the democratization of finance.

All in all, the emergence of finance and banking in China was also associated with the inequality in social hierarchy, since those financial services were somehow exclusive to the middle and upper class. Fortunately, the reform and opening-up brought new energy to modern China, and it revolutionized these exclusive industries: by integrating the factor of Internet technology, China has achieved a significant progress in democratizing financial services and conducting Inclusive Finance. However, advancement is a double-edged sword; the considerable achievements that China has in the Fin-Tech industry also carries huge potential risks. Nowadays, the evaluation and management of such risks is an essential key to the well-being of Chinese economy.

Chapter 2: Benefits and risks of Internet financial innovations in China

2.1 The advantages of financial democratization through Internet in China — Alibaba Empire: Yu'ebao & Alipay as the example

In recent years, China has been an important and active participant in the inclusive financial developments. By conducting the Inclusive Finance policy, China has made significant progress in democratizing financial services to all the levels of the society. The Chinese government applied diverse methods to develop the Inclusive Finance. For instance, the People's bank of China, which is the central bank of China, has established thousands of new banking branches as a pilot projects in the rural areas since 2010 to help farmers to conduct regular financial/banking services; in 2011, the People's Bank of China issued the "Notice on Promoting Bank Cards to help with Farmer's withdrawals", requesting the promotion of the pilot project, and setting a clear goal of helping all the rural areas within China to be able to provide the basic withdrawals and savings services (The People's Bank of China, 2011); by the end of 2017, the overall amount of convenient financial branches in the rural areas has achieved 914, 000 (Sohu, 2018). Moreover, in order to conduct the practice of Inclusive Finance thoroughly, a large amount of the commercial banks in China have set up new departments solely for developing the Inclusive Finance (Sohu, 2018). These efforts made by the traditional financial institutions are effective ways of promoting basic financial services in rural areas; However, it's necessary to consider that even though these branches eliminate the physical barrier for peasants to access to basic financial services, the other barriers of conducting Inclusive Finance still exist. The emergence of those newly built

branches results in increasing amount of rural financial institutions, revolutionizing financial vehicles that peasants could access to, and optimizing the relative laws to regulate financial services in the rural areas (Cai, 2016). However, this kind of "exogenous assistance" provided by the government cannot solve the real difficulties of rural financing; and many exogenous financial institutions deviated from the original intention of the government setting up such institutions and shifted their focus from regular peasants to rich land lords and even small/middle sized companies in order to make more profits (Sun, 2014). Furthermore, the large amount of exogenous financial institutions also hinders the development of local financial institutions in rural areas, which really provides the basic services in need to peasants. In essence, in spite of the large number of branches being installed in rural areas, it is fair to claim that the Inclusive Finance conducted through the traditional financial industry in rural areas of China is quite superficial.

In addition to mixed impacts caused from the contributions of the traditional financial institutions, the efforts made by the industry of Internet finance should not be overlooked in promoting Inclusive Finance. As mentioned before, the Fin-Tech industry plays a vital role in the democratization of finance. By applying the digital technology, the Fin-Tech industry kicked off a new conceptual method of developing Inclusive Finance, and it has aroused widespread attention from not only every level of the Chinese society but also some well-known international financial institutions around the world, including the World Bank (Huang, 2016). Therefore, it is fair to claim that information technology utilized in

democratization of finance has become the focus of the development of Inclusive Finance in China.

Beside the fact that Fin-Tech industry is a great combination of the technology progress and the concept of democratization, it is also a unique invention that meets the need of the times and makes breakthroughs in the traditional ways of finance to promote further developments and upgrades of the whole financial industry. The Fin-Tech industry has obvious advantages compared to the traditional practice of Inclusive Finance; and the positive impacts brought by it benefits not only the economy but also people's daily life. As an illustration, for most of Chinese people who live cities and relatively developed rural areas online payments count for more than half of their daily expenses, including grocery shopping, paying bills, etc. For the young generation that is used to these Fin-Tech innovations, they basically buy anything they need through online payments like Alipay and they barely use cash or physical cards. The Fin-Tech industry abandons the limitations and exclusiveness of the traditional financial industry, meets the needs of more users, expands the scope of the financial industry, lowers the threshold of the financial industry, and provides new opportunities and directions for the development of the financial industry (Zhong, 2016). These advantages are specifically embodied in the following aspects: First of all, the transaction cost of services provided by the online financial platforms are significantly lower than that of the traditional financial industry. The "costs" mean more than the superficial price tag, but also represents the time consumed and transportation costs. Relying on the virtual platforms, the Fin-Tech industry abandons the clichés of the traditional

finance—complexity and inconvenience involved in practices. In addition to being the solution of information asymmetry, the Fin-Tech innovations also achieves the filtration, selection, and simplification of information, making the whole transaction process easier without consuming unnecessary costs. Without the restrictions of time and places, the financial services provided online are more systemically, modernized with lower costs (Zhong, 2016). Yu'ebao is a great representative of the Fin-Tech innovations to show this trait. The absolute zero cost of its service and the automatic procedures provides the customer the smooth services that can be completed in a few seconds. This trait is even more significant for platforms that are associated with financial loans. Usually, the credit assessment and lending are automatically completed based on big data; on many platforms, the borrower can get the money in about three minutes with the cost of less than 1 Yuan, which is thousands time less than the average cost of 2,000 Yuan of loan in the traditional financial industry (Xie, 2017). Moreover, because of the simplified trading process that relies on digital technology, the efficiency of the online financial services is much higher than the traditional financial industry. It's fair to claim that the online financial serving system are somehow "man-less"—the whole Internet and data based serving system can work on its own without much human intervention (Jia, 2018). Because of this reason, the standardized practices can serve thousands of customers at the same time, resolving the problem of customer waiting. In Yu'ebao's case, the number of users has already exceeded 300 million (Tianhong, 2019). With a powerful server, Yu'ebao is able to process the daily businesses of millions of users, which is impossible in the traditional finance. Also, the online financial

firms usually provide a wide range of services. Breaking down the thresholds of traditional financial services, the Fin-Tech companies satisfy a greater range of customers with comprehensive services. For instance, as mentioned above, Yu'ebao is just an affiliated branch of a greater platform——Alipay; the services provided by the Alipay platform includes transactions between users, payment for mobile commerce, payment for credit card bills, payment for utilities, Yu'ebao (cash management), local living suggestions that include coupons and promotions, and charity donations, etc. Having the great variety of services and the efficient style of operation, platforms like Any Financial achieve "win-win" situations for themselves and their users, actualize the concept of democratization of finance by making finance an integrated part of people's life. Last but not the least, the online financial industry contributes to the management of risks. Due to the restriction of information collection and information processing methods, traditional financial institutions still have many shortcomings in risk monitoring and early warning. Because of this drawback, the traditional financial institutions have also been working on introducing big data and Internet technology (Xie, 2017). On this aspect, online platforms are much advanced. Taking the process of credit assessment as an example, the Alipay platform can obtain the historical credit record of the users in a few seconds using the big data technology. By integrating and analyzing the fragmented information of the users, Alipay can easily calculate the credit scores. However, in the traditional financial institutions, the credit officers need to collect information by conducting in-site investigations, and they need to review various materials to come up with the evaluation. It's important to note that the accuracy of this evaluation may also be

questionable due to the personal opinions of the credit officers. On a broader scale, the Internet financial industry can reduce all kinds of risks that are associated with financial activities by applying the digital technology. It can track, integrate, and analyze all the samples from the database to capture the precursors of risk disclosure (Xie, 2017). Also, according to the different level of credibility of users, the Internet financial institutions are able to provide different products targeting different groups, which lowers the risks while increasing the revenue (Jia, 2018). Last but not the least, the problem of adverse selection is also hard to be recognized by customer in the traditional financial services, since the transaction process is time-consuming and non-transparent. Due to the complicated procedures in the traditional financial industry that is unknown to ordinary customer, the financial agents may also undertake moral hazard to chase more profits.

With all of the competitive advantages discussed above, the Internet financial industry lowers the barrier of finance for the whole society by resolving many difficulties and problems encountered by the traditional financial industry, including not enough branches, low revenue, high cost, narrow demographics of customers, and high potential risks, to name a few; and these Fin-Tech innovations should be considered as the best way of conducting Inclusive Finance in nowadays.

However, the dangers of automation and risk that accompanies euphoria of growth and technological advancements is something that history has seen before, and they usually bring disastrous consequences.

2.2 The drawbacks of Internet-based financial activities--P2P case study & Hyman Minsky's instability theory

The prosperous development of Internet finance industry is not perfect, because it is accompanied by underlying risks. Even though the Internet financial innovations are being used as the dominant method for Inclusive Finance in China, it's necessary to understand that advanced technology can also contribute to the progress of fraud other than positive developments; and the cyber-security problems as well as non-comprehensive regulation issues associated with the rapidly developing Internet financial industry should also be concerns. In general, against the backdrop of a complex and fast-changing economic and financial environment, China's Internet finance development faces many risks, including regulatory risks, credit risks, and so on. The case of peer-to-peer (P2P) online borrowing platforms is a great illustration of these negative aspects.

The summer of 2018 was a nightmare for millions of Chinese individuals who invested their money on the P2P online loan platforms. From June to July, more than two hundred of Chinese P2P platforms crashed. Ironically, this was not the first time that Chinese P2P industry experiences a wide-range crashes. According to the Secretary-General of the national committee of cyber financial security of China, there have been more than 4800 problematic P2P platforms detected since June 2015. The committee also stated that the P2P industry of China is a complicated mix of platforms that carry quite different levels of credibility. Among all of these platforms, there are a number of the so-called "online loan

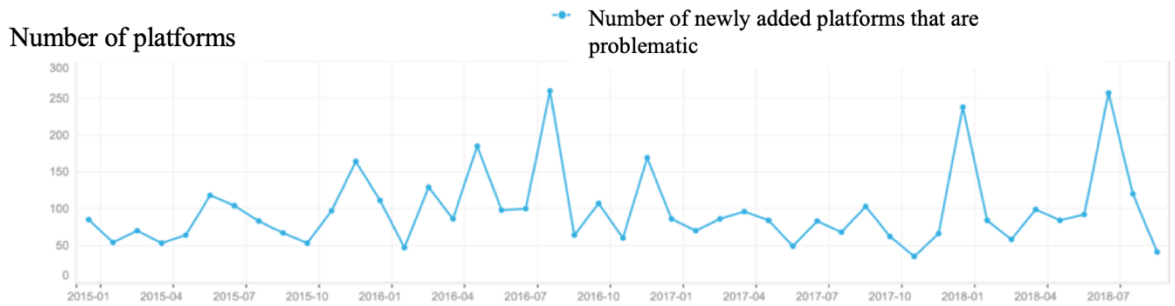
financial companies" are just trying to make profit out of financial sleights of hand. The chaos in this industry and the behind realities are worthy of investigation.

P2P (peer-to-peer) is an online financial loan method that allows individuals to borrow and lend out money through a third-party platform, which connects both sides and manage the flow of the money. It has entered China many years ago, but this industry didn't boom until a government policy in 2014, which highly encouraged people to start their own businesses. Following publication of the law, many people flowed into the trendy "online financial service" industry to set up their own companies, including many P2P online loan platforms. According to an analysis essay published on a Chinese online loan forum (www.wdzj.com), there was an important concept being ignored—the reality of finance has determined that the entrepreneur is risking the wealth of others to make profit. If succeed, the entrepreneur benefits the most; but if failed, the loss will be undertaken by the other participants. Hence, new creation in the financial industry carry a negative externality. Also, the online sector of financial industry in China was not mature at that time with only incomplete regulations. In short, this industry was not suitable for massive amount of innovations and startups. This concept has buried a fuse for later crashes.

After the 2014 policy, the P2P industry has vastly developed for 4 years, along with many problems. Based on the data from the largest online database of P2P, the total number of P2P crashes in 2015 was 867, and the accumulative number of collapses has already reached 4,743. Figure 4 below is shown on the same website—there are always about 50 or

more platforms being reported as problematic/closed every quarter since the beginning of 2015.

Figure 4: Historical Record of P2P collapses in China



Source: p2peye.com (the largest P2P database in China)

As shown in the Figure 4, the new number of problematic platforms has peaked for many times. Its latest peak, however, which happened during summer 2018, has finally caused a significant negative public effect and raised a lot of awareness from society. This round of crashes firstly appeared in Nanjing. Due to the promotion of several real estate projects in Nanjing, which requires clients putting a certain amount of money as bank savings in order to participate in the “real estate lottery”, many P2P users withdrew their money from platforms and put into banks (Yi, 2010). All of a sudden, several platforms could not overcome the liquidity problem, so the crashes began. Many people, no matter if they have invested in these P2P platforms or not, started to be curious about the real reasons that are behind these unstoppable collapses.

Even though these P2P platforms crashed down in many different ways, including platform missing, not allowing withdraws, platform defrauding, operation suspending, police intervention, principle escaping, controversial platforms, platform liquidating, and platform

deferring, these platforms do have some similar features. According to an analysis article published on the largest online database for Chinese P2P platforms, 80% of the problematic platforms are created in 2015 and later, which means that their operation time are relatively short; Also, 83% of these problematic platforms didn't complete their bank deposition; Moreover, 70% of the platforms provided higher returns than bank savings. Behind these shared features are the main causes of these crashes: the illegal operations and regulation issues.

There are two typical illegal operations in P2P industry. In the original definition of P2P, the third party only works as an agency that connects the lender and the borrower together, without any capital precipitation. However, China P2P platforms does not work in the same way. As the article from Phoenix Media claims, 95% of current China P2P platforms have their own fund-pools, which differentiate these platforms from the true P2P business. This illegal operation of fund-pool is created because lots of Chinese investors are not very mature, which means that they refuse to take the risk of defaults. So, the platforms are in charge of making up the payment if the borrower defaults, that's why they need fund-pools to maintain their liquidity, which means to use "new money" to payback "old debts". Another type of illegal operation is that some platforms are created for bad initiatives other than P2P business. Some are set up in order to raise funds for the other business owned by the owner of platform. Some are just created in order to earn the "quick money" through fake investment projects. Once the money is obtained, and principle/manager then run away.

These so-called P2P platforms are not doing the original P2P business in a proper manner, and that fact has contributed to their collapses.

As mentioned above, incomplete regulations have always been a weakness of China's online financial industry and the regulation issues also play an important role in this round of crashes. For the special case of P2P businesses, the regulations are not only incomplete, but also controversial. The most important regulation issue in this round of P2P collapses is related to a government announcement from end of 2017. In this announcement, government claimed that all the P2P platforms are required to go through the rectification and official registration by June 2018, or they need to be shut down (Huang, 2016). Lots of P2P platforms actually treated this very seriously because they wanted to turn themselves into formal companies that are nationally certified. So many of them adjusted their fund-pool/operation methods and suspended their new business according to the rectification requirement. However, suddenly the government claimed that registration will be delayed, but all of these platforms' fund-pools are under monitoring so that they cannot take the "new money" to pay back the "old debt". So, the fund chain was broken and caused lots of P2P crashes. Some people may argue that these crashes are due to government's trick, but it's actually obvious that government was just trying to squeeze out the bubble from the P2P industry.

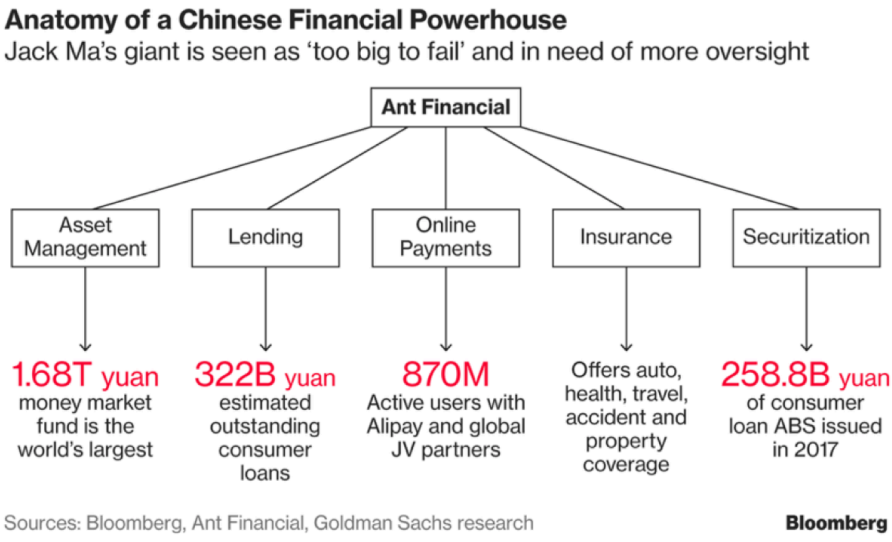
In addition to this specific government trick, the general regulations in this P2P industry are quite weak. First of all, there are almost no supervision about the people who work in this industry. In the traditional financial industry, anyone who runs an individual financial institution need to pass certain qualification exams or certification process. But in

the P2P industry, the process of setting up a brand-new business is very easy and does not require much qualifications. The fact of incomplete supervisions to the people in this industry accumulated many potential risks, not only to investors, but also to the industry itself. Another important regulation issue is that the past regulations could not guarantee the credibility of the information published on these P2P platforms. This weakness allowed enough room for some platforms to raise funds using fake investment projects/unreal information. This is actually crucial to the online financial services—if investors cannot even access the real information, how can they manage their risks? In order to solve these problems, it's necessary for government to complete the regulations/restrictions to this industry in order to prevent the collapses in the future.

Besides the drawbacks and policy issues discussed above, the development of Inclusive Finance using the Internet financial industry also has some problems on a broader scale. Among the problems, an important concern is the diversification issue associated with Yu'ebao. As mentioned before, the scale of wealth managed by Yu'ebao has achieved an incomparable figure, and it plays a critical role in maintaining the health of China's money market. The fact that it is been relied too much has made this Internet financial platform "too big to fail". It has become the biggest "bank" in China itself at the same time when it brought shocks to the traditional banks. According to Bloomberg, Yu'ebao and its parent company "Ant Financial Services Group" has grown too big and it has caused concerns to Chinese policy makers, worrying that "companies like Ant Financial would pose systematic risks to China's $12.7 trillion economy" (Bloomberg, 2018). Evidenced by Figure 5, the scale of

money financed by this titan in Chinese Fin-Tech industry is beyond people's imagination, and it of course would raise concerns to all the participants of Chinese economy. According to Dong Ximiao, who is a senior researcher at Renmin University of China, "Ant Financial has become too big to fail. Any mishap could lead to market or even social disorder'' (Bloomberg, 2018). The government is no exception: Chinese policy makers are worried that may "post systemic risks to the nation's $12.7 trillion economy" (Bloomberg, 2018). In general, the concentration level of wealth accumulated in the Fin-Tech industry may cause serial bad outcomes, including liquidity problems, credit crisis, and a potential "Minsky moment".

Figure 5: The Scale of Ant Financial



According to Hyman Minsky, a celebrated heterodox economist, "stability is destabilizing" (Minsky, 1992). Minsky's financial instability hypothesis is about the essentially unstable reality of financial markets. In his hypothesis, the accumulation of debts in non-government sector drives crisis, and there are three balance sheet positions of financial market in the non-government sector: Hedge, Speculative and Ponzi (Minsky, 1992). Hedge

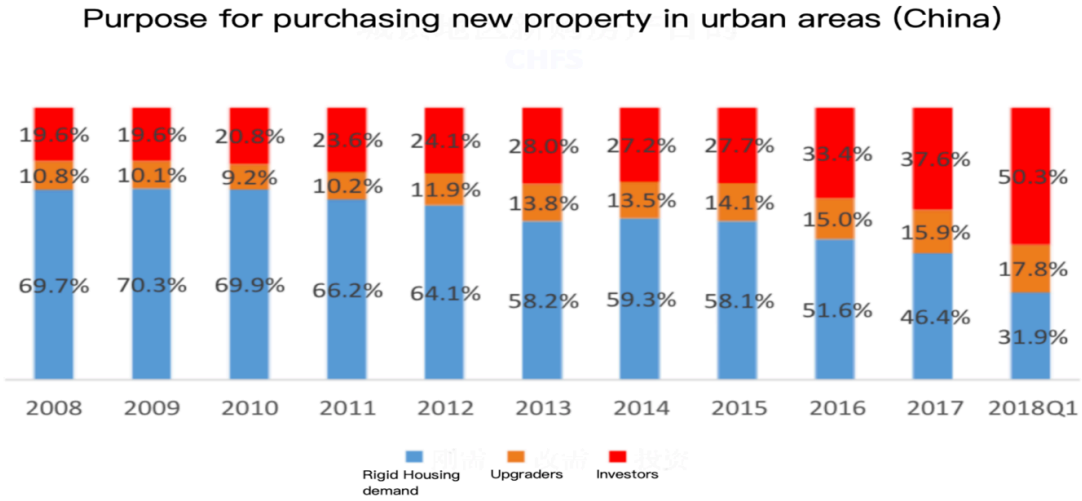
means that the borrower's expected income flows are sufficient to meet principle and interest payments. Speculative means that borrowers only have enough income to pay the interests. Ponzi means that borrowers cannot even pay the interests using their incomes, so they need to borrow even more to pay the interests of their existing loans (Minsky, 1992). From Hedge to Speculative to Ponzi, these three stages have increasingly smaller margins of safety as well as greater risks. Minsky's theory indicates that the financial crises are naturally created in capitalism because the prosperous economic performance would encourage borrowers and lenders to be progressively reckless and to develop risky financial products. As Ponzi finance appears in an economy, many financial institutions would find "novel ways to evade prudential regulations" and conduct many risk-taking financial activities in order to make more profits (Chancellor, 2017, p.9). So, as the debts accumulate in the economy, the risks are also generated and accumulated in financial markets. The strong financial structure of an economy will naturally become fragile as the expansions go on because there will be more and more risks involved due to increasing amount of speculative borrowings and Ponzi borrowings. Eventually, any small crashes in the financial market, like financing costs rise or lower income, can cause a series of defaults throughout the whole economy, and that will lead to a financial crisis, specifically a rapid de-leveraging, which is a "Minsky moment". The best demonstration of Minsky's hypothesis is the 2008 financial crisis: a few years after the previous shock, the economy of the United States was going through a relative stable period, culturing the booming of the mortgage market. As this trend of mortgage kept developing, more and more people were attracted into this market by the varied financial

instruments developed by many institutions. When the wave came to the high point, most of participants in the financial market thought they were experiencing the once-in-a-lifetime boom, which in fact was the illusory prosperity built on bubbles. Then, in late 2008, the bubbles burst, making countless dreams and illusions crashed, punching the well-being of the whole economy of the United States.

Many lessons can be learned from the United States' experience, but the most important takeaway should be that it's necessary to avoid illusionary prosperity and fragile economic structure. However, unfortunately, these underlying threats simultaneously grow along with the democratization of finance. The convenience that financial innovations bring to the society is a double-edged sword. While these democratization-aimed practices drastically simplify the way that people finance, they also bring enormous amount of risks: interestingly, the stimulus brought by automation of financial system in China is parallel to the highly-active financial market of the United States before 2008 crisis. Due to these financial innovations, the barrier for credit is significantly lowered on a large scale, thereby relaxing the prudence of loans throughout the financial system and increasing the overall level of leverage. Therefore, the investment scale of the whole society also goes up, generating more and more speculative practices that are harmful to the well-being of the financial system. The hotness of China's real estate market can be considered as the aftermath of this phenomenon. Due to the immature development of investment environment plus the growth wave in the real estate industry, most of Chinese investors believe that real estate is the best asset to invest in. The nationwide real estate industry in China has been

experiencing a huge growth in recent years with the house prices skyrocketing, indicating the overheating within the real estate industry. According to Knight Frank Global Residential Cities Index, Chinese cities accounted for four of the world's top five performing cities with Shenzhen leading the rankings, recording phenomenal price growth of 62.5% in the year to Q1 2016. This is followed by Shanghai (30.5%), Nanjing (17.8%) and Beijing (17.6)" (Knight Frank, 2016). Just like the bubble within the U.S. mortgage market, the irrational boom of Chinese real estate industry is heavily influenced by speculative purchases. As shown in Figure 6 below, the demographic distribution of house buyers experienced a drastic change during the past decade. The investment-driven purchases grew and squeezed the share of other types of purchases. More and more people rush into the real estate market in order to make great profits out of flipping houses. Gradually, Chinese people's understanding of real estate is more likely to be an investment vehicle rather than a place to live. Apparently, the real estate industry in China has deviated away from its fundamentals, and it is filled with speculative investments and the irrational optimism.

Figure 6: Graph of Purpose of Real Estate Purchase



Source: China Household Finance Survey

An important factor that contributes to this phenomenon is that the development of domestic-investment environment in China is still far from completed. Even though Chinese people's financial access has been widened by those democratization practices, the most of Chinese investors still face the problem of lack of high-quality investment assets and investment knowledge (Yi, 2010). According to a report published by Research Center for China Household Finance in Southeastern University of Finance and Economics, the proportion of real estate in Chinese households' asset allocation has exceeded 77%; also, the data shows that many Chinese families with junior high education or below put more than 80% of their overall property in real estate. The phenomenon of less-educated group investing a lot into real estate is a great illustration of why China still has a long way to go in terms of real democratization of finance, which will not only include popularization of financial services but also focus on Chinese people's financial awareness and financial literacy. Only by combining the improvement of people's understanding of finance and practices of democratization, China can make sound progress in popularizing beneficial financial services and constructing a healthy financial industry, avoiding the possible "Minsky Moment".

All in all, even though democratization of finance has brought phenomenal changes to Chinese financial industry, it also exposes many problems that are associated with the limitations and underdevelopments of the overall structure of Chinese financial market. Even the Internet financial industry is still in a stage of exploration and development. There are still certain challenges in the construction of industrial infrastructure, the improvement of the regulatory system, the establishment of a sound legal system, and the protection of consumer

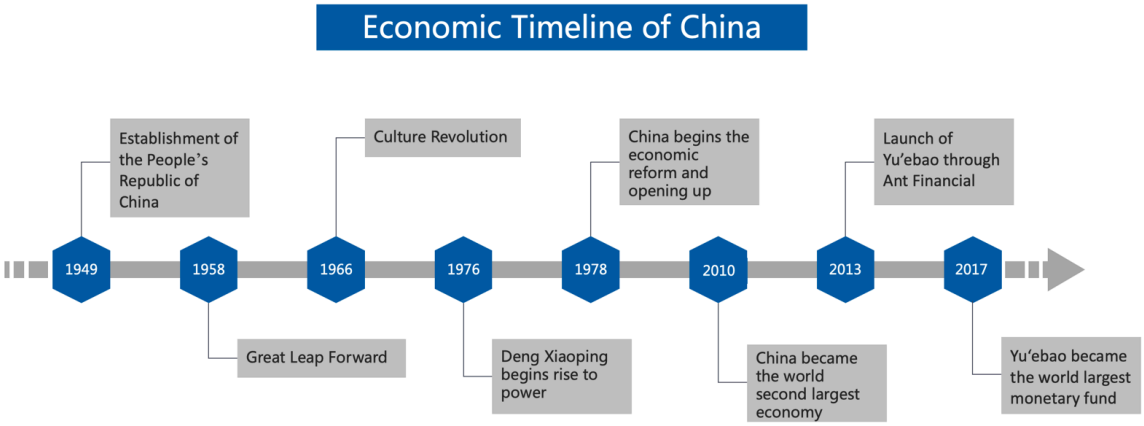
rights. It's important for Chinese policy makers to continue making necessary regulations that can catch the rapid evolving trend in this industry in order to secure the interests of mass who rely on this industry on every aspect of their lives, thus to maintain the normal operation of Chinese economy.

Chapter 3: The role of Internet Finance in the context of China's economic transformation

3.1 The production-dominated economic model of China in the past 40 years

In the modern history of China, 1978 should be considered as a remarkable turning point. In December 1978, the Central Committee of China held the epoch-making Third Plenary Session of the Eleventh Central Committee. This meeting had opened China's door that had been closed and dusted for decades to the external world that is full of opportunity; and it had settled the major decisions of China's reform and opening up; it also had established the fundamental national policy centered on economic construction. From then on, China began its reform and opening up as well as its unique path of socialism. It's necessary to note that reform and opening up is a very important period for Chinese economy, because it marks the end of Mao Zedong's reign and the starting point of a new era, which is represented by China's dramatic economic reforms and significant economic growth. This drastic economic reform developed and implemented by Deng Xiaoping have succeeded in transforming the Chinese economy from the chaotic aftermath of Mao Zedong's regime and his "economic experiments" into a well-functioning economy, evidenced by the timeline below.

Figure 7: Economic Timeline of China



Source: "浅析改革开放四十年中国经济快速发展的原因"

As shown in Figure 7, since the reform and opening up in 1978, the Chinese economy has achieved rapid growth for about 40 consecutive years. From 1978 to 2017, the GDP of China has grown from ¥364.5 billion (about $54 billion) to more than ¥80 trillion (about $12 trillion). In the past 40 years, China's nominal GDP has boosted by about 220 times, which is evidenced by the significant growth in GDP per capita. In 1978, the nominal GDP per capita was only ¥381 (about $57); however, it has exceeded ¥5,3000 (about $8,000) in 2017. Moreover, the average annual growth rate of real GDP during this period is also remarkable, especially from 1978 to 2011, when the annual growth rate has achieved 9.7% (Ma, Han, 2018). In addition to the domestic growth, China's contribution to the growth of world economy also has been increased: The share of China's GDP in the world was only 1.8% in 1978, and China only ranked as the 11th economy in the world; thanks to the rapid developments, China exceeded Italy to in 2000 and became the 6th in the world; in 2005 to 2007, China surpassed France and Germany respectively; in 2010, China also exceeded Japan and became the world second largest economy (He, 2018).

Figure 8: Ranking in size of Global Economies

These are the world's biggest economies

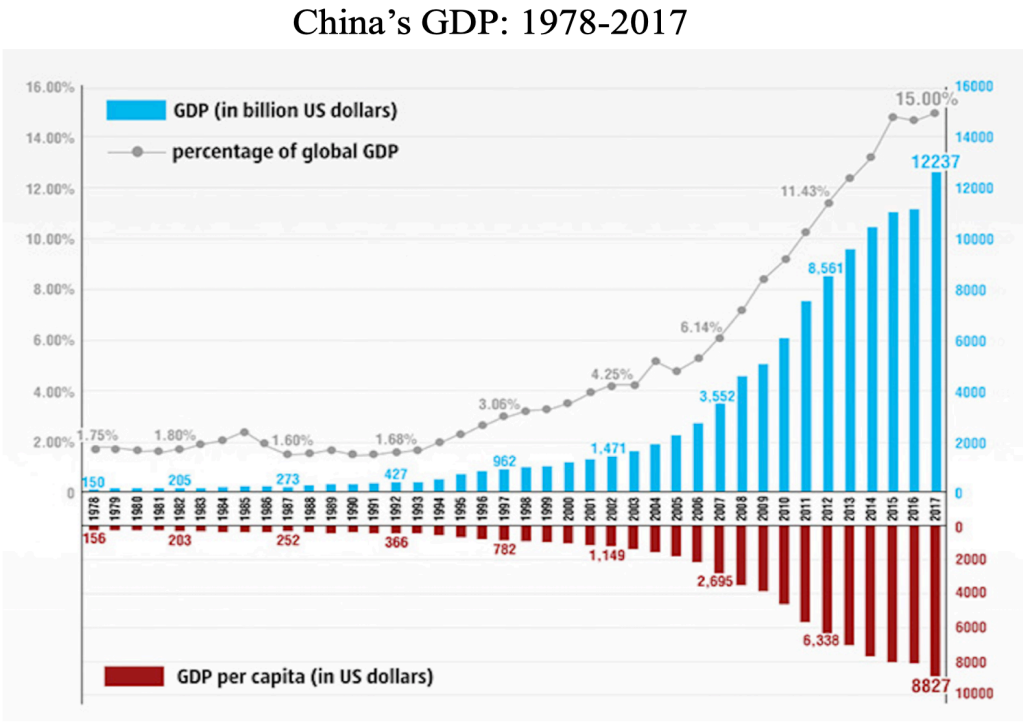
Based on data from the International Monetary Fund, 2018

Country	Value (in trillions)
1 United States	20.4
2 China	14
3 Japan	5.1
4 Germany	4.2
5 United Kingdom	2.94
6 France	2.93
7 India	2.85
8 Italy	2.18
9 Brazil	2.14
10 Canada	1.8

Source: IMF

According to IMF data, global GDP in 2012 was $71.28 trillion. To break it down into details: the European Union contributed $16.41 trillion; the United States contributed $15.65 trillion; and China's contribution was $8.25 trillion, which was more than half of the US GDP. By 2017, China's GDP was equivalent to $12.3 trillion, accounting for about 15% of the world's total economy, representing an increase of 13% compared to the data of 1978 (He, 2018). Figure 9 below shows a clear trend of China's economic growth and its contribution to the world economy over the past 40 years: started from only 1.75% of the global economy, China's GDP has grown 82 times and made it the world's second largest economy.

Figure 9: The record of Chinese GDP



Source: National Bureau of Statistics, World Bank

As demonstrated by the discussion above, it is fair to claim that China's economy has grown by leaps and bounds. Currently, China is at the forefront of the world, with rapid economic development, rapid urbanization, remarkable developments in science and technology, increasing international competitiveness, and prosperous trading process with other economies. Last but not the least, China's economic growth has brought a tremendous change to people's living standards. In just 40 years, the accomplishments China has achieved are rare in history. These rapid developments are driven by various reasons, including international trade, demographic dividend, etc.

First of all, international trade has played a huge role in promoting the growth of China's economy in the past decades. Within the broad concept of international trade, the industrial shift is an important factor. Under the context of economic globalization, China

successfully caught the chance from international industrial shift, and turned itself into a giant producer. Back in the 1970s, Japan has already become a developed country. Because of the oil crisis and economic crisis happened during the 1970s, Japan and other developed countries started to focus on technological developments, including new energy, new materials and other knowledge-intensive industries. At the same time, the developed countries tried to shift the labor-intensive industries that costed too much capacity, which included steel industry, textile industry, etc., away from their own economies (Guo, 2015). Japan shifted its old industries to the surrounding Asian areas in the form of foreign investments in order to utilize the cheap labor force in those areas. Because of this industrial shift, the "Four Asian Tigers" emerged: Hong Kong, Singapore, South Korea and Taiwan went through rapid economic developments and industrialization, and they became high-income economies by vigorously developing those labor-intensive industries (Chang, 2006). These four areas smartly used their relative cost advantages and benefits of accepting external investments and technologies to boost their overall GDP through international trade. Moreover, they also learned the whole procedure of how to do this kind of industrial shift. Later in the 1980s and the 1990s, after the "tigers" had risen, they joined the team of developed countries/areas and they started to shift these labor-intensive industries out as well. This time, Thailand, Malaysia, and most importantly mainland China, got the chance. This industrial shift has paved the way for China becoming the major manufacturing power in the world. By the 1990s, the economy of mainland China has been reformed and developed for a few years, and the investment environment of mainland has also been greatly improved (Guo,

2015). Moreover, at the same time, the economic globalization and advanced technology developments have brought tremendous changes to the world economy. In order to maintain their competitive advantages, the developed countries led by the United States and Japan have begun a new round of industrial reconstructions and upgrades (Guo, 2015). This reason further motivated the shifting of the labor-intensive industries from developed areas to the developing countries. With the foreign investments and technology, China was able to utilize its excessive labor force in the best way. By adopting these labor-intensive industries, China successfully achieved rapid economic developments through export trade in a short period. According to the data provided by the National Bureau of Statistics of China, China's manufacturing has been grown faster than the average growth rate of the world. As shown in the graph below, Chinese manufacture only accounted for 1.4% back in 1980; and its scale was only 1/5 of the American manufacture and didn't even entered the top 20 of global ranking. In 2000, the annual increase in Chinese manufacturing industry has achieved ¥3.2255 trillion (about $479 billion), already accounted for 7% of the overall manufacture around the world; and China's global ranking also leaped to the 4th. In 2009, the increased ¥13.4265 trillion (about $2 trillion) made Chinese manufacture surpassed Japan and became the second largest economy in the world. At this time point, Chinese manufacture has already taken more than 15% of the world total manufacture. By 2013, China surpassed the United States and became the world largest manufacturing economy by contributing more than 20% to the overall world manufacture. China has undoubtedly become a major manufacturing power of the world and it was an indispensable part of the global system of manufacture.

Table 1: Chinese manufacture's development over the past decades

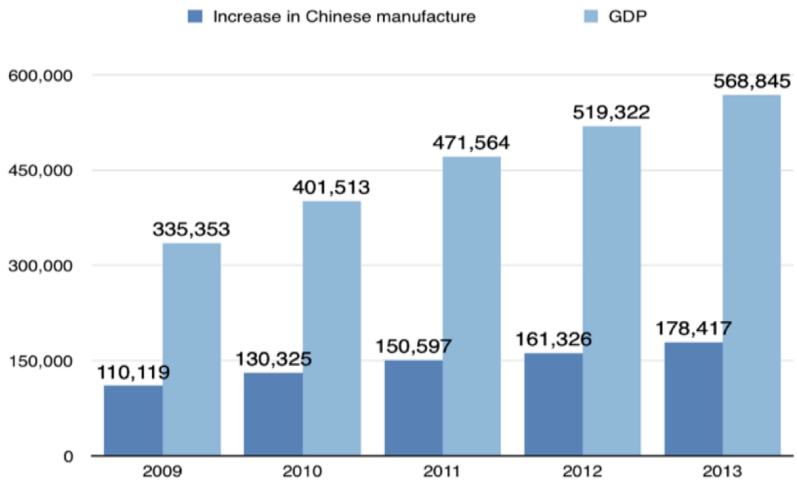
Year	Increase in Chinese manufacture	China's percentage of world manufacture (%)	China's global ranking of manufacture
1980	2192	1.4	28
2000	32255	7.0	4
2009	110118	15.6	2
2013	210689	20.8	1

Source: the National Bureau of China

In addition to the factor of industrial shift, China's economic growth also benefited from its own huge comparative advantage—the demographic dividend. A demographic dividend means that a country's working-age population accounts for a large proportion of its total population, with lower dependency rates. It is a favorable demographic condition for economic development and it usually generates "the accelerated economic growth that can result from improved reproductive health, a rapid decline in fertility, and the subsequent shift in population age structure" (Bill & Melinda Gates Institute, 2019). When the People's Republic of China was initially founded in 1949, the Chinese government's attitude towards its birth rate was pretty loose. But later in 1970s, Chinese government fully implemented some strict birth control rules called "family planning", the so-called "one child Policy" in Western reporting. Because of the family planning project, Chinese society enjoyed the demographic dividend from a light population burden (Ma, Han, 2018). This comparative advantage was fully utilized during the industrialization process. Since the reform and opening up, the eastern coastal cities, which firstly opened their windows for commerce, has achieved rapid economic growth with abundant foreign capital and cheap labor resources of China: the developments of coastal cities such as Shenzhen and Guangzhou have attracted worldwide attention. The excessive labor force from middle and west of mainland China

constantly flowed to the east urban areas, thus maintained the low labor cost for manufacturing industry. Thanks to the continuous supply of cheap labor force, Chinese manufacturing industry not only became important on a global scale, but also sparkled as a pillar section of domestic economy. Based on the National Bureau of Statistics of China, from 2009 to 2013, the increase in Chinese manufacture accounted for 32.8%, 32.5%, 32.0%, 31.1% and 31.5% of overall GDP respectively. The Figure 9 below provides a clear illustration of this increasing trend. What's more, the average rate of growth of Chinese manufacture was 12.9% over this period, which is significantly greater than the growth rate of China's GDP. At the same time, manufacturing industry accounted for more than 80% of China's overall export, 40% of national revenue; and it provided more than 80 million jobs to Chinese society (Bin, 2013). Obviously, the manufacturing industry was the dominant power for China's domestic economic growth.

Figure 10: A comparison between manufacture's growth & GDP growth



Source: National Bureau of Statistics of China

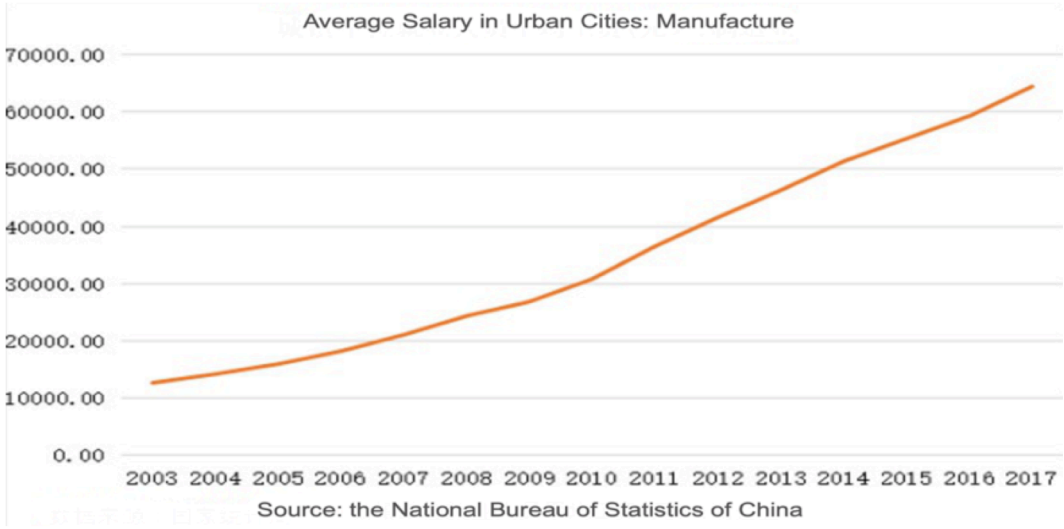
However, such rapid developments were built up upon a base with fundamental flaws. Throughout the history of the world's manufacturing powers and their competitions between

each other, the key factor was the competition of technology. By 2008, the developed countries' investments in technological development account for 86% globally; and they also contribute to about 90% of patents for scientific and technological inventions (Liu, 2008). From the perspective of globalization and technological developments, China as the manufacturing power was actually in a tough spot. Even though Chinese manufacture had the greatest contribution to the global commerce, the idea of "trading Chinese market with foreign technology" is deeply embedded in this economic model (Chen, 2006). A great portion of Chinese manufacturing companies heavily relied on the imported technologies without paying much attention to self-creation and innovation. Because of this reason, many Chinese companies completely became low-cost factories for foreign businesses and they would go bankrupt once there's no more foreign orders, since they already gave up independent innovation. Thus, the technological level of China's labor-intensive manufacturing industry was far below the world level; and China was in lack of high-tech enterprises that had strong world influence (Chen, 2006). In fact, many Chinese companies and Chinese factories were at the low end of the value chain, and the key technologies are subject to foreign countries, resulting in an unfavorable situation in which equipment/design with high technology added value must be imported from developed countries. This issue was a common phenomenon among Chinese companies, and it caused the unreasonable industrial structure of China. As stated above, Chinese manufacture mainly focused on labor-intensive industries and resource-intensive industries, without paying attention to the technology-intensive companies, resulting in the high nominal growth yet slow real progress

(Liu, 2008). Chinese enterprises were mostly restricted to the lower end of the value chain, and they could only provide resources for foreign technologies to consume. Clearly, the gap between the independent innovation capability of Chinese enterprises and developed countries was significant.

In addition to the trap of Chinese manufactures, the gradually decreasing dividends, especially the demographic dividend, were also a huge drawback of the old economic model. The change in China's demographic dividend can be divided into three stages: the first phase, 1982-2000, is the largest contribution period of the demographic dividend, which has played a significant role in economic growth. The second phase is from 2000 to 2013. During this period, the contribution of demographic dividend started to weaken. 2010 was a great example: the proportion of the working population reached a high point in this year, and then began to decline. Lastly, China is currently experiencing the third stage of 2014-2050, which the demographic dividend becomes negative. In 2014, the population who are over 65 years old has reached 10% of the overall Chinese population (Insight & Info Consulting Ltd, 2018). China has become a country with severe aging. Accompanying the disappeared demographic dividend, the labor cost of manufacturing in China has increased significantly over the past decade. Figure 11 shows a clear trend of Chinese nominal labor cost rising, especially in the manufacturing industry, over the past decade, with the average inflation rate being around 2.53% (National Bureau of Statistics of China, 2017).

Figure 11: Nominal Salary Growth in Manufacture

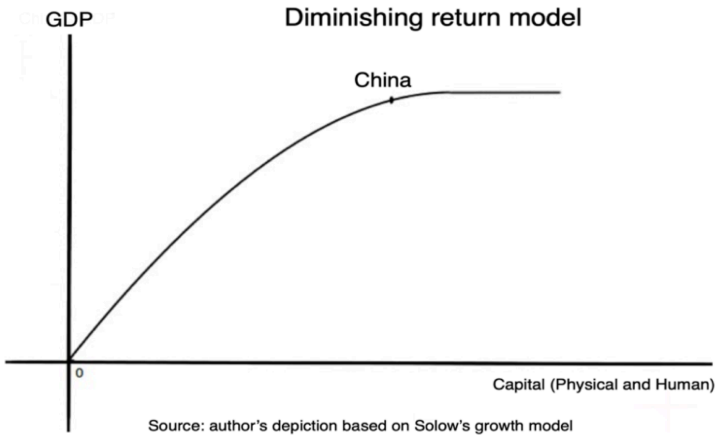


In recent years, Chinese labor price is much higher than that of some Southeast Asian countries now. Recently, many foreign giants start to shift their factories out of China and relocate to Southeast Asia, seeking for lower labor cost. According to Forbes China, Japanese sensor giant OPTEX planned to transfer its manufacturing plant from China to Vietnam; other large foreign companies, like Panasonic, Nike, Uniqlo and so on, have also taken actions in establishing factories in Southeast Asia. Many facts prove that China's manufacturing plants are moving outward. China's characteristic of "world factory" diminishes while the global manufacturing production are decentralizing. The rise of the Southeast Asian labor market has become more attractive than China, so the multinational giants move their factories, chasing the low cost of production.

Furthermore, the idea of diminishing returns is also a good illustration of China's economic model. Initially brought up by classical economist Anne Robert Jacques Turgot and later optimized by classical economists David Ricardo and Thomas Malthus, this idea defines the following circumstance: when the total quantity of a production factor has achieved a

certain level, the increase that this factor may result in the output starts to diminish (Turgot; Ricardo, 1815; Malthus 1798). Relating China's economic development to this concept, the returns of keeping investing labor and capital into the low-end production has been decreased for several years. Figure 12 is a great visualization of China's situation following the Solow Growth Model, indicating that the old growth model of China has come to an end, as the marginal revenue of capital has diminished and the resources of the government and many companies have reached their limits.

Figure 12: China's position in Solow Growth Model



Source: author's depiction based on Solow's growth model

All in all, China's economic development has made tremendous achievements in the past 40 years. However, opportunities and challenges coexist, and China faces some problems while the economy is developing at a rapid pace. From 1979 to 2008, China's economy grew at an average annual rate of 16.3%; however, the growth rate of Chinese economy started to slow down after 2008. By 2016, China's GDP growth rate was only 6.7% (Liu, 2015). With the gradual disappearance of demographic dividend, resource dividends, the problem of environmental pollution and waste of resources have become prominent, forcing China to change its economic model and become a "green economy." Moreover, the

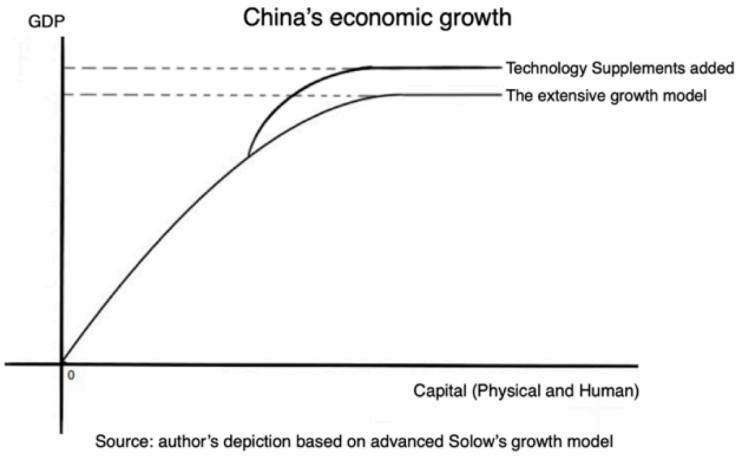
low-end products, low value-added production process, less developed technologies are hindering China from making real progress in both technology and self-creation (Liu, 2015). And the diminishing returns of the old economic model also marks the end of the extensive growth. At this time point, China in urgent need of transformation and upgrading—it must take on actions to change its situation or it would end up being eliminated from the race of developments.

3.2 The “new normal” of China’s economy—the economic transformation & Internet Finance’s role

Since 2007, China’s economic growth has gradually declined. Even though the Chinese government has implemented a series of monetary and fiscal policies, the rate of economic growth has clearly slowed. The president of People’s Republic of China, Xi Jinping claimed that the Chinese economy has entered a “new normal”, which marks the beginning of a new era for Chinese economy. Under the “new normal”, Chinese economy would no longer operate in the old extensive economic growth model but would focus on revolutionizing and upgrading. The main feature of Chinese economy entering the “new normal” is that it has shifted from high-speed growth to medium-high-speed growth, and the economic structure has been continuously optimized and upgraded, from resource-driven and investment-driven to innovation-driven (Li, 2014). To be specific, from now on, China will bid farewell to the GDP-driven growth, low-end industrial structure and regular restriction and stimulation to the market, at the same time considering the development of technology and social welfare. It’s important to note that Chinese government regards the tertiary industry and consumption-oriented industries as the next pillar for Chinese economy under the “new normal”. According to People’s Daily, throughout the history of dominant trading powers, once the export of a certain economy hits 10% of the overall global trading, this economy would encounter an inflection point, where its growth rate would gradually slow down. China’s total export achieved the 10% of the world’s total in 2010; and it even reached 12.3% in 2014. This represents that the inflection point of Chinese export growth has arrived, and

Chinese economy must adjust based on this situation. As mentioned above in illustrating the concept of diminishing returns, Chinese economy is already at the end stage of its extensive growth model, it is unlikely for the old model to the maintain high export growth and a high ratio of exports to GDP anymore. Thus, the economic growth in the future must fuel on new sources, including the progress related to domestic consumption demand, developments by innovation and technology, etc. These new directions of Chinese economy can work as the "technology supplements", which are the exogenous sources of growth. In addition to the concept presented in the Figure 12—Solow's growth model, Figure 13 shows a technology augmented version of Solow's diagram, illustrating how these technological advancements can bring new energy to Chinese economy and stimulate new growth. Clearly, the rise of the Fin-Tech industry coinciding with China's economic transformation allows China to create a "new economy", defeating the business cycle using technological advancements and reform of policies (Atkinson, 2006).

Figure 13: China's New Economy in Technology-augmented Solow's Model



Source: author's depiction based on advanced Solow's growth model

Among all the technical supplements, the most important motivator of the Chinese economy's transformation is the rapid developments in the Fin-Tech industry. The Fin-Tech

industry is not only a main stimulator of domestic economic growth, but also a necessary factor of the next step of Chinese economic plan: the implementation of China's own version of globalization— "One Belt One Road" (OBOR), also known as the "Belt and Road Initiative" (BRI). Borrowing the name from ancient Silk Road, this initiative "aims to promote orderly and free flow of economic factors, highly efficient allocation of resources and deep integration of markets by enhancing connectivity of Asian, European and African continents and their adjacent seas" (Xinhua News Agency, 2015). The countries/areas involved in this initiative are all in the developing process of their economies with a huge space for future developments. Also, the population of these emerging economies and developing countries accounts for more than 63% of the overall global population, so these economies have some huge market potentials that can be converted into real growth (Wang, 2017). During 2012 to 2015, the trading volume between China and some countries along the "OBOR", like Thailand and Vietnam, increased significantly, created close and friendly trading relationships between China and these countries (Wang, 2017). By exporting investments and Chinese inventions to other countries, optimizing the pattern of economic development and promoting coordinated economic growth across different regions/countries, China opened a new pathway for it to generate economic growth through its new approach of international trade.

With the implementation of the OBOR, the basic interconnection-oriented network between China and countries along the route is under rapid construction, making the transactions and logistics system between countries happen more smoothly. Accompanying

China's attempt of implementing its own style of economic globalization, the flourishing Chinese Fin-Tech industry also faces new opportunities. Under the context of China exporting its own brands, the Fin-Tech companies can elevate themselves by expanding their businesses to overseas in order to develop cross-border e-commerce platforms for domestic companies. By 2017, China has nominated 15 pilot cities for cross-border e-commerce, including Guangzhou, Zhengzhou, Ningbo, Hangzhou, Tianjin, Shanghai, Chongqing, Hefei, Chengdu, Dalian, Qingdao, Shenzhen, Suzhou, Fuzhou and Pingtan (Wang, 2017). These cities established unique industrial parks for cross-border e-commerce, and successfully expanded this new approach of international trading. In addition to these pilot cities, most of big cities in China have already constructed diverse platforms for international e-commerce—it's fair to say that an "online silk road" is being created. As shown in the Table 2 below, the growth rate for cross-border e-commerce has far exceeded the growth rate of China's overall international trading in the same period since 2011. From 2011 to 2016, the average growth rate of cross-border e-commerce in China was 30.8%, and it even reached 50% in 2013. During the same period, the growth rate of China's overall international trade showed a significant decline, being less than 10% for several consecutive years. In 2014, the growth of total international trade was only 3.4%. On the other hand, the proportion of cross-border e-commerce in China's import and export trade has gradually increased over this period, from 7.6% in 2011 to 24.3% in 2016. Undoubtedly, even though the traditional exporting industries of China were going through some tough times, the cross-border e-commerce brought some new energies to Chinese economy.

Table 2: The scale of Chinese Cross-border E-Commerce from 2011 to 2016

Year	Cross-border E-commerce Revenue(¥ trillion)	Growth rate of Cross-border E-commerce (%)	Percentage of total international trade (%)
2011	1.7	33%	7.6%
2012	2.1	23.5%	9.5%
2013	3.15	50%	12.0%
2014	4.2	33.3%	15.5%
2015	4.8	14.2%	19.5%
2016	6.3	30%	24.3%

Source: China E-Commerce Research Center (100EC.CN)

The support from Fin-Tech companies is important and indispensable during the development process of large-scale international e-commerce platforms. Nowadays, China already has thousands of Fin-Tech companies that provide online payment services, online loan services, and other financial tools to the e-commerce platforms, allowing these platforms to be more customer-friendly and easy to use. The Fin-Tech giants like Ant Financial provide convenient transaction experience for both sellers and customers, improving the efficiency of international e-commerce. Moreover, since the core idea of OBOR is to export China's skills and technologies to other developing countries in order to achieve co-prosperity, the export of Fin-Tech achievements is also necessary. In the area of exporting these advanced technologies, the Ant Financial, which is the parent group for Yu'ebao, is the best representative. In November 2016, Ant Financial established a strategical cooperation with Ascend Money, which is a Thai leading online payment company, and brought the inclusive financial model of Ant Financial to Thailand through exporting technology and experiences (Qian, 2017). In addition to Thailand, Ant Financial also expanded its business to many other countries on the route of OBOR, including Indonesia, India and the Philippines… Because of

Ant Financial, the extents of Inclusive Finance in these countries were also pushed up to a new level: like everyone in China, citizens of these countries can use their phones for many types of daily payments through Alipay App powered by Any Financial, skipping the inconvenient process of taking out wallets and paying with cash (Qian, 2017). Ant Financial's export of technology to these developing countries can be considered as a pilot exploration for the future development of Chinese Fin-Tech industry under the context of OBOR. According to a senior director of the globalization department of Ant Financial, exporting financial technologies to the developing countries that carry huge potential customer group and space for development is definitely worth the price. Interestingly, Ant Financial refers this kind of business expansion as "Glocalization", which sums up both globalization and localization (Zhang, 2017). Evidenced by the outcome, the effect of "Glocalization" is significant: in April 2017, the number of users of Paytm, which is the Indian Partner of Alipay, increased from less than 30 million to 220 million, becoming the world's third largest electronic wallet, second only to Alipay and WeChat payment, both China-based, and surpassing Paypal (Qian, 2017). In the senior director's words, Ant Financial wants to turn not only China, but also the other nearby countries on the route of OBOR to become "cashless" in the future (Zhang, 2017). This application of financial technology not only responds to Chinese government's policy direction, but also further implement the idea of Inclusive Finance in both China and OBOR countries.

All in all, with the rise of Internet finance technology, Inclusive Finance has been further developed through the integration of technology and finance in addition to the

traditional financial formats. Even though the Fin-Tech industry may still faces risks and challenges, its possess a promising future. Also, the innovations and developments brought by this new method are closely related to the spirit of “One Belt One Road” initiative. It is not difficult to predict that the implementation of Chinese Inclusive Finance, even the global Inclusive Finance, will experience a greater difference by making more advanced developments in the future construction of the “One Belt One Road”.

Chapter 4: Future directions of the Fin-Tech industry developments & Conclusion

4.1 Future directions

Under the background of the "new normal", the constantly reforming Internet finance industry has promoted the transformation of Chinese economy. Its various genes are also changing the original financial system of China and redefining the financial services, opening up a huge space for new innovations and technological developments. In the new economic model, innovations and consumptions will be the steady sources of support and motivation for the rapid developments of Internet finance. Therefore, those Fin-Tech companies must further develop their spirit of openness, equality, unity and sharing in order to bring better services to customers. On the 2016 China BFSI Outsourcing Summit, Chenghui Zhang, the president of the Financial Research Institute under the Development Research Center of the Chinese state council, gave a speech entitled “The New Normal of Financial New Business Services" (Ministry of Commerce of the People’s Republic of China, 2016). In president Zhang’s opinion, the traditional financial institutions not only need to expand their business across industries, but also need to cooperate and to communicate with new innovations in order to achieve a better status. More importantly, these institutions should enhance their core business capabilities in order to remain their competitiveness. Throughout the whole speech, the core idea presented is the future mission of the financial industry as a whole: to serve economic transformation and industrial upgrading, including improving efficiency of financial system, encouraging and perfecting the market development, and capital expansion.

Under these idea, President Zhang stated three possible detailed directions for the future development of Chinese Internet-based financial industry, as summarized in Figure 13 below.

Figure 14: Three directions suggested by President Zhang

First, since the Fin-Tech industry will become a pillar of Chinese economy, providing stimulus to the economy thus to generate more growth, it's necessary to strengthen the professionalization and specialization within this industry in order to make the it capable of taking such responsibility. By now, there are already some examples which have achieved a relatively deep level in their fields: some focus on home mortgages and some focus on car loans, etc. The U.S. online mortgage company, Rocket Mortgage, is a great instance, demonstrating the optimistic future of this market (Kurt, 2019). Even though the business fields for these companies are not wide, they are very professional and refined in their own fields. In the future, there will be more Fin-Tech companies specializing on various specific fields, providing more professional services to the customers. The professionalism and specialization associated with these services can greatly refine the financial system, improving the efficiency of the whole industry. The second direction will be the large-scale normalization motivated by constantly improving regulations. During the early stage of Fin-Tech industry development, especially in the online loan industry, there were many irregular organizations in this industry, creating chaos and disturbing factor and hindering the

whole industry from sound developments; the P2P crashes is a good illustration of the aftermaths brought by these companies. In the future, accompanying the reform of regulations, the development of the whole Fin-Tech industry will move towards a healthy direction following the trend of perfecting market mechanism on the macro level: the thresholds for online loan industry will be improved; and there will be higher requirement of cyber security; also, the protection of legitimate interests will be strengthened. Last but not the least, the third future direction of the Fin-Tech industry is diversification. Driven by the increasing competitions within the whole industry, services provided by online platforms will only become more and more comprehensive and tailored to users' needs. Moreover, with the gradual maturation of the Fin-Tech platforms in the urban cities, the focus of market competition in the future should also put more focus on the rural areas, thus to further promote the democratization of finance in those undeveloped areas. Following this trend, the financial system of China will be expected to go through many expansions in the future. Accompanying the possible developments of the Fin-Tech industry in the future, the regulations and laws that this industry ought to obey will also be developed to a higher level in the future. In order to eliminate the systemic risks associated with the Chinese Fin-Tech industry, the regulators need to perfect the detailed standards within the industry, enhancing the construction of a comprehensive monitor system while allowing space for Fin-Tech companies to be creative and innovative, thus to make the Fin-Tech industry healthier in the future.

4.2 Conclusion

China's financial environment and Chinese economy have been drastically changed by the implementation of democratization of finance. As the most innovative and technical method, the Internet-based financial industry has a broad prospect of developments under this context. The rise of this industry is in line with the development of Inclusive Finance, creating an industrial road for the democratization of finance: the natural attributes of inclusiveness of the Fin-Tech industry facilitate the progress of the implementation of Inclusive Finance, at the same time making the general public accepting this new way of financing. So far, the scale of the Fin-Tech industry in China has grown so big that it needs to be measured in trillions, and it has gradually become an important pillar of the overall financial industry, supporting China's economic plan of defeating the business cycle. It's fair to claim that the future development of this industry is closely associated to China's future economic prospects.

At the same time of crediting Fin-Tech industry for its contribution to China's economic transformation, it's necessary to remember that the risks it carries are tremendous. As discussed previously, risks associated with Fin-Tech innovations include not only risks that are common in traditional financial industry but also Internet-related risks. Due to the fact that Internet-based industry is fast-changing and hard to regulate, regulatory policies in this industry should follow the constant changes and innovations and guide the Fin-Tech industry to achieve sustainable developments. Moreover, the Fin-Tech giants like Alibaba has already grown too big; any minor crash of it may cause an unimaginable hit to Chinese

financial industry. Thus, it is crucial for regulators to find the delicate balance between the development of the industry and regulatory policies in order to maintain the healthy operations of such companies and to the continuous democratization of finance and prosperity of Chinese economy.

Moreover, the impact of China's democratization of finance should also be examined from a critical perspective. Certainly, this policy greatly widened the overall access to financial services, but it also generates significantly more leverage within the whole society. Because of the un-matching developments between China's domestic investment environment and the democratization of finance, the excess money that Chinse people would like to "finance" can only be used in speculative way, generating irrational boom in some markets, like real estate industry, planting the seed for a possible "Minsky Moment". This malformed situation should be taken care of by expanding the variety of great financial assets that masses can invest in as well as popularizing the education for financial literacy.

Through the above analysis, it's obvious to tell that the Chinese Fin-Tech industry and the implementation of democratization of finance in China are still in the developing stage, featuring the coexistence of advantages and disadvantages. However, most of these shortcomings are the ones that are associated with the current development stage, and they can eventually be solved in the future, as long as the regulator should keep improving legislation and refining related responsibilities. Overall, the future of Chinese Fin-Tech industry is still promising, and it will keep play an essential role in democratization of finance and Chinese economic transformation.

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