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THE POTENTIAL OF THE FINTECH INDUSTRY TO SUPPORT THE GROWTH OF SMES IN INDONESIA

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MANAGEMENT STRATEGY AND INDUSTRY EVOLUTION
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Summary

Small and medium enterprises (SMEs) are an important driver of economic activity in most developing and developed economies. In developing countries, SMEs' role become more crucial since SMEs can in fact become the engines that sustain growth for long-term development in developing countries. SMEs in Indonesia are representing one of model of SME in developing countries. Criteria of SMEs in Indonesia is defined under the Law No. 20 year 2008 on Micro, Small, and Medium Enterprises based on the total net assets (excluding land and building) and annual sales of the firms.

According to the data provided by the Indonesia Ministry of Cooperatives and SMEs, as of 2013, there are around 57million of SMEs in total operated actively in Indonesia with more than 99% of SMEs in Indonesian market are consisting of micro enterprises located in rural/backward areas, and had little knowledge of financial issues. In 2012, SMEs in Indonesia contribute to 59% of the total GDP in the country, 97% of the total workers, and 15.7% of total export values. Similar to SMEs in other developing countries, SMEs in Indonesia experience difficulties to access the financing due to collateral/ guarantee requirement and the high lending rate. As a result, it is negatively affected SME survival and growth rates in general. Commercial banks and traditional financial institutions consider SME as risky and costly to serve, thus, SMEs are largely underserved

when it comes to basic financial services and tend to use the internal fund as source of financing.

The "FinTech" – short for "Financial Technology is a dynamic intersection of the financial services and technology sectors, where technology-focused start-ups and new market entrants innovate the products and services currently provided by the traditional financial service industry. There are three periods of FinTech evolution based on the period of development, namely FinTech 1.0, FinTech 2.0, and recently FinTech 3.0. The FinTech 3.0, born during 2008 in the market, as the main focus of this study has been driven by the needs of development and the inefficiencies in the existing financial system, combined with the rapid introduction and reach of new technology, particularly mobile communications. One of its product, namely peer-to-peer (P2P) lending platform, provides market place of unsecured lending service which could benefit the most for SMEs who seek alternative financing.

The study is set out to explore whether FinTech industry have potential in Indonesia and also to understand the main factor, in order for the FinTech services, could give utmost support for the growth of SMEs' business in Indonesia. A case comparison study of China's FinTech industry is carried in this study to examine how the FinTech industry successfully gain high traction in China's market and satisfy the financial needs of SMEs in China. China's case is selected for the purpose of this study because both China and Indonesia as developing countries have some common environment in terms of: (1) population density, (2) number of unbanked population; (3) the importance of the SMEs in economic growth; and (4) the financial constraint by SMEs in each country.

The P2P lending platform, creates an important allocation role, and become solution especially for SMEs in China that have constrained the credit access. It has gained traction and market acceptance from SMEs seeking credit, mainly because: (1) no collateral is required to obtain required amount of working capital; (2) the simplicity of application of lending process on paperless basis; (3) faster lending approval and cash disbursement; (4) competitive lending rate; and (5) no penalty is given in general from early repayment.

By learning from China's FinTech industry, there are three conditions are observed to be

important as key success factors for the FinTech industry to support the growth of the SMEs: (1) the digital technology adoption level of the SMEs, (2) the financial literacy skills of SMEs as user of FinTech service, and (3) the regulatory frameworks.

<Inside Cover>

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CHAPTER 1. INTRODUCTION

Section 1. IMPORTANCE OF SMEs FOR ECONOMIC GROWTH

Small and medium enterprises (SMEs) are a major driver of economic activity in most developing and developed economies. They account for more than half of the world's gross domestic product (GDP) and employ almost two-thirds of the global work force (World Economic Forum, 2015).

The total number of SMEs is hard to estimate. More than 95% of enterprises across the world are SMEs, accounting for approximately 60% of private sector employment (Edinburgh Group, 2012). As cited in the report from World Economic Forum (2015), in emerging markets alone, there are 365 million to 445 million micro, small and medium-sized enterprises exist, out of which 25 million to 30 million are formal SMEs and 55 million to 70 million are formal micro-enterprises, while the rest (285 million to 345 million) are informal enterprises and non-employer firms. In developed markets, approximately 100 million formal SMEs exist. From the study, it shown that the formally registered SMEs account for more than half of the GDP of high-income countries, the impact is even higher if also taking into account "informal" small business.

Report from the Edinburgh Group (2012) also shown that the contribution made by SMEs does vary widely between countries and regions. Nevertheless, although they play particularly key roles in high-income countries, SMEs are also important to low-income countries, making significant contributions to both GDP and employment. Previous study on SMEs by Viral (2012) also mentioned that SMEs play important role in promoting grassroots economic growth and equitable sustainable development. The high rates of economic growth will contribute to economic and social development and poverty reduction. However, it also depends on the quality of growth. Quality of growth includes the composition of growth, its spread, and distribution and most importantly the degree of sustainability (Viral, 2012).

Section 2. SMEs IN DEVELOPING COUNTRY

In developing countries, the roles of SMEs become more crucial because, other than SMEs have potential to support the improvement of income distribution, employment creation, poverty reduction and national export growth, SMEs also leads to the development of entrepreneurship, industry and the rural economy (Viral, 2012). SMEs can in fact become the engines that sustain growth for long-term development in developing countries. When growth becomes stronger, SMEs gradually assume a key role in industrial development and restructuring. They can satisfy the increasing local demand for services, which allows increasing specialization, and furthermore support larger enterprises with services and inputs (Edinburgh Group, 2012).

SMEs in many developing countries had been strongly restricted in accessing the capital that they needed to grow and expand, including SMEs in Indonesia. Banks do not provide SMEs with adequate capital in many of developing countries (Edinburgh Group, 2012). Due to high costs for transactions and information collection, as well as immeasurable risks, financial institutions generally hesitate to finance the SMEs. However, since SMEs are a critical component of economic and social stability in a country, improving financial access for SMEs is actually important to enhancing production quality, increasing new business opportunities and as final result, stimulating investment and consumption at the national level (Shinozaki, 2012).

Section 3. FINTECH TREND IN ASIA

The advance of technology integration has revolutionized the various industries, and financial industry is no exception. The approach of financial services from technology background, which currently popular with the term “FinTech”, is rising huge interest all over the world and also in Asian’s market. KPMG (2015) reported that in 2015, investment in Asia’s FinTech firm rising from $1.1 billion to $4.5 billion year-over-year. During 2015, China’s FinTech investment growing significantly, from just above $600 million in investment in 2014 to almost $2.7 billion in 2015 from significant deals (KPMG, 2015).

The local regulators in China were investigating FinTech's opportunities at the first place in order to see how they can use FinTech to accelerate innovation as financial solution for SMEs that has been underserved by the large banks in past. There exists no regulation for FinTech's industry at first in China for several years and the FinTech's market growth exponentially without heavily regulated (Chen and Ernie, 2015). It is also important to highlight that China is the country with most mobile phone users in the world (Statista, 2016) and high internet penetration, reaching the rural area which enable the rapid adoption of new technologies, such as FinTech services.

Section 4. SIGNIFICANCE OF THE STUDY

Considering the importance of SMEs to support the economic growth in Indonesia as developing country, the financial constraint facing by the SMEs need to be addressed. This study will focus on the potential of FinTech industry in Indonesia to support the growth of SMEs' business by providing alternative financing support for the SMEs in Indonesia which currently have low access to bank credit and obtain sufficient work capital. The case of China's FinTech industry will be selected as case comparison study along with literature review on general FinTech industry.

Section 5. OUTLINE OF THE STUDY

Following this introduction chapter, the remaining of this paper is organized as follows. Chapter 2 describes the overview of SMEs in Indonesia, which elaborates on the SMEs' characteristic and major challenge for SMEs in Indonesia. Next in Chapter 3 elaborates on invasion of FinTech which consist of explanation of the FinTech evolution, the products of Fintech, the role of FinTech to support the growth of SMEs by learning from China's FinTech industry. Chapter 4 describes the FinTech for SMEs in Indonesia, including the SMEs adoption to IT and the potential of FinTech industry in Indonesia, together with analysis in comparison to China's FinTech industry case study. Lastly Chapter 5 presents the final conclusion and some recommendations.

CHAPTER 2. OVERVIEW OF SMES IN INDONESIA

Section 1. SMEs CHARACTERISTIC IN INDONESIA

SME play a major role in economic and social development of countries in world, both in developing and developed countries. As explained earlier, SMEs in Indonesia is representing one of model of SME in developing countries. According to Tambunan (2008), SMEs in Indonesia have historically been the main player in domestic economic activities and an engine for economic development. Although the growth of the Indonesian economy has been slowing since 2011 due to the result of the global financial crisis, the growth of SMEs in Indonesia has remain increased from time to time. It appears that the SMEs operation is not severely damaged from such crisis and could survive from the crisis. (Asia Development Bank, 2015). Moreover, it is also a large provider of employment opportunities, and hence a generator of primary or secondary source of income for many households. The term of SMEs mention going forward in this study is also going to include the micro enterprises in Indonesia.

2.1.1. Definition of SMEs in Indonesia

For firms to be considered as SME may different from one and another country. As for Indonesian SMEs, definition is provided under the Law No. 20 year 2008 on Micro, Small, and Medium Enterprises ("SMEs Law 2008"). Definition for micro enterprises in Indonesia just recently introduced under this SMEs Law 2008. Previously under the SMEs law issued on 1995, there is no definition provided explicitly for micro enterprises.

SMEs is productive entity owned by an individual or individual business unit with certain amount of net assets and sales. The foreign-owned entity is not included by SMEs definition. The criteria of SMEs in Indonesia basically divided based on the total net assets (excluding land and building) and annual sales of the firms.

Table 1: SMEs Criteria in Indonesia based on SMES Law 2008

No.	Enterprise	Criteria	
		Net Assets	Annual Sales
1	MICRO	Maximum Rp50million (around US$3,800)	Maximum Rp300million (around US$22,700)
2	SMALL	> Rp50million – Rp500million (around US$3,800 – US$37,800)	> Rp300million– Rp2.5billion (around US$22,700 – US$187,700)
3	MEDIUM	> Rp500million – Rp10billion (around US$37,800 – US$756,000)	> Rp2.5billion – Rp50 billion (around US$187,700 - US$ 3,780,000)

Note: US$1 equivalent to Rp13,230 based on rate from Central Bank of Indonesia as of 26 June 2016)

2.1.2. Growth of SMEs and Contribution of SMEs in Indonesia

According to the data provided by the Indonesia Ministry of Cooperatives and SMEs, as of 2013, there are around 57million of SMEs in total operated actively in Indonesia. As can be seen in Table 2 below, more than 99% of SMEs in Indonesian market are consisting of micro enterprises. Deloitte (2015a) further stated in its study that the average years of operation of Indonesian SMEs at approximately 16 years, which considerably high.

Table 2: Data of SMEs vs. Large Enterprise in Indonesia as of 2013

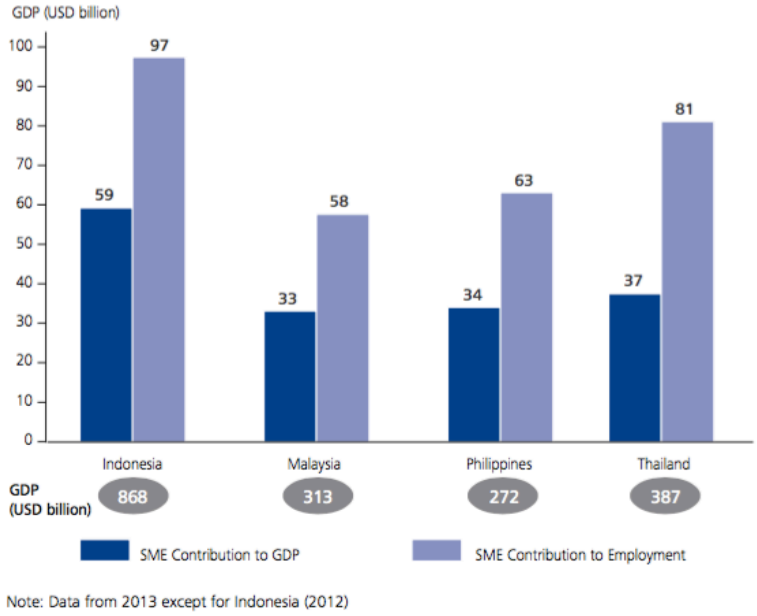
No.	Business Category	Total Firms	Total Employees	GDP Contributions (%)
1.	Micro, Small, and Medium Enterprises (SMEs)	57.895.721	114.144.082	60.34
	Micro Enterprises	57,189,393	104,624,466	36.90
	Small Enterprises	654,222	5,570,231	9.72
	Medium Enterprises	52,106	3,949,385	13.72
2.	Large Enterprises	5,066	3.537.162	39.66

Source: Indonesia Ministry of Cooperatives and SMEs

The economic growth in Indonesia has been sluggish since 2011 however, the SMEs keep

bolster the national economy by constantly increasing the contribution to the GDP in Indonesia. According to report by Deloitte (2015a), in 2012, SMEs contributes to 59% of the total GDP in the country, the highest among others three developing countries such as Thailand (37%), Philippines (34%), and Malaysia (33%). SMEs in Indonesia also noted to have important role as source of employment which stands to contribute at the highest (97%), followed by Thailand (81%), Philippine (63%), and Malaysia (58%).

Figure 1: SME Contribution to GDP and Employment in four Developing Countries

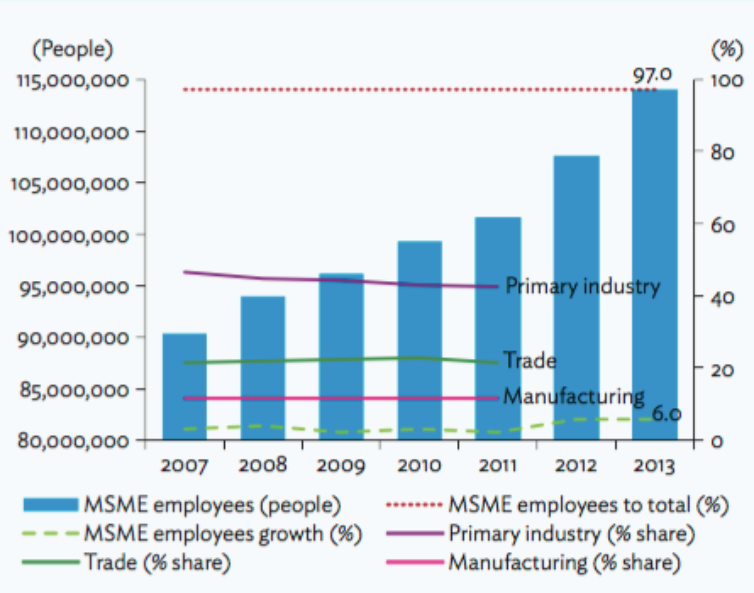


Note: Data from 2013 except for Indonesia (2012)

Source: Asia SME Finance Monitor 2013; SME Corporation Malaysia; Department of Statistics Malaysia; Indonesia Ministry of Cooperatives and SMEs; Thailand Office of SME Promotion SME White Paper 2014; APEC Policy Support Unit; DP Information Group cited by Deloitte, 2015a

As reflected in Figure 2, from the total of 114.1million SMEs employees or 97% of the total workers in the country, 42.4% worked in primary industry, while 21.7% work in trade sector (wholesale and retail), 11.7% work in manufacturing, and 10.5% sector work in service sector. This composition claim has not been changed for long time (Asian Development Bank, 2015).

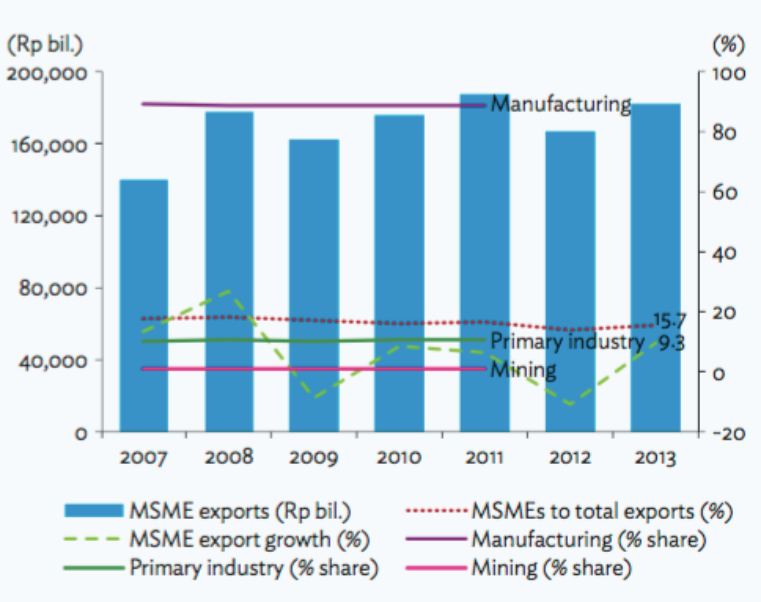
Figure 2: Employment of SMEs in Indonesia, 2007-2013



Source: Indonesian Ministry of Cooperatives and SMEs
cited by Asian Development Bank, 2015

Most of the SMEs in Indonesia family-owned or self-employed microenterprises with small-scale routine operations within a limited area. Some business especially in traditional handicrafts and wooden furniture industries, traditional fashion industries and food industries, have developed their business models toward global marketplaces. As provided in Figure 3, Indonesian SMEs has accounted for 15.7% of total export values or Rp182 trillion, with 9.3% annual growth in 2013. However, the SMEs export industry remains volatile, affected by demands from foreign countries. SMEs exporters experienced sharply negative growth of –8.9% and –11.1% in 2009 and 2012, respectively, caused by the global financial crisis and the slow recovery of demand from trade partners such as the People's Republic of China, Japan, and Europe (Asian Development Bank, 2015).

Figure 3: SMEs Export Activities, 2007-2013



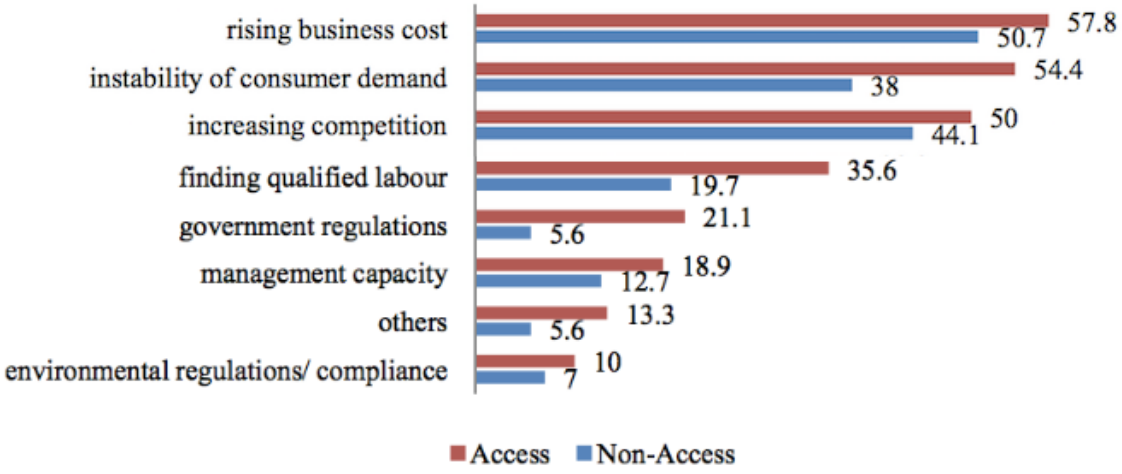
Source: Indonesian Ministry of Cooperatives and SMEs
cited by Asian Development Bank, 2015

Section 2. MAJOR CHALLENGES FOR SMES IN INDONESIA

SMEs in Indonesia face numerous issues in order for them to grow and expand. Indrayani et al. (n.d.) stated in their research that the common problem is, among others, (1) lack of good quality of human resources; (2) high price of raw material cost; (3) cash flow problem; (4) lack technical skills to promote the product in market; (5) insufficient government support; (6) still using traditional technology; and (7) difficulties in accessing bank facility, especially in rural areas. In brief, the SMEs problem in Indonesia can be divided into two major categories, the non-financial issues and financial issues.

2.2.1. SMEs Non-Financial Issues

Figure 4: Non Financing Challenges of SMEs (in%)



Source: Machmud and Huda, 2011

According to research by Machmud and Huda (2011), both SMEs with and without sufficient access to finance surprisingly have similar main issues as their obstacle to growth. More than 50% express that the rising of business cost as their biggest problem to growth. The remaining obstacle as reflected in Figure 5, are similar varying only in sequence between the SMEs with and without access to finance; (1) the instability of consumer demand, (2) the increasing competition, and (3) difficulties in finding qualified labors.

Due to high competition in market, SMEs should be able to promote their product well in market. However, SMEs in general do not have the resources to explore their own markets. Instead, they depend heavily on their trading partners for marketing of their products, either within the framework of local production networks and subcontracting relationships or orders from customers (Tambunan, 2006).

Although 97% of the Indonesian workforce employed by SMEs, the labor productivity is still 10 times lower than that of large enterprises. Further, in context of of regulations, a complicated and costly licensing process and excessive tax compliance costs are the main challenges faced by

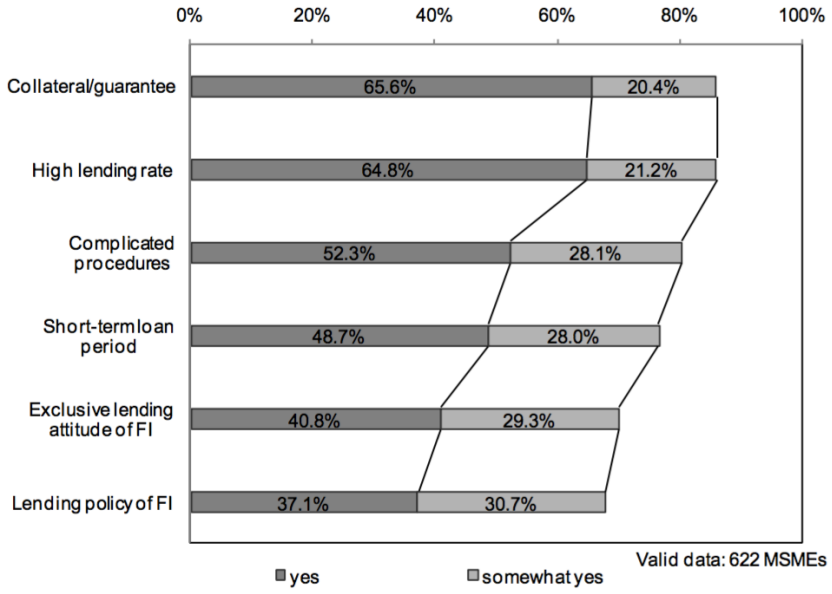
SMEs. These cumbersome and onerous business regulations and restrictions hamper an SME's business activities. (Deloitte, 2015a). In this context, SMEs are looking for a less regulated business environment, and are high concerned to lowering business costs and improving overall their labor productivity.

2.2.2. SMEs Financial Issues

In terms of financial source, it is reported that the majority of SME investments were financed by internal funds and only 6% of SMEs using bank loan as source of financing (Deloitte, 2015a). Since SMEs in Indonesia are mostly microenterprises that located in rural/backward areas, they had little knowledge of financial issues (Shinozaki, 2012). They depend on their own savings, money from relatives, and credit from informal lenders for financing their daily business operations (Tambunan, 2006). Since they relying on their internal fund, SMEs are in better positioned to avoid the serious shocks from the financial and banking crisis than large firms. However, low access to finance negatively affected SME survival and growth rates in general. (Shinozaki, 2012).

One of the challenges in SME financing is that their financial requirements are too large for microfinance, but are too small to be effectively served by corporate banking models. According to survey conducted in 2010 with 622[i] microenterprises in Indonesia by Shinozaki (2012), more than 60% of respondents implied that the collateral/ guarantee requirement and the high lending rate are the biggest barriers for SMEs to access the financing. SMEs still considered by commercial banks and financial institutions as risky and costly to serve, as a result SMEs are largely underserved when it comes to basic financial services. SMEs therefore require some form of external financing to cover financing needs.

Figure 5: Barriers to Financial Access



Source: Shinozaki, 2012

Information asymmetry is often quoted as a critical factor in SMEs' funding difficulties. Due to high costs for transactions and information collection, as well as immeasurable risks, financial institutions generally hesitate to finance SMEs. To mitigate such risks and reduce the cost burden, financial institutions oblige SMEs to fulfill steep collateral and guarantee requirements, and apply high interest rates. Not surprisingly, SMEs tend to regard these measures as serious supply-side barriers.

Shinozaki (2012) further emphasized that SMEs comprise a variety of firms in terms of sector, scale, and management style. Therefore, a one-size-fits-all approach to SME financing would be useless. The appropriate financing scheme differs by growth stage of the SME and by level of economic development of the host country. Since SMEs are a critical component of economic and social stability in a country, improving financial access for SMEs is expected to bring many benefits, including enhancing production quality, increasing new business opportunities, stimulating investment and consumption at the national level, and mobilizing excess corporate savings.

Section 3. INDONESIAN SMEs FINANCIAL SUPPORT SCHEME FROM GOVERNMENT

In order to address problems of accessing the financial support, Indonesian government created some credit programs which mainly focus on loan to SMEs which namely the Small Enterprises Development Program (KIK-*Kredit Investasi Kecil*/ KMKP-*Kredit Modal Kerja Permanen*), the Small Enterprises Credit Program (KUK-*Kredit Usaha Kecil*), and the Micro Credit Loan Program (KUR – *Kredit Usaha Rakyat*).

2.3.1 The Small Enterprises Development Program (KIK/KMKP)

This program was established in 1973 where government provide the loan interest subsidy for small enterprises owned by the local Indonesian people (called *pribumi*), including the cottage enterprises. The loan mainly purpose for the investment and working capital. The program managed by five state-owned commercial banks, the Indonesian Development Bank (Bapindo – *Bank Pembangunan Indonesia*), all regional development banks (BPD- *Bank Pembangunan Daerah*) and other 14 private banks. However, due to high default rate reaching of more than 27%, this credit programs were stopped in 1990.

2.3.2 The Small Enterprises Credit Program (KUK)

After failure in the first program (KIK/KMKP), in 1990 the government initiated new credit program called KUK. This program require all commercial banks in Indonesia to allocate 20% of their loans to SMEs for helping their investment and working capital. Unlike the KIK/KMKP program previously, the KUK was created to to assign interest at market rate rather than at a subsidized rate. However, repeating experience in KIK/KMKP program, KUK also did not perform successfully. The banks were having difficulties in satisfy the requirement of 20% loans to SME. It appeared that the banks tend to allocate more of their loans to consumption rather than the business purposes.

2.3.3 The Micro Credit Loan Program (KUR)

Under the Presidential Instruction Number 6 of 2007, the government then introduce the government guaranteed loan for micro and small enterprises called KUR. This program established to mitigate risks associated with SME finance and to enhance the bankability of SMEs that lack collateral. This scheme requires project or business activity as the principal collateral for the loan and is intended to provide working capital and investment credit of up to Rp500 million. The loan providers are commercial banks appointed by the government and there is no interest subsidy in this scheme.

Based on a report from the Coordinating Ministry for Economic Affairs (CMEA), it is claimed that during the period January-December 2010, six Indonesian banks (BRI, BNI, BTN, Bank 267 Mandiri, Bank Syariah Mandiri, and Bank Bukopin) and 13 regional development banks (BPD) disbursed approximately Rp17.23trillion to 1.437.650 debtors so it appears that the KUR program has sharply boosted microenterprises' access to banks. However, some banks are still facing several constraints in distributing the loans under the KUR scheme.

For instance, the first and second screening of guaranteed credits for SMEs may not be well organized due to the banks' expectation of credit risk mitigation through the guarantee, and the guarantee institution's insufficient human resources for screening loans. Other than that, the banks are often still demand additional collateral from prospective customers (i.e., 30% of total loan). Some applicants also found out to request loan for consumption purpose instead of financing their business. Therefore, in general, credit guarantees are considered a difficult business to operate profitably.

CHAPTER 3. INVASION OF FINTECH

SECTION 1. FINTECH EVOLUTION

In this present world of 21st century, technology has reached to each and every segment of people lives. As technology integration advances, the various working industries also has been revolutionized by it, and financial industry is no exception. The technology which enable financial solution is known as “FinTech” – short for “Financial Technology”. FinTech, according to the global report of PWC (2016), is a dynamic intersection of the financial services and technology sectors, where technology-focused start-ups and new market entrants innovate the products and services currently provided by the traditional financial service industry. In recent years, FinTech is gaining its momentum in all over the world. 2015 is considered as year of FinTech entered the mainstream when venture capital firm making enormous number of investment in FinTech.

Although most people just recently heard and get into deep discussion about FinTech, in fact, FinTech is not a new story in financial industry, since financial and technology have been connected one another over long time ago. There are three main eras of FinTech according to the study of FinTech by Douglas, Janos, and Ross (2015). Firstly, it is started with a period which characterize as the FinTech 1.0. during year 1866 to 1967 then followed by the FinTech 2.0 which started around year 1987 until 2008, and lastly counted since 2008, the FinTech 3.0.

3.1.1 FinTech 1.0 (1866-1967)

In this period of time, the development of digital technology for communications and processing of transactions increasingly transformed finance from an analogue to a digital industry. The concrete historical example for such correlation are divided further below.

1. Before 19th Century – the earliest example is in the context of Mesopotamia where written records evidence for financial transaction, followed by double entry accounting which also another technology basis to a modern economy emerged from the intertwined evolution of finance and trade in the late Middle Ages and the Renaissance.

2. Late 19th Century – the first age of financial globalization has started until the First World War, where the telegraph, railroads, canals and steamships underpinned financial interlinkages across borders, allowing rapid transmission of financial information, transactions and payments around the world.

3. Early post-war period – the innovation of the code-breaking tools were developed commercially into early computers by firms such as International Business Machines (IBM), and the handheld financial calculator was first produced by Texas Instruments in 1967. One of important development in financial industry is occurred during this time, known as credit cards, which initiated by the Americans.

3.1.2 FinTech 2.0 (1967-2008)

The beginning of FinTech 2.0 is marked by the launch of the first ATM by Barclays in UK on 1967. Followed by the establishment of NASDAQ in US on 1971 which transform the physical trading to fully electronic trading of securities. In consumer area, online banking was firstly introduced in the UK in 1983 by the Bank of Scotland which connecting between the television set and telephone to send transfers and pay bills[ii]. By the end of 1980s, financial services had become largely a digital industry, based on electronic transactions between financial institutions, financial market participants and customers around the world.

Another important momentum of FinTech 2.0 was the application for the Internet of Things (IoT)[iii]. The emergence of the internet in financial industry is started in the beginning of 1995 when Wells Fargo used the World Wide Web (WWW) to provide the online account checking and then followed in another decade later, the first direct banks without physical branches begin to offer their online services (ie., ING Direct, HSBC Direct), PC Financial, eTrade Bank) (Yodlee, 2012).

As can be seen from the historical event mentioned earlier, financial institution have increased their usage of technology in their operations significantly from time to time. Another example which evidence the urge of utilizing technology in financial institution is a fact that huge number of people hired as technology specialist in mega bank's workforce such as, Goldmann Sachs, Morgan Stanley, JP Morgan, Citigroup and Bank of America. It is even reported by Business Insider[iv] that around 9,000

workers in Goldmann Sachs are engineers and programmers which number counted more than programmers and engineers working on Facebook, Twitter, or LinkedIn. Bank has apparently made numerous investments in technology and financial services in the post crisis years. In short, it appears that the era of FinTech 2.0 is limited by the usage of technology innovation by the licensed financial institutions

3.1.3 FinTech 3.0 (2008 - present)

The transition of FinTech 2.0 to FinTech 3.0 happen during 2008, when new start-ups and established technology firms (categorized as non-banking firms) start to deliver financial products and services directly to consumer in public. There are different backgrounds as to what trigger the FinTech 3.0 to be born in economic category wise. In developed countries where countries are more industrialized and have higher per capita income levels, the FinTech 3.0 is driven by public expectations and demands, the movement of technology firms into the financial industry and also political demands for a more diversified banking system. However, in developing countries, particularly in Asia, Fintech 3.0 has been driven by the needs of development and the inefficiencies in the existing financial system, combined with the rapid introduction and reach of new technology, particularly mobile communications.

In 2015, innovations in banking took center stage in the FinTech space. Across the world, investors were drawn to the potential of FinTech firms, not only as a disruptor to big banks, but as an enabler for big banks to kick-start their own innovation instead (KPMG, 2016). The funding of FinTech start-ups according to PWC (2016), has reached US$12.2bn in 2015.

Section 2. PRODUCTS OF FINTECH

The term of “FinTech” that referred to, and elaborated further, in this research is limited for the FinTech 3.0, which innovated by non- traditional financial institution. Many financial experts predict that the explosion in the number of FinTech companies might affect some parts of existing traditional financial sector, mainly in consumer banking, fund transfer, and payments. It remains under debate as to whether or not the FinTech will disrupt most of sector in traditional financial

services.

In order to see the potential of disruptor by the FinTechs, firstly it is important to have understanding on what kind of financial services mainly offered by the the FinTechs. Based on the survey[v] conducted by Gulamhuseinwala, Thomas, and Steven (2015), it is discovered that there are approximately 10 most used FinTechs services currently available in the industry which can be categorized further into four major categories as set out below.

Table 3: FinTech Products

Savings and Investments	Money Transfer and Payments	Borrowing	Insurance
1. Peer-to-peer (marketplace) platforms for investments 2. Equity or rewards crowdfunding 3. Online investment advice and investments 4. Online budgeting and financial planning 5. Online stockbroking or spread betting	6. Online foreign exchange 7. Overseas remittances 8. Non-banks to transfer money	9. Borrowing using peer-to-peer platforms	10. Health premium aggregators or car insurance using telematics intended to lower premiums

Source: E&Y Journal of Financial Perspectives: Fintech, 2015

3.2.1 The Online Platform-based Alternative Financing Activities

4.2.4.1. Crowdfunding

Crowdfunding is one of new model of investment which potentially the most disruptive for traditional financial industry (Terry, Debra and Tina, 2015). According to Gaskell from Forbes, crowdfunding generated an estimated $2.1 billion in investment for startups in 2015, and that is expected to grow considerably in 2016.

Crowdfunding is an emerging trend where entrepreneurs raise capitals from the community to contribute in completing their project. There are mainly two types of crowdfunding, known as rewards-based crowdfunding and equity-based crowdfunding. Rewards-based crowdfunding platforms allow entrepreneurs to raise funds from the community as investor in exchange for their tangible products or service, without incurring debt or sacrificing equity (Johnston, 2015). Therefore, any investment in a rewards-based crowdfunding project even the project turns into a huge financial success, the investor will not receive any of the profits. Two of the most popular rewards-based crowdfunding sites are KickStarter and IndieGogo (Crowdability, 2016).

Meanwhile, in equity-based crowdfunding, the company issues equity – shares of company stock – to participating investors on a proportional basis. Therefore, when a successful company is sold to another firm or launches an IPO, the investor may receive a substantial return on their investment. On the other hand, in unsuccessful case, the investor may stand to lose part or all of their investment. AngeList is one example of the most established equity-based crowdfunding platform (Brian, n.d).

4.2.4.2. PP2P L2P Lending Platform

According to World Economic Forum (2015), since the first platform launched, the P2P lending has become a global market with a multitude of different business models and high-projected future growth rates. The peer-to-peer (P2P) platform generate revenue from interest management in addition to the loan management. However, the loan management is considered most attractive service and therefore generate revenue the most from this financing business model.

Generally, marketplace lending refers to the practice of lending money to borrowers without going through a traditional financial intermediary such as a bank. These marketplaces have benefitted from low interest rates and low default rates during the economic recovery along with the relatively less availability of consumer credit. Their efficient cost structure and regulatory advantage allow for interest rate arbitrage while they have also improved on the frictions in the existing lending processes (Terry, Debra and Tina, 2015).

In addition, Terry, Debra and Tina (2015) also point out some factors which have enabled the growth of P2P lending in FinTech industry, among others:

1. **Favorable macro environment**. The marketplace lending model was born as a direct result of tightened regulation stemming from the financial crisis. Since then, a low interest rate environment and historically low delinquencies for consumer loans have attracted inventors searching for yield, therefore amassing years of data supporting credit models. However, this environment has also avoided any real stress testing of the model.
2. **Changing demographics and consumer behavior**. Millennials are reaching the age of financial independence and are increasingly in need of financial services such as lending. 14% of Millennial small business owners are already using alternative, non-bank financing, according to a Bank of America survey.
3. **Data, technology, and automation driving cost advantage and ease of use**. The availability of data on an individual loan basis and the technology platform of many of these lenders give them the ability to create a robust credit model, offer a quick loan application, and, relative to traditional lending, approve or reject applications nearly instantaneously. The data advantage of the marketplace lenders stems from three sources: (1) the online-only data such as IP address and current and historical browsing patterns on the website, (2) real time credit monitoring through the use of social platforms, and (3) tens of thousands of loan performance data at the individual loans level, instead of by tranche. Individual loan-level performance data allows the marketplace lenders to build credit models across a much greater variety of factors that cannot be done with tranche-level performance data alone.
4. **Strong network effects and cost advantage drive attractive unit economics**. As a result of the strong network effects and technology-enabled cost advantage, these online lenders can target smaller loans in an economically favorable way, enabling them to serve a generally under-banked segment of the market.
5. **Regulatory advantage**. Because the majority of these lenders operate on a marketplace model and do not take traditional credit risk, they can operate with capital efficiency with no

capital requirements, automatically matched assets and liabilities, and lower regulatory overhead costs. Further, they are not currently directly regulated by the financial bureau, allowing greater flexibility in offering different rates to different types of borrowers, thereby creating additional efficiencies in the marketplace.

Due to the above reason, P2P lending industry has attracted investment from various capital operators including micro-finance, guarantee, venture capital and publicly listed companies, banks and even local governments. It could provide real finance solution for some sectors which underserviced by the banks.

The unsecured lending is the most common form of marketplace lending to date. As such, no collateral is required. Thus, as reported by the World Economic Forum (2015), small businesses benefit the most from this, particularly in the service sector mainly because often such businesses have rather stable cash flows but no tangible collateral that banks could lend against. The P2P lending also applies innovative credit assessment models which semi-automated and leverage nontraditional data points which allows for assessing credit risk where banks have traditionally not been able to do so, especially in markets with limited credit bureau information. However, this situation also trigger potential risk accumulated in P2P industry due to such deficient internal management and loopholes in existing law and regulations (Lufax, n.d.)

There are two types of P2P lending namely P2P consumer lending and P2P business lending. Main factor which distinguish between two is the funding mechanism and the financing purposes (Zhang, et al., 2015).

P2P consumer lending - In this model, individual borrowers acquire mostly unsecured personal loans from a number of other individual lenders (often lending a small amount each) through an online P2P "marketplace". This model of alternative finance offers access to comparatively *low-cost consumer credit for borrowers* (often with prime credit ratings) and *competitive interest rates (in contrast to bank savings) to lenders* and often has the benefit of combining efficiency, speed and a relatively low-risk problem.

P2P business lending – this model is a relatively new alternative finance model in Europe but is

developing rapidly in a number of key markets. It allows predominately small and medium-sized enterprises (SMEs) to obtain growth and working capital directly from a pool of online investors (both individual and institutional), bypassing a sometimes prolonged and uncertain bank-lending processes. For many SMEs, the speed with which they are able to obtain business loans, the often more flexible and attractive terms of financing (e.g., no penalty for early repayments on many platforms), as well as transparency and ease of use, are determining factors that make P2P business lending a viable business funding alternative.

Some example of success deal of P2P lending is the IPO of LendingClub and its notable SME financing partnership with Google, Alibaba and a growing trend of institutional lending. Crowdfunding and P2P lending exist as well-known financial alternatives model that could help entrepreneurs of small business company to boost up and expand the business. In practice, some people are not really able to identify the basic difference between crowdfunding model and P2P lending platform. This is very important, especially for entrepreneurs, to understand which financing models fits better for the business. Both models are having similarities but also different implications in terms of cash flows and profitability concern. Usually the brand new start up business will look for crowdfunding because they do not need current business cash flow or profitability in order to raise the fund. The fund raising will purely depends on the idea and business model, so as long as the investor believe in it, the fund can be obtained. On the other hand, in P2P lending, investor really concern to see the detailed plan, business history, financial statements (in average within the past 2 years), profitability and any information related to the business. However, when the money has been invested in, on crowdfunding model the regular reporting might require by the investors since they want to keep track on how the business is being run, meanwhile in P2P lending, the investors will not get involvement as long as the loan repaid on time (Lee, 2015). As mentioned in Section 3.2.1.1 above, the investor in crowdfunding is offered with shares or position at the firm so that is the reason why the investor will remain involve in day to day business.

Section 3. ROLE OF FINTECH TO SUPPORT THE GROWTH OF SMES IN DEVELOPING COUNTRIES (CASE STUDY OF FINTECH INDUSTRY IN CHINA)

3.3.1 History of Financial Market in China

Before 2000, the Chinese financial industry was lagging behind those of many other countries, and the financial infrastructure was insufficient, and commerce-related fraud was commonplace. In addition, China's technical capability with regard to information technology (IT) was low, and the key hardware and software used in major banking systems and e-commerce applications came mostly from foreign companies (Yongowoon & Dong-Hee, 2015).

Local internet companies just launched various e-commerce-related businesses in the end of 1990s. Alibaba, now the biggest e-commerce company in China, was established in 1999. Others were 360Buy (online retailer, now Jindong Mall), Dangdang (online book store), and EachNet (online auction platform). However, China's e-commerce had been involving only information flow and small and medium-sized enterprises (SMEs) could get hardly access to the bank transaction system. Alibaba then started to turn its focus to the business area of small and medium-sized enterprises (SMEs) in China (Yongowoon & Dong-Hee, 2015).

In 2003, Alibaba decided to start its customer-to-customer (C2C) marketplace called Taobao. It operated under the same business model as eBay, providing an online marketplace, payment solutions, and technological infrastructures to match buyers and sellers. However, unlike eBay, Alibaba was merely an e-commerce site for SMEs conducting business online. Moreover in 2005, Alibaba introduced an online escrow payment system, Alipay, that allowed buyers to wire money from their bank accounts to Alibaba. This method was perceived by many Chinese customers to reduce the settlement risk; it ensured that goods were delivered and payments were made between sellers and buyers. Acting like a temporary bank between buyers and sellers, Alipay was a key driver for Taobao's exponential growth.

Since 2007, the barriers to entry into China's financial system have been bypassed by

private individuals and internet finance companies delivering directly to the public and SMEs more than RMB251billion of credit in 2014 with total 1,575 numbers of P2P platforms in the same year.

Figure 6: Volumes of P2P lending in China (in RMB billion)

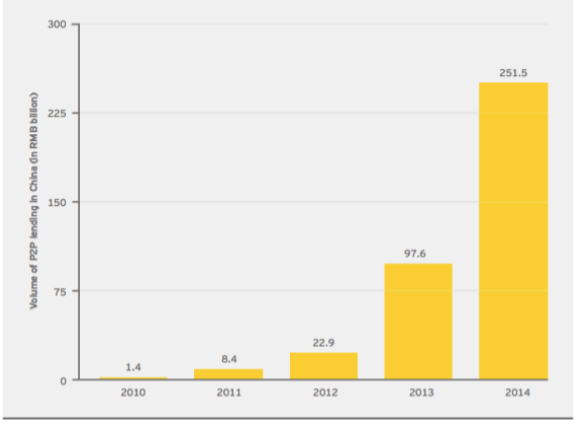
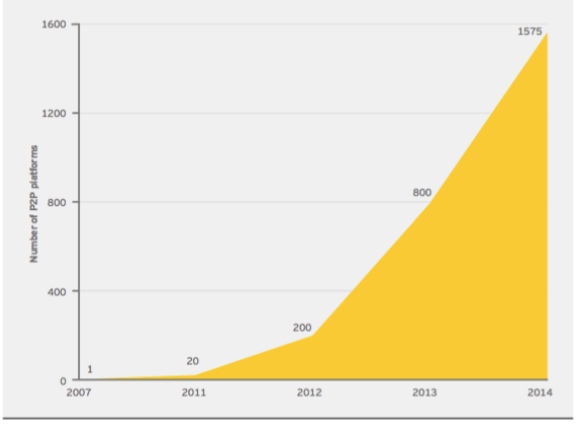


Figure 7: Number of P2P Platforms in China by end of 2014



Source: E&Y Journal of Financial Perspectives: Fintech, 2015

According to report from Accenture (2014), Alibaba then entered into a partnership with the Industrial and Commercial Bank of China and the China Construction Bank in 2009 to help facilitate loans to domestic small business customers in China. Given that 85% of all loans went to other state-owned enterprises (SOEs), leaving little for private companies and particularly SMEs. Alibaba's strategy represented a potentially effective way of forming an actor network with SMEs. SMEs became interested in the solution proposed by Alibaba because Alibaba's interest was not different from those of them. In 2010, Alibaba launched a specialized company serving the SMEs lending segment. Alibaba Alibaba extended its finance business through alliances with banks, insurance companies, funds, securities companies, and so forth. Through these alliances, it created multiple new agreements that have yielded a huge market impact. Alibaba, which started as an e-commerce company, is now one of the biggest FinTech companies in the world. Alibaba has created 2.87 million direct and indirect job opportunities, and providing over 400,000 SMEs with loans ranging from $3000 to $5000 (Arner, Janos, and Ross, 2015).

Other than Alibaba, actually there are some companies which also focus on lending to small business in China. PPDAI was the first online P2P platform in China established by former Microsoft Corp.'s engineer. PPDAI's primary focus is to lend to online small businesses that sell

through Alibaba with over 80% of all loans going to small businesses. PPDAI uses online data about the small businesses like seller ratings, user ratings, and social networking presence to determine the credit quality of their borrowers (Jason, 2014). PPDAI is facing increased competition from Alibaba which has created its own SME financing arm. There is also RenRenDai which one of the largest and fastest growing P2P lending platforms in China. Similar to PPDAI, RenRenDai offers loan to consumers and small businesses as well. The growth of the company is huge. They grew over 800% in 2012 and grew 342% in 2013.

In 2011, PBC began issuing licenses to qualified third-party online payment platforms to conduct electronic payments, after announcing the program in 2010. The licenses covered Internet payment, mobile phone payment, and bank card acquiring service. In due course, TPP services shifted from a single-platform to a cross- platform service, in partnership with a variety of players, such as mobile platforms, SNSs, and pre-paid cards both online and offline. TPP companies were well qualified to develop various types of innovative business models and services with other industry players.

In 2014, following the government's approval, a total of 250 companies in China received a payment license, including 90 for online payment and 37 for mobile phone payment with Alibaba as the frontrunner. During this time, more and more Chinese companies inspired by Alibaba's success established the investment platform and the pace of FinTech innovation has been wildly increasing.

In July 2015, China's peer-to-peer (P2P) lending platforms counted 2,136, with settlements of about RMB82.5 billion transactions in that single month, making it the country with the most P2P platforms in the world. As the sector went from one platform in 2007 to more than an estimated 2,000 platforms currently It is also reported the platform has delivered directly to the public and SMEs more than RMB251 billion of credit in 2014. (Douglas and Janos, 2015).

3.3.2 Growth Factor of China P2P Lending Industry

The high usage of P2P lending services in China is driven by the rapid Chinese adoption of new technologies which already reaching through the rural areas. As cited by Emarketer (2015), China Internet Network Information Center (CNNIC) reported that internet penetration in China's

rural areas nearly quadrupled between 2007 and 2014. It also rose dramatically in urban areas during the same time period, though the rate of penetration in cities less than tripled.

Table: 4 Internet User Penetration in China, by Geographic Locale, 2007-2014 (% of population)

	Urban	Rural
2007	26.0%	7.4%
2008	33.9%	12.3%
2009	43.0%	15.5%
2010	49.6%	18.6%
2011	54.6%	20.7%
2012	57.4%	24.2%
2013	60.3%	28.1%
2014	62.8%	28.8%

Source: China Internet Network Information Center cited by Emarketer, 2015

As stated by Shrader and Eric (2014), there are more than 1.15 billion mobile phones in China, which has also become the largest global market for smartphones. It is estimated that in China's biggest cities, smartphone penetration is approaching 50 percent and nearly half of China's mobile subscribers live in rural areas. As of 2013, there are 624 million internet users (45% of the total population) and 28.9% of China's population had 3G and 4G connections. However, despite of enormous number of population who acquire mobile technology in China, there are 432 million population in China who do not have any bank account, which represent 36% of population (Douglas, et.al., 2015). The total of physical bank also relatively low compare to the number of population in China itself, unlike in the western country such as USA and UK. Chinese unbanked populations may have a comparative advantage over many unbanked in the world in its ease of access to and rapid adoption of technology.

This mismatch situation between the technology readiness and the number of physical bank in china provides the high opportunity of penetration in FinTech industry in China. China's credit market also has suffered from allocation inefficiencies that affect its SMEs. Meanwhile, SMEs represent 80% of the economic output in China (Douglas and Janos, 2015). The penetration of P2P lending platform in China therefore is considered as one perfect solution to address the issue of

credit facility in China.

According to white paper issued by Lufax[vi] (n.d.), the P2P platforms in China generate most revenues through loan management, interest management and other value-added services. However, the loan management charges account for the largest proportion of total platform revenues (over 70%). Not factoring in expenses they incurred in compensating bad debts, gross margin in the P2P lending business is pretty high and may even exceed 20% in some cases This is also why the P2P industry has attracted investment from various capital operators including micro-finance, guarantee, venture capital and publicly listed companies, banks and even local governments, and why the number of P2P platforms in China has gone through explosive increases in recent years.

3.3.2.1. Characteristic of P2P Lending Platforms Users in China

In October 2015, the Association of Chartered Certified Accountants (ACCA), conducting survey on the China's P2P lending market which surveyed over 935 borrowers and lenders as user of one of leading P2P platform in China, PPDAI[vii]. The findings are divided into four categories of users:

(1) The individual borrowers (342 respondents)

52% of the individual borrowers reported a low-income range and 63% worked in private business (but does not reveal how many of these respondents were employees or business owners). 51% purpose of the loan made by the individual borrowers is to accumulate their credit worthiness[viii] and only 7% utilize the loan for working capital.

(2) The individual lenders (515 respondents)

Lenders reported to be more highly educated than borrowers. 56% having completed the university-level degrees. Most of lenders stated that they were carrying out investment on their own behalf. As for the reason for investing through PPDAI, 65% claim they want to get higher returns of investment compare to the bank interest rate. About 10% of lenders make investment to support the SME financing.

(3) The business borrowers (35 respondents)

The findings showed that business borrowers tend to have higher incomes than the individual borrowers and have no previous experience of borrowing from other financial institution but they had some trade credit line[ix] with, for instance, AliFinance[x]. The largest proportion (40%) of the business borrowers are small and micro business. 74% of the business borrowers are tertiary educated, of these, 52% had completed college and 22% had university-level qualifications.

Their loan purpose is mainly for daily short-term cash flow and as for the common reason choosing the P2P platform for financing 87% responded because it has the low threshold and simple borrower audit process. Most of them also had a formal written business plan and most had financially trained or qualified person in charge of business finances.

(4) The dual borrower and lender (43 respondents)

Most dual borrowers and lenders had their own business enterprises. 27% reported that their business had been operating for between 5 and 10 years. Most reported a very low business sales revenue. The main reason for borrowing is similar as individual borrower, 77% responded to accumulated credit worthiness, and followed by meeting daily short-term cash flows needs.

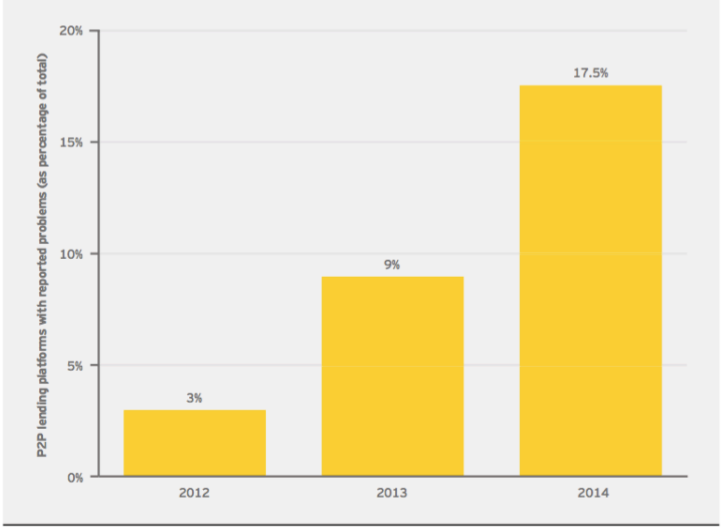
They pick P2P platform because bank loan usually has strict loan qualifications and shallow relationship with the banks.

3.3.1 FinTech Regulatory Framework in China for P2P Lending Platform

Regulators face a dilemma since SMEs are the main engine of economic growth in China today, and it seems that P2P lenders are almost the only financial institutions still willing to make loans to SMEs in China in the current economic climate. Therefore, the growth rate of P2P lending industry in China is unavoidably overwhelming. However, these recent years, there are also numerous cases of illegal financing, illegal fundraising, and fake investment occurred through P2P

lending platform in China. Since the existence of first P2P lending platform in 2007, until it has reached more than 1,500 platforms in 2014, there is no regulation directly govern this industry in China. The absence of formal regulation in P2P lending industry in China had the effect of removing any barriers to entry which allowed that platform operators, lenders, borrowers quickly to enter the market, and as a result, the P2P lending industry has grown significantly in China. However, it leads to increase the number of fraud and default P2P lending firms operated in China as the negative implication of the absence of regulation.

Figure 8: P2P lending platforms with reported problems (as percentage of total 1,575 platforms)



Source: E&Y Journal of Financial Perspectives: Fintech, 2015

Starting in mid-2014, Chinese regulators has increased the consultation activity to gradually consider the imposition of rules for P2P platforms in China, which will cover on regulatory capital, licensing obligations as well as better loan origination and credit scoring mechanisms so as to avoid excessive problems in P2P platform industry in China (Douglas and Janos, 2015). In 2015, the China Banking Regulatory Commission (CBRC) finally released the P2P lending regulations. However, whether or not the regulation is actually effective to address the issues on P2P platform, it is essential to know the problem related to the P2P platform before the issuance of the regulation.

Based on report by Lufax (n.d.), risks related to P2P lending platform in China are mainly, among others:

1. Risk related to the fund management. There is no escrow account set up in most P2P platform business. So basically funds of lenders and borrowers are directly credited from the account of P2P platform company which trigger higher risk of funds being abused, as well as risk of "self-financing" and "false financing". Only some P2P platforms engage certain banks to open the escrow account.
2. Risk related to credit checks. Many P2P platforms do not have specialized risk controls and credit check team. Therefore, there is a potential risk of bad debt prevention failures. The majority of them still have not set up standards for regularly assessing, tracking and disclosing the sources of funds for loan repayment on the part of fundraisers (borrowers). Hence, the investors do not have direct access or tools to judge and track the reliability of loan repayments they receive.
3. Operational risks. In a bid to increase liquidity for lenders by matching yields with loan maturities, many platforms develop capital pooling so impossible to track capital movements.
4. Information safety risk. Some P2P platforms – particularly those "missing" platforms – bought "semi-finished" websites directly from third-party companies developed with open source codes, and even outsourced website backend operations to third parties, resulting in exposure of company and user information. In the case of a website access technical issue, the resulting psychological impact on investors may spark a run on the platform due to information asymmetry.

China's government introduced the non-bank providers of online payments services regulation to address problems occurred in P2P lending industry in China on December 2015. The regulation will become effective as of 1 July 2016 (Jingui, 2016). However, China's government has previously released the first regulation in July 2015 regarding the guidelines on the promotion of the healthy development of internet finance (Internet Finance Guidelines) which also govern the P2P

lending therein.

As reported by ACCA (2015), some important highlight of the regulations are, among others:

1. minimum registered capital requirements will be imposed for internet finance companies;
2. capital pooling will not be allowed (only direct one-to-one lending allowed, no fund pools);
3. loan guarantees will not be allowed (on principle or interest); and
4. providers must have experienced management and credit-risk management teams.

In addition to the above highlights, Li (2016) also added some requirements for P2P platform providers, among others:

1. platform should register with local financial regulators and local regulators will rate and categorize platforms after displaying the information publicly;
2. platforms should report loan data to an online lending central database established by the central government;
3. platform should disclose the basic borrower information, loan information, and platform loan statistic publicly;
4. platforms should use fund custodianship services offered by qualified banking financial institutions; and
5. platforms should conduct annual third-party audits and submit the audit report to local regulators within four months of their fiscal year-ends,

and as for some restricted activities are among others:

1. conducting business offline at physical locations, with the exception collecting loan information, loan review, debt collections, and management of loan collateral as well as other risk management activities;
2. making investment decisions for investors, so any automated investing will be forbidden even if the investor grants permission to the platform;
3. using the platform for self-financing or financing of related-parties;
4. selling bank wealth management products, mutual funds, insurance annuities and other

financial products;

5. collaborating with other investment or brokerage businesses to bundle, sell or broker investment products, or directly making loans to borrowers, unless stated otherwise by applicable laws and regulations
6. Providing false loan information or create unrealistic return expectation; and
7. Facilitating loans for the purpose of making investments in the stock market.

From the above brief summary on the regulation, it seems to sufficiently address the recent problems occurred through the various illegal activity of P2P platform in China. The regulation most likely to promote risk management and establish much-needed ground rules to limit the prevalence of unsound practices and illegal activity which keep happening recently in the industry. China's regulators are more interested in controlling undesired activities rather than setting legal barriers to entry. Any violations on the platform activities will likely result in a complete shutdown of operations and possible prosecution by law enforcement. (Li, Spencer, 2016).

CHAPTER 4. FINTECH FOR SMES IN INDONESIA

Section 1. SMEs Adoption of Digital technology in Indonesia

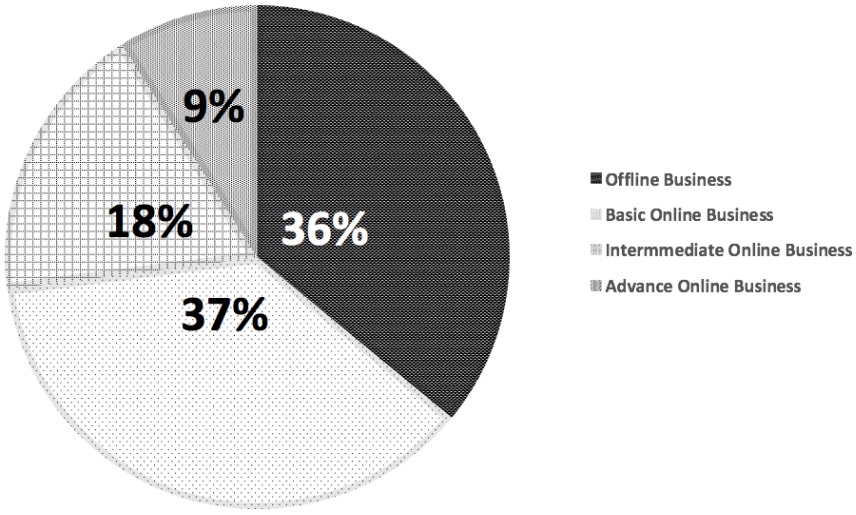
Internet technology has changed the supply chain by improving collaboration and efficiency, and adding value to products and firms. The rapid adoption of the internet as a commercial medium has motivated firms to experiment with innovative ways of marketing in cyberspace (Astuti and Reza, 2014). Technology can provide significant innovation opportunities for SMEs' businesses. Innovation is the process of developing and implementing new or improved products, services, processes, business models or organizational practices. Indonesian SMEs that seize the opportunity to innovate are likely to grow, those that do not will remain behind. The growth opportunities associated with SMEs' innovation are likely to be important in facilitating broader economic growth and poverty reduction across Indonesia in future years (Deloitte, 2015c).

Deloitte (2015b) claimed that the greater use of digital technologies such as social media, broadband and e-commerce can deliver significant benefits for SMEs, among others, up to 80% higher growth in business revenue since there would be high access to new consumers through the technology, being one-and-a-half times more likely to increase employment, being 17 times more likely to be innovative, and more competitive internationally. SMEs with basic online capabilities derived 6% more of their revenue from international customers than offline SMEs. Therefore, there are indeed significant benefit for SMEs if they went digital. For the Indonesian economy, boosting digital technology engagement among Indonesia's SMEs could increase the country's annual economic growth by 2%. By such growth, Indonesia would be on track to becoming a middle-income country by 2025.

According to the research by Deloitte (2015b), only minority of Indonesian SMEs (18%) have intermediate engagement in digital technologies by using websites and social media and another 9% having advanced engagement with e-commerce capabilities. 36% still doing offline with no broadband access, not owing computer or smartphone, and another 37% have only basic online

capabilities such as computer/smart phone or broadband access but no involvement in any social media or e-commerce.

Figure 9: Indonesian SMEs Digital Technology Involvement

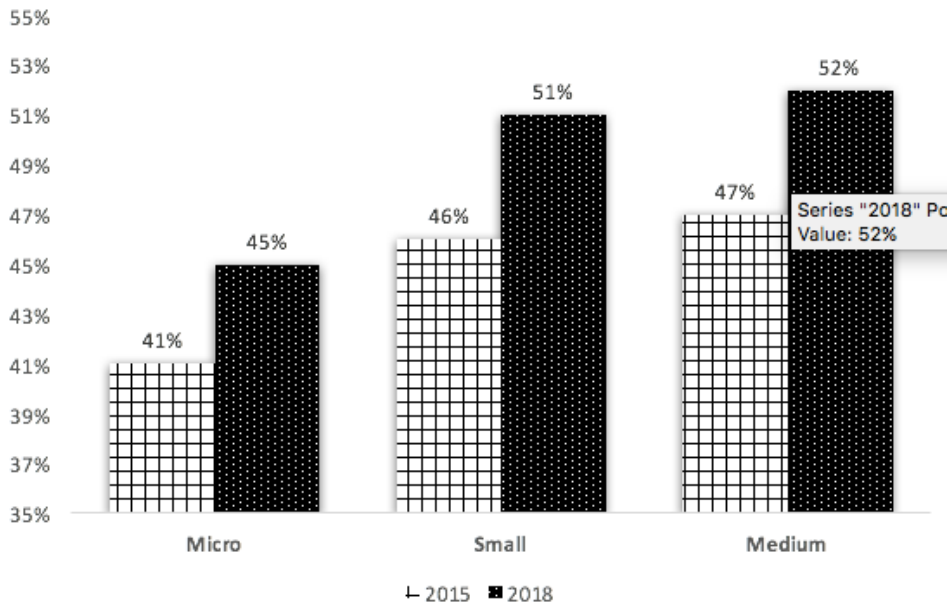


Source: Stancombe Research and Planning, Deloitte Access Economics, Cited by Deloitte 2015b

The majority of SMEs with lowest participation in technology is the microenterprises (58%) which located at rural areas, followed by some small enterprises (27%) and medium enterprises (14%). The SMEs in primary industry (agriculture, forestry, and fisheries) which consist of the highest number of SMEs in Indonesia appear to be the least involved in digital technology, with two third of them are still offline and less than 6% have the intermediate engagement in technology.

Although the usage of broadband by SMEs have increasing, the e-commerce capabilities and social media integration still very low. There are only 12% of SMEs that have basic e-commerce capability (online order processing), and only another 10% owing online payment system. Most of the spending of SMEs in Indonesia go to digital marketing to promote their product. They would spend around 42%-47% from their marketing budget in digital marketing, no matter the size of the firm.

Figure 10: Marketing Digital Expense of Indonesian SMEs in 2015 vs. 2018



Source: Stancombe Research and Planning, Deloitte Access Economics,
Cited by Deloitte 2015b

The main issues that faced by Indonesian SMEs to participate in digital technology is the minimum accessibility of finance and less option of the financing for SMEs. According to Machmud, Z. and A. Huda (2011), the demand for SMEs credit in Indonesia presents an increasing trend from time to time and in 2010 these represented about 20 percent of total demand for credit. Some commercial banks in Indonesia have entered the SME segment in order to enlarge their business. This recent development in the banking industry illustrates the efforts of commercial banks to improve their function as Indonesian SMEs credit suppliers. However, the development of credit demand from non-bank financial institutions in Indonesia is not well recorded and governed. In order to achieve the digital SMEs, it is important to expand the access to finance for SMEs, both from domestic and international source.

There has to be efforts and incentives from policy makers to assist SMEs to adopt new technology and cope up with market demand. In addition to the extension of access to finance, SMEs in in Indonesia also require real support from government such as:

1) Increasing broadband access. Existing internet access in Indonesia remains relatively expensive and slow. Increasing broadband access and the quality of service will encourage digital technology adoption by SMEs and improve performance of existing technologies.

2) Assisting all SMEs to be digital businesses. Many government agencies provide SME support programs, including those targeted at increasing SME digital engagement. But they are often overlapping and limited in scale.

3) Expanding e-payments. Improving trust in e-commerce payment platforms, increasing bankability of Indonesian consumers and businesses and expanding alternative payment systems will increase the volume of digital transactions.

4) Expanding e-government services. Government services delivered through online platforms are more cost effective and efficient. More online government services would build consumer confidence in online activities and services over time.

Section 2. FINTECH INDUSTRY IN INDONESIA

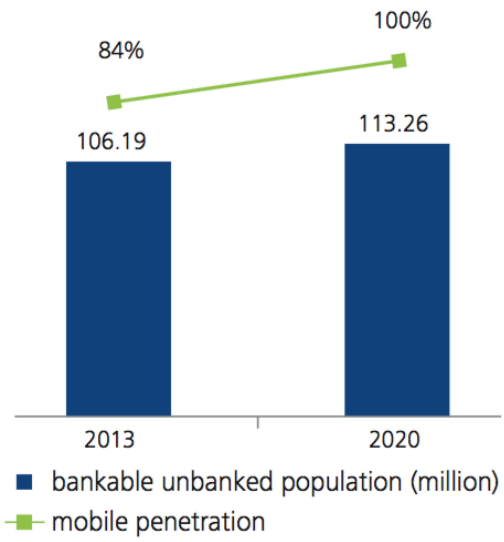
Considering financial sector undeniably has an important role for the country's economic growth, the Indonesian government is taking a particular interest in driving the FinTech industry in a responsible manner. As revealed by current Indonesian president, Mr. Joko Widodo, during the Indonesia E-Commerce Summit & Expo 2016, the government would give more attention and support to stimulate the development of FinTech start-up ecosystem in Indonesia. Moreover, it is also predicted that the market of FinTech in Indonesia is huge and will grow significantly during 2016 (Febriana, 2016).

The FinTech business that referred to hereinafter is the FinTech 3.0, which business is established by technology firms (non-banking financial institution) who deliver financial product and services directly to consumer in public.

4.2.1 Indonesia as Potential Market of FinTech Industry

Deloitte (2015d) reported that as of 2013, nearly 60% of the entire bankable population in Indonesia did not have a bank account. It is also projected that the total population of bankable unbanked will continue to grow and reach 113 million by 2020 and the mobile penetration will reach 100% by 2020. The entire market segment of over 113 million bankable unbanked empowered with mobile phones represents an untapped opportunity for FinTech industry.

Figure 11: Total bankable unbanked population and projected mobile penetration growth from 2013 to 2020



Source: Deloitte, 2015d

However, as the most populous country in south east Asia region, unlike the mobile penetration, the penetration of internet usage is considerably low, only 15.8% of the total population as of 2013. Meanwhile, the average of internet penetration in ASEAN countries is 35% (Deloitte, 2015c). The internet penetration also still heavily concentrated only in the larger cities where users are more likely to afford smartphones, whilst the remaining (approximately 85%) in the unbanked population in rural areas the internet users remains relatively low (Deloitte, 2015d).

Commercial banks dominate the Indonesian financial sector but they serve a relatively small proportion of households and their financial services are heavily skewed towards urban areas. According to the World Bank, about 40% of the unbanked poor are creditworthy by micro-finance institutions' standards. Of the unbanked poor who seek credit, about half are deemed to be too small

to be commercially viable, given that bank‘s current commercial standards. The Indonesian commercial banks

have quite a wide regional reach, but they do not reach deeply into the poorer strata of Indonesian society (IFC, n.d.). The high unbanked population in Indonesia with minimum access to financial services, such population will require the alternative financial services to fulfil their financial needs.

Moreover, as explained in Chapter 2 about the SMEs financial issues in Indonesia, the loan market have suffered from allocation credit inefficiencies to the SMEs in Indonesia which mostly consist of microenterprises that located in rural/backward. Deloitte (2015a) reported that only 6% of SMEs using bank loan as source of financing. This misallocation of capital has important implications, since SMEs contributes to 59% of the total GDP of Indonesia while bank loans only make up of 6% of SME funding sources. The integration of FinTech ecosystem to Indonesian SMEs may become one of the most powerful tools to stimulate the sustainable economic growth in the future in Indonesia.

Considering on the above facts, FinTech industry will gain traction in Indonesian mainly due to the fact that the current financial institution in Indonesia have not been able to solve the existing financial problems through the traditional banking solutions, particularly for SMEs that has been underserviced by the large banks. Other than that, the high penetration of mobile users and large unbanked population in Indonesia seems to interest the Indonesian entrepreneurs as they believe Indonesia could be a potential FinTech market where they could offer alternative financial services beyond traditional banks to such marketplace.

4.2.1. Current Situation of the FinTech Industry in Indonesia

4.2.4.3. About the Regulation of the Indonesian FinTech Firms

In this fast-paced technological innovation environment world, the financial evolution seems to run ahead of the regulation. By looking at the high potential growth of FinTech industry in Indonesia, the effective financial regulation is essential for the future success of the FinTech business in Indonesia. At this early stage, there exist no specific regulation that directly made for FinTech

business industry and as a result of the absence of the regulation FinTech business player has less barrier to quickly enter the market.

The business scope of FinTech firms appear to overlap between technology business, which govern under the supervision of the Minister of Communications and Information (Menteri Komunikasi dan Informasi - Kominfo), and financial services which govern by the Financial Service Agency (Otoritas Jasa Keuangan - OJK) . Therefore, FinTech business does not clearly fall under purview of any single authority and thus, need new regulation that work out in between those two authorities. Both Kominfo and OJK, are still working on draft regulation for FinTech firms and the new regulation are expected to be issued by end of 2016 at the latest. For such preparation, they start actively consult with authorities from other countries, in China, Australia, Singapore, and Malaysia to get an idea of the industry ecosystem in regional level (CNN Indonesia, 2016).

As of today, the FinTech companies should get endorsement from Bank of Indonesia and get license to enter into settlement services . According to Deumoly F Pardede as Deputy Commissioner of Non-Bank Financial Institutions of OJK, the FinTech firms still able to run their business in Indonesia and they could later adjust the business after the new regulation has been enacted (Dealstreetasia, 2016).

Active support from the regulators and government is critically important for the growth of the FinTech industry in Indonesia. Regulating bodies can create a positive and cooperative environment that promotes innovative solutions. However, at the same time, they should ensure the protection of individuals and systemic viability by installing appropriate regulatory frameworks in the existing financial system. It is also important necessity to have a point of contact at regulatory bodies so every FinTech players know they have a person to talk to and align with, especially after the FinTech regulatory framework has been issued and require adjustment to their business model.

4.2.4.4. About the Organization of the Indonesian FinTech Firms

Other than supportive action from regulators and governments, FinTech firms must also contribute their role to create a cooperative environment. Regulators often criticize the fragmentation

of the FinTech landscape, for example, as to whom should they make contact with to discuss about specific FinTech sector. In the UK, the UK P2P Finance Association (P2PFA) has become a credible player and conversation partner for public officials. The P2PFA represents over 90% of the peer-to-peer lending market in the UK, including consumer lending, business lending and invoice finance (World Economic Forum, 2015).

On September 17, 2015 in Jakarta, during the InvestDay 2015 event, which was also attended by the Minister of Coordinating Economics, Dr. Darmin Nasution and the Regional Director of IFC-World Bank, Mr. Ivan Mortimer-Schutts, the Association of Indonesian FinTech (Asosiasi Fintech Indonesia - FTI) was established. FTI is initiated by several major FinTech firms and banking corporations namely, Bareksa, Kejora, CekAja, Doku, Bank Mandiri, Veritrans and Kartuku.

Any FinTech companies and financial institution that have expertise and interest in the field of financial technology may join as members of the FTI. However, as of now, there is no information publicly provided as to how many FinTech firms are currently exist in Indonesia, including the information of all members who join the FTI other than mentioned earlier.

According to the Article of Association of FTI which legally made before Aryanti Artisari, SH, Mkn, Indonesian Notary, FTI is created to support the FinTech industry in Indonesia by building a positive business environment and promoting FinTech industry as catalyst for the application of technology, improved access to finance, economic growth and wealth generation. FTI works to advance a technology-centric financial services ecosystem for Indonesian by Indonesian firms. Moreoever, FTI is invited regularly by the regulator to provide some input and advice on industrial policy related to FinTech. It will serve as forum for the FinTech start-ups, banks, insurance companies, venture capitalists, as well as stakeholders from both the government and non-government side.

More alignment and cooperation is required to facilitate effective dialogue between the FinTech market players and the authorities in order to develop best practice, and as such, it is arguably a right step to establish FTI as credible FinTech industry organization in Indonesia.

Section 3. FINTECH AS SOLUTIONS OF INDONESIAN SMES ALTERNATIVE LENDING: LEARNING FROM CHINA'S P2P LENDING MARKET ENVIRONMENT

4.3.1 The Needs of Alternative Financing for SMEs in China and Indonesia

It is undeniable that finance is major component of every firm's business activity. Study from World Economic Forum (2015) reveals that limited access to finance is one of the most cited issues for businesses in developing countries, including in Indonesia. As already described, Indonesian market has extremely high number of micro-enterprises, accounted 90% of total SMEs in Indonesia located in rural/backward areas which also have high limitation on financial access. From survey towards SMEs in Indonesia, Shinozaki (2012) found out that the collateral requirement and the high lending rate are the biggest barriers for SMEs in Indonesia to obtain financing, as a result, SMEs in Indonesia largely underserved when it comes to financial services. Deloitte (2015a) also emphasize from its report that majority of Indonesian SMEs require financing from combination on of formal and informal channels.

In credit market, China also have suffered from allocation inefficiencies that particularly affect its SMEs. It has a number of structural imbalances created huge gap in SMEs credit (estimated to be more than US$700 billion), and surplus demand for return-seeking investable assets (estimated to be more than US$2 trillion) (Ekberg, et.al., 2016). The misallocation of capital for SMEs appears to serious implication on China's economic growth considering the SMEs represent 80% of economic output of the country (Arner and Janos. 2015), in which, this situation similarly experienced by SMEs in Indonesia. However, since the first appearance of P2P lending platform in year 2007 until 2015, P2P lending platform has performed an important allocation role, especially for SMEs that facing constrain of credit access in China (Douglas and Janos, 2015). Considering there are about 60 million micro-entrepreneurs in China, with 200 million rural poor and remains unbanked (Renton, 2013, Douglas et.al., 2015), it is indeed huge market opportunity for P2P lending business. Alibaba Group, one of famous private Chinese internet companies, starting this business model to focus on serving SMEs in China by alternative financing through the P2P lending platform and another P2P platform companies in China such as Lufax, Dianrong, RenRenDai, also similarly

focus on lending to SMEs in China and reported to have huge growth.

P2P lending model has attracted SMEs since no collateral is required in order for them to obtain required amount of working capital. SMEs benefit the most from this unsecured lending model since collateral is mainly implied by SMEs as one of the biggest barrier to access the financing from the traditional bank. Moreover, another attractive point for SMEs are the simplicity of lending process through the P2P lending platform. Unlike lending process with banks which require lots of paperwork documentation and long screening process resulting high interest rate, P2P lending platform offers easier application process on paperless basis, faster approval and cash disbursement. This is due to innovating credit scoring models used by the P2P lending, which models are easily data-driven, employ semi-automated risk assessment methods and leverage nontraditional data points (World Economic Forum, 2015). Lastly, P2P lending could provide more competitive rate and give no penalty for early repayment.

The FinTech's industry in Indonesia is indeed still in early stage, and although there is no particular report on the total current P2P lending platform in Indonesia, there are some P2P lending already exist, such as, Modalku, Amartha, Crowdo, InvesTree, Mekar, and KoinWorks, which aiming to serve the SMEs in Indonesia. The number of P2P firms are predicted to keep growing, since there is huge potential of market opportunity in demand of Indonesian SMEs alternative lending through FinTech company amounted up to US$54 billion by 2020 (Ekberg, et.al., 2016).

4.3.1. Digital Technology Adaption of SMEs in China vs. Indonesia

Considering both China and Indonesia are highly populated countries (China listed as No.1 and Indonesia listed as No.4 of most populous countries in the world), the mobile phone are expectedly also high demand in both market. However, although mobile phone penetration in both countries reaching more than 30%, the internet penetration rate is not occurring in the same manner. The internet penetration in Indonesia is still way below the global average, only 15% of total population and it is also concentrated mainly in urban area, meanwhile, in China, the internet penetration is reaching nearly half of its population and the penetration in the rural areas rose

dramatically.

The adoption level of digital technology is highly related on the success rate of making FinTech services (P2P lending platform) a solution for alternative financing of SMEs. Current issue to deal with on limited access to internet in rural areas in Indonesia should immediately address in order for SMEs could having benefit of FinTech services for their business. Government should also provide support to enable SMEs go digital by providing sufficient technology infrastructure, for example, increasing the broadband access and quality of service, particularly in rural areas of Indonesia.

4.3.3 Knowledge of SMEs on Financial Literacy and FinTech Industry in China vs. Indonesia

Research study conducted by ACCA (2015) on the borrower of China's P2P lending market reveals that most of them; (1) consist of small and micro business company; (2) highly educated, of these, 52% had completed college and 22% had university-level qualifications; and (3) had a formal written business plan, financially trained or qualified person in charge of business finances, and reported that the produced regular management accounts. It appears that the SMEs borrower group that using P2P lending in China have sufficient financial literacy in general, and able to do basic accounting.

One of important characteristics in Indonesian SMEs is, the owner is also the manager and the employee (Anton, et.al., 2015). Therefore, in other words, to develop SME human resource skill means also to develop the owner's educational skills (financial, technological and management skills). Most microenterprises in Indonesia at this stage still having troubled in understanding basic finance literacy (Shinozaki, 2012). Meanwhile, in order to be able to use the lending service from FinTech, basic financial skill would be necessary, since the application process for obtaining the loan would require the applicant's financial track record at the very least.

In order to increase human resource competence, training development in SMEs should be enhanced by all private and public sector. Not only government support is necessary but the educational institution, financial institution (bank or non-bank, including the FinTech firms itself) may need to align and work together to support the financial literacy of SMEs in Indonesia. Regular

workshop and training in certain areas where SMEs still lack of financial education can maximize the potential of Indonesian SMEs to help them understand the benefit of using the FinTech services.

4.3.4 Regulatory Frameworks for FinTech in China vs. Indonesia

As of 2015, China is considered as the country with the most P2P platforms in the world with the settlement of about RMB82.5 billion transactions in single month in July 2015 (Douglas and Janos, 2015). Such high growth in P2P lending industry is mainly caused due to the absence of regulation in the industry for several years, which removing the entry barriers and attracting more players to the market. The FinTech company, including P2P providers are refused to be claimed as financial company, and as such they did not fall under the financial regulation in China.

Chinese government put less intervention in the FinTech industry in the early stage because while they observe how the business going, they realize the benefit from it, which has improved the lives of many in China. As the Chinese economy grew, the gap of the rich and poor also get widened, which encourage the financial inclusion (Chen and Ernie, 2015). The innovative business model offered through FinTech industry provide many goods and services available to the rural regions in China and therefore light regulation is important to success the industry in market.

However, as the industry mature, the government start to impose heavier regulation and more strictly to regulate the industry considering more and more problematic case arise from the FinTech industry in China. As can be seen in Section 3.3.3 earlier, the P2P lending platform in China with reported problems are significantly increase through the years. After observing the market industry for several years and less intervene in the industry, Chinese government then issued the regulation directly for P2P lending platform in 2015. The contents of the regulations appear to highly promote risk management and establish much-needed ground rules to limit the illegal activity in P2P lending industry (Li, 2016), which exactly address the problem that face in China's P2P lending industry (see section 3.3.3). The regulators are more interested in controlling undesired activities rather than setting legal barriers to entry (Li, 2016).

Unlike in China where government impose the regulation after long market observation

and the P2P platform industry is more mature, the Indonesian regulators already started to prepare the regulation although the FinTech industry in Indonesia is still in early stage. As reported by CNN Indonesia, the financial authority will issue new regulation on FinTech by end of 2016 meanwhile, the FinTech business, especially the P2P lending platform industry just started to available in Indonesia around 2015. If the issuance of regulation eventually happens in 2016, it is arguably the P2P lending industry in Indonesia is still way far from mature stage. Any high barrier to entry the market due to regulatory issues and heavy intervention form the government, may kill the grow potential of the industry. One of suitable approach to have P2P lending industry in Indonesia potentially grow and help the economy is using approach as has been done by Chinese government. The light government regulation in the initial stage of the P2P lending industry in Indonesia and observing the market in Indonesia would be important element for the industry to success.

CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS

Section 1. CONCLUSIONS

The study is set out to explore the potential of FinTech industry in Indonesia and also to understand the main factor in order for the FinTech services could give utmost support for the growth of SMEs' business in Indonesia. A case comparison study of China's FinTech industry is carried in this study to examine how the FinTech industry successfully gain high traction in China's market and satisfy the financial needs of SMEs in China. It is important to highlight that the FinTech service as the object of study is limited to the FinTech 3.0, which business is derived from technology firms (non-banking financial institution) who deliver financial services to public, particularly an alternative lending service through peer to peer (P2P) lending platform.

Both China and Indonesia as developing countries have some common environment in terms of: (1) population density, (2) number of unbanked population; (3) the importance of the SMEs in economic growth; and (4) the financial constraint by SMEs in each country.

No.	Common Environments	China	Indonesia
1.	Population density	China is in first position of the most populated country in the world.	Indonesia is the most populated country in South East Asia and ranked four in the world.
2.	Unbanked population	around 36% of its total population China did not have bank account.	106 million people (or around 60% of the bankable population) did not have the bank account.
3.	SME's important role in economic growth	China's SMEs contributed to 58.5% of GDP, 75% of employment opportunities, and 68% of export activities.	Indonesia's SMEs contributed to 59% of GDP, 97% of employment opportunities, and 15% of export activities.
4.	SMEs' financial constraint	SMEs in China only receive 20% of the credit originated by the banks	Only 6% of SMEs in Indonesia using bank loan as source of financing

The FinTech services providing alternative lending platform, called P2P (peer-to-peer) lending platform, creates an important allocation role, and become solution especially for SMEs in China that have constrained the credit access. Since firstly available in Chinese market in 2007 until by 2014, the platforms have delivered directly to the public and SMEs more than RMB251 billion of credit (Douglas and Janos 2015). It has gained traction and market acceptance from SMEs seeking credit, mainly due to the following reasons:

1. no collateral is required to obtain required amount of working capital;
2. the simplicity of application of lending process on paperless basis;
3. faster lending approval and cash disbursement;
4. competitive lending rate; and
5. no penalty is given in general from early repayment.

Previous study conducted by Shinozaki from Asia Development Bank (2012) showed the biggest barriers of Indonesian SMEs to obtain financing from the financial institution is due to the collateral requirement and high lending rate, and further, it reveals that the lack of access to finance negatively affected SME survival and growth rates in general. Therefore, the SMEs in Indonesia require some form of alternative financing to cover their financing needs.

The Indonesian government currently foresee the potential of FinTech market in Indonesia to support the SMEs that has been underserviced by the large banks, particularly for the micro-enterprises which accounted for more than 90% of the total SMEs in Indonesia. By learning from China's FinTech industry, there are three conditions are observed to be important as key success factors for the FinTech industry to support the growth of the SMEs: the digital technology adoption level of the SMEs, the financial literacy skills, and the regulatory frameworks.

No.	Key Indicators	China	Indonesia
1.	Digital technology adoption level: a) mobile phone penetration b) internet user penetration	a) The country with the most mobile phone users worldwide, with 89% of population using mobile phone b) the internet users in China has reached 45% of its total population and the penetration in rural area nearly quadrupled in past 7 years	a) 84% of the total population use the mobile phone and it is predicted to reach 100% of population by 2020 b) the internet users only reached 15.8% of population, which still half below average in ASEAN countries (35%)
2.	Financial literacy skills	The FinTech service users are highly educated, with 52% had completed college and 22% had university-level qualification, and financial trained or qualified person in charge of business finance	Most microenterprises in Indonesia at this stage still having troubled in understanding basic finance literacy.
3.	Regulatory frameworks	• The government put less intervention in the early stage growth of the FinTech market in China, and start to impose heavier regulation as the industry mature. • In several years since the first P2P establish in China's market, the regulation remains in absence. • The contents of regulation recently issued in 2015 after the market mature, mostly promote on risk management to control and limit the illegal activity in P2P industry, rather than giving legal barriers to entry	• The government will issue the regulation although the FinTech's industry in Indonesia is still in early growth stage.

Section 2. RECOMMENDATION

Since SMEs in Indonesia are dominated by the microenterprises with financial constrain, it is really important to build the financial infrastructure to support the growth of SMEs, particularly in micro business level. The integration of FinTech ecosystem by creating an innovative financial solution for SMEs in Indonesia may become one of the most powerful tools to stimulate the sustainable economic growth in the future in Indonesia. However, in order to succeed in manifesting such integration, some vigorous efforts need to be accomplished by the stakeholders.

1. Improving the IT infrastructure.

At this moment, the internet penetration in Indonesia still considerably below the average global standard, meanwhile the adoption level of digital technology is highly related on the success rate of making FinTech services benefits the SMEs. Therefore, the support from government to build sufficient IT infrastructure, and improving the quality service of existing internet service is really crucial, especially in rural area in Indonesia.

2. **Providing regular training and workshops to improve financial knowledge of the SMEs' human resources.**

It is important to increase human resource competence of SMEs, especially in finance literacy. Regular training and workshop can be held by public and private sector. Government may create program to educate SMEs in financial subject, but any educational institution or financial service institution (bank or non-bank, including the FinTech players) also need to align and work together help SMEs enhance the finance literacy and understand the advantage of FinTech.

3. Impose heavier regulation after the industry become more mature.

Any high barrier to entry market due to excessive regulation in early growth stage of FinTech industry in Indonesia could restrain the ability of FinTech firms to compete and grow in the market. It is important for the government to observe the business practice of FinTech firm in Indonesia and just lightly regulated it at this early growth stage. After intensely monitor the industry and the industry become mature, then the government may impose heavier regulation which focus on the

risk management issue to prevent any illegal activity of FinTech firms rather than adding legal barriers to entry. The supportive action from the government and regulators is pivotal to determine the succeed of this industry.

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[i] Of these sampled SMEs, 74.6% were individual business units with no legal status, 43.2% were start-up businesses whose operating periods were less than 5 years, 66.6% were businesses with employees of less than 20 people, and 70.7% belonged to the manufacturing industry. A total of 346 MSMEs, or 55.6%, provided valid financial data. The average total asset value per head was IDR2.13 billion and the annual net sales value per head was IDR1.66 billion. Basically, these MSMEs belong to the upper layer of the MSME pyramid. The sampled MSMEs included 120 growing microenterprises, according to the category on Law No.20/2008, which provided financial data (Shinozaki, 2012).

[ii] The service provided by the Bank of Scotland called "Homelink" which offers to Nottingham Building Society (NBS) customers. This service form as the basis for online banking known today (The Financial brand, 2012).

[iii] The "Internet of Things" (IoT) describes the widespread embedding of sensory and wireless technology within objects, giving them the ability to transmit data about themselves: their identity, condition and environment.

[iv] See further the article "Goldman Sachs is a tech company" by Jonathan Marino.

[v] The survey is conducted in September and October 2015 on 10,131 digitally active consumers in Australia, Canada, Hong Kong, Singapore, the U.K. and U.S. There are 2,592 respondents of the survey who indicated using at least one FinTech products according to EY FinTech Adoption Index 2015

[vi] Lufax is the third largest P2P platform in the world and easily the fastest growing. According to the company, Lufax grew online originations from 151m yuan ($24m) in 2012 to 3.3b yuan ($528m) in 2013 for an amazing 2100% growth and they expect to originate 10-15b yuan ($1.5b to $2.6b) in 2014 (more about Lufax at http://www.lendacademy.com/the-most-important-chinese-p2p-lending-companies/)

[vii] See more about PPDAI in section 3.3.1

[viii] As reported in the survey findings by ACCA (2015), the share of respondents borrowing 'to accumulate credit worthiness' was high across all individual borrower respondents' income and loan interest ranges, regardless of whether they had previously borrowed from other financial institutions. This suggests that, in the absence of widely accessible formal credit sources in China, individual borrowers are prepared to pay very high transaction costs to secure better financing terms

in the future. The main way they could lower their interest rate for borrowing was by accumulating a record of good loan transactions.

[ix] Trade credit is as a form of short-term debt, and yet it does not require any outright interest, is often in the form of an informal contract, and is not issued by any bank or financial institution. It has been an essential way for businesses to finance short-term growth. Trade credit is a useful option for businesses to receive supplies crucial to growth without paying immediately. This way they can sell their product before payment is due, or use the freed up cash flow for other business purposes. (see more at: Trade Credit Definition | Investopedia http://www.investopedia.com/terms/t/trade-credit.asp#ixzz4CUWqVhtG)

[x] Micro-credit arm of Alibaba group.