

Financial Technology in Indonesia: A Fragmented Instrument for Financial Inclusion?

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Abstract

This study aims to delve deeper into the discussion on how the financial inclusion progress in Indonesia could be affected by the growing fintech industry. We shall comprehensively discuss the current state of the platforms in the country, including the potential benefits and challenges. Such afflictions include the hugely-concentrated deposit market, to begin with and the discrepancies between regulators and the technological changes, while the high internet and mobile phone penetration are only one of the many advantages the country are endowed with. The study aims to highlight the challenges faced in increasing financial inclusion before the fintech platforms begin to flourish and how they differ to the current condition. Novel and relevant policy recommendations are also provided in the latter parts of the discussion.

JEL Classification: G21; G28

Keywords

financial inclusion — financial technology — Indonesia — digital divide

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1. Introduction

Financial inclusion has been one of the government's focus in recent years. Efforts have been made to help more Indonesian acquire access to financial services. The growth has been remarkable – in fact, Indonesia had the biggest account ownership increase in the region as the number increased from 20 percent in 2011, to 36 percent in 2014 and 49 percent in 2017 (World Bank, 2018). Even the population with the least amount of ownership, i.e., the poorest 40 percent, the rural population, young adults, and those outside the labor force, have been showing significant progress in a mere six years period of financial account ownership.

As of 2014, around 8 percent of the population aged 15 or more used debit cards for purchasing. The figure grew to 11 percent in 2017 (Demirguc-Kunt et al., 2018). A similar story is observed regarding the poorest 40 percent of the population, as the proportion of such subset making digital payments in 2014 stands at 7 percent and subsequently growing to 14 percent in 2017 percent. Noticeably, the financial inclusion indicators in Indonesia show considerable growth and penetration. However, the number might not be enough, as the country still trails to the developing countries in other regions, such as Brazil, India, and Russia.

Recent dynamics have seen another major player entering the market – financial technologies or fintech. Capituating on the immense penetration of mobile and internet usage in Indonesia, the platform has enabled the Indonesian customers to get easier access to lending (borrowing). Companies such as Investree, Modalku, and Koinworks are only a few of the flourishing fintech-based start-ups in the country. However, the fintech companies are still only penetrating the urban and suburban population. In light of the massive and rapid changes in the originally ill-prepared financial inclusion landscape, such advancements may bring not only benefits but also the possibility of a 'digital divide'

in the financial market. As the banked and underbanked population in the urban areas are getting better access to the financial services through such platforms, the unbanked and those living in the more rural areas are arguably stagnating.

This study aims to discuss the benefits and the potential of such entry in the Indonesian context. We cover, first, the technological and financial progress of the country. Second, we describe our classification of banking users in this study, in which we introduce our definition of 'underbanked' citizens. We then proceed to discuss the fintech's entry into the landscape. Following the section is a comparison between Indonesia's case and the other, best-practice countries' cases. We emphasize the distinction between the Indonesian progress and the others' through which we deem the former to be rather 'trapped' amid the exponential progress. We conclude the paper by bringing up the debate on whether the progress induces more inclusion or fragmentation instead.

2. The Mobile-captured Society

Financial technology in Indonesia, along with the other digital economy aspects such as e-commerce and sharing economy platforms, has also been supported by the penetration of internet and telecommunication devices. Noticeably, internet penetration in Indonesia showed a positive trend throughout the last decade. It started from 500,000 users in 1998 and reached 143,260,000 of internet users in 2017 (APJII, 2017), the majority of which are in the young age category, which ranges from 13-34 years old. APJII's survey in 2017 states that the penetration of the internet in an age category is quite varied. The highest amount of penetrations was obtained by the 13-18 years old group (75.5%), the second was obtained by the 19-34 years old group (74.23%), the third was 35-54 years old group (44.06%), and the last was >54 years old group (15.72%).

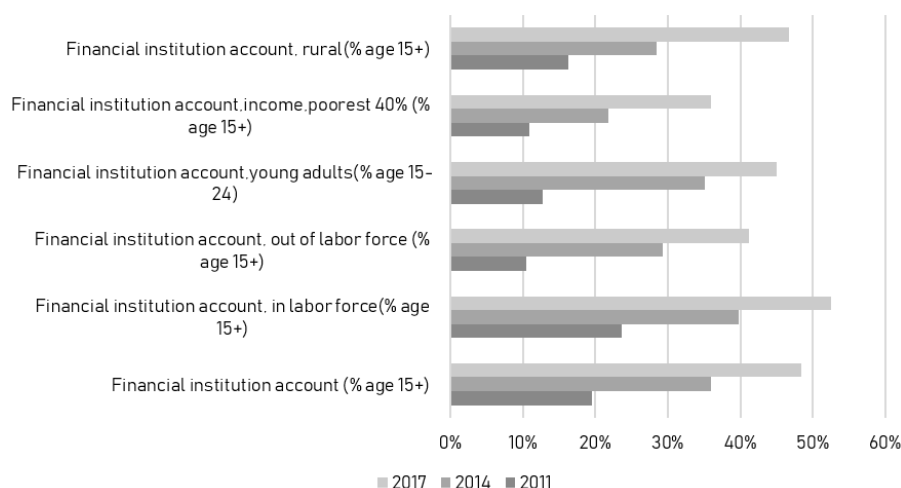


Figure 1. Brimming with progress – Ownership of financial institution account in Indonesia
Source: World Bank (2018)

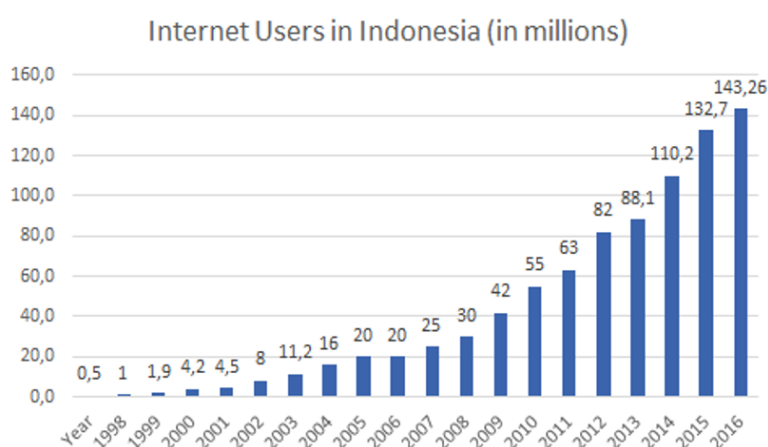


Figure 2. Internet Users in Indonesia (in millions)
Source: APJII (2017)

Despite the high penetration, the number of actual internet users was much lower than the amount of internet penetration. Based on the age category, internet users who were in 13–18 years old group only accounts for 16.68% of samples, 19–34 years old users account for 49.52% of samples, 34–54 years old users account for 29.55% of samples, and >54 years old users account for 4.24% of samples. Majority of internet users who get penetrated more were in post-graduate or doctoral education, and the internet users who get penetrated less didn't have any educational degree. Penetration of the internet also revolving mostly on high-income society (93.10%), rather than the lowest income society (21.72%). However, the composition of internet usage was dominated by lower income society (74.62%) contrasting with the high-income society internet users (1.98%). Lastly, internet penetration was higher in the urban area (72.41%) rather than the rural-urban area (49.49%) and rural area (48.25%). Most of Indonesians experienced internet penetration in 2014–2016 (37.12%) or 2011–2013 (28.61%), and the rest was in the year before 2011.

At any rate, Indonesian internet users are very digitally savvy. They are "netizens" with a requirement for a steady network, instant information, and developing more craving for digital content. They spend a higher than average amount of time on the Internet, primarily captivating in over-

whelming online networking use and web-based businesses (e-commerce). Their social media usage is among the most elevated of any population in the world. In 2016, the revenue of the web-based business in Indonesia added up to USD6 billion, where 78 percent of current Internet clients made online buys. The business is required to develop by around 18 percent every year in the following five years, achieving a market volume of USD16.4 billion before the finish of 2020 (based on McKinsey projection in 2016).

Besides, Indonesia is a mobile-first nation; around 75 percent of the online buys are made through cellphones. Statistic of internet usage in Indonesia is surpassing the developed nations, for example, the United States, where these media have been around longer and are firmly settled. Moreover, Indonesia's Internet population is expecting to be higher in the future because of the growing accessibility of the portable Internet just as the expanding accessibility of cheap telephones. Indonesia is relied upon to include 50 million new Internet clients from 2015 to 2020, might achieve a penetration rate of more than 53 percent.

The telecommunication sector in Indonesia is one of the world's most crowded cellular telecoms market due to its large population, its huge archipelago, and the current moderate cost in the technology gadgets markets. The quantities of mobile subscribers in Indonesia achieves around

278 million, while there are 11 million fixed line endorsers. Just about 85 percent of the Indonesian population possess cell phones while 43 percent carry cell phones. Mobile operators are picking up power in the Internet Service Provider (ISP) part since a large portion of the roughly 53 million web clients in Indonesia is using their cell phones to access the internet. Further, fixed-line ISPs also aim for corporate and private clients while in the same time concentrating on upgrading their infrastructures by building fiber-optic systems of changing sizes and capacities in some biggest urban areas in Indonesia (ICLG, 2018).

Major operators for mobile subscribers in Indonesia are Telkomsel, Indosat Ooredoo and XL Axiata; they dominate 80 percent of the telecommunication sector. The mobile sector is expected to gain 7-8 percent revenue growth in 2019 as all major operators race to expand 4G coverage in the region and capitalize on the growing demand for data (DBS, 2018). Since the first half of 2017 to the third quarter of 2018, high-speed fixed broadband household penetration in Indonesia has doubled, from 4 to 8 percent, showing the development by all major fixed broadband players to increase their coverage regions to profit on the "growing appetite" for high-speed data among the expanding middle-income class in Indonesia. DBS Bank (2018) expects to see penetration of high-speed broadband services rising to at least 20 percent over the next three years, adding approximately 9 million new households to the high-speed broadband segment.

Further, the majority of total Indonesia population have already had communication devices. This data is obtained from a survey made by *Asosiasi Penyelenggara Jasa Internet Indonesia* (APJII) in 2017. Survey results showed that out of 262 million people in Indonesia, 50.08 percent have smartphone/tablet and 25.72 percent have computer/laptop. This means, around 131,209,600 people own smartphone/tablet and 67,386,400 people own computer/laptop in Indonesia. To access the Internet, out of 143.26 million Internet users, 44.16 percent use smartphone/tablet, 4.49 percent use computer/laptop, 39.28 percent use both, and 12.07 percent use other devices. Even so, these ownerships are still concentrated in urban areas, especially in Java.

In urban areas, 82.6 million (31.55%) people own computer/laptop and 185.9 million (70.96%) people own smartphone/tablet. These amounts are significantly higher if compared to rural-urban and rural areas. In rural-urban areas, people who own computer/laptop and smartphone/tablet are only 61.3 million (23.42%) and 119 million (45.42%) respectively. Meanwhile, there is only a slight difference in communicative devices ownership between rural-urban and rural areas. Result shows that around 62.3 million (23.83%) own computer/laptop and 110 million (42.06%) own smartphone/tablet in rural areas.

Smartphones/tablets are the most common communication devices that people use. But, in all areas (urban, rural-urban, and rural), number of people owning both smartphone/tablet and computer/laptop exceed 30%. Around 17.19% of Internet users own more than one computer/laptop, and 4.25% own more than one smartphone/tablet. This could be seen as a successful penetration of telecommunication devices into Indonesia as the number of ownerships in Indonesia is high and owning more than one is perceptible.

APJII (2017) found that even though the number of Internet users has been increasing compared to the year before and the number of telecommunication devices ownerships is high, the Internet usage for banking purpose is only 7.39%. This amount is low if compared to the usage for chatting (89.35%), social media (87.13%), search engine (74.84%), downloading video (70.23%), uploading a file (35.99%), and email (33.58%). Meanwhile, in the economic category, Internet usage for banking transaction only accounts for 17.04%. Also, only 928,900 out of 132.7 million (0.7%) Internet users are using their telecommunication devices for e-money purpose (APJII, 2016). Nevertheless, this percentage is bound to get higher as the potential growth of the Internet and telecommunication devices are substantial.

2.1 The 'Underbanked'

Next, we shall discuss the financial landscape of the country. The current financial landscape in the country consists of the financial services concentration being heavily concentrated in multiple aspects. First, in terms of the financial services concentration, the country is still being heavily reliant on the banking sector. It was reported that around 79 percent of the country's financial services was dominated by banks, while other types of financial institutions remain insignificant (World Bank, 2010). Other types of financial institutions remain scarce, including the likes of the finance companies (5 percent), insurer (6 percent), pension funds (4 percent), securities firm (2 percent), mutual funds (2 percent), and the more traditional/rural institutions including pawnshops (2 percent).

Second, regarding the distribution of the financial institution geographically, the concentration was reported to be heavier in the Western part of Indonesia. The previously mentioned report explained that financial institutions are more densely available in the western part of Indonesia, particularly Java, Sumatra, and Bali (World Bank, 2010). The report suggested that the Indonesian commercial banking outlet was distributed mostly in Java (52 percent), Sumatra (22 percent), Kalimantan (9 percent), Sulawesi (8 percent), Bali and Nusa Tenggara (5 percent), and Maluku as well as Papua (4 percent).

Such concentrations have put citizens particularly in underserved areas under certain difficulties to access financial services. As this study also focuses on the Small and Medium Enterprises (SMEs), we are also interested in observing the challenges endured by the particular subset. There have been several barriers such as SMEs face daily related to the financial services. First, the SMEs are still struggling to seek financing. Several reasonings are associated with such difficulty; the lack of collateral requirements and the high-interest rates are a few of the main hindrance for the SMEs in accessing the financing they need. There have also been problems such as the mismatch between the loans repayment schemes with the seasonal nature of certain SMEs income, such as those in the yield-based sectors, i.e., the farming and the fisheries (World Bank, 2010).

Further, the preferences of the SMEs are also hampering their efforts in accessing formal financing. Most of the SMEs, especially at the smaller scales, do not have official legal status (World Bank, 2010). Such off-the-book operation made it difficult not only for the SMEs in getting their

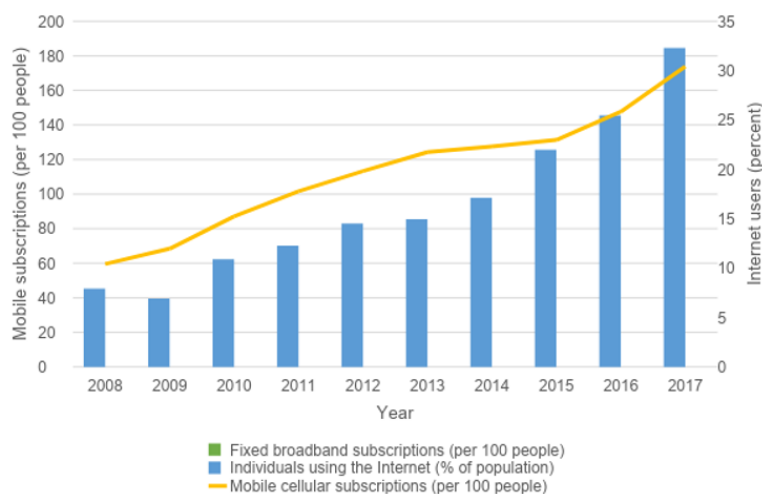


Figure 3. Capitulating the ripe market – Internet and mobile penetration in Indonesia

Source: World Bank (2018)

loans but also for the financial institutions to adequately assess the risks related to the proposed loans. The problem is worsened by the fact that a considerable proportion of the SMEs is still preferably conducting their transactions in cash, despite being exposed and using banking services. Despite the barriers, however, it is still worth noting that the SMEs are still brimming with potential for the financial industry practitioners. As reported by the Bank Indonesia Fintech Office, only 10 percent of all MSMEs are actively using e-commerce platforms. With the right encouragements, the untapped potential of the SMEs is only to be gained by the industry and society.

In discussing the financial landscape, one of the most prominent issues is the banking ownership by the citizens. This study classifies the banking ownerships of Indonesian citizens into three categories. First, we have banked citizens. The category refers to the people or organizations with banking account ownership and also access to financial services, i.e., credit cards, loans, and others. Second, we have the underbanked citizens. The classification represents the people or organizations who do not have sufficient access to the previously-mentioned financial services but do own banking accounts for saving. Lastly, we have the unbanked citizens – those completely without banking accounts nor access to financial services.

The definitions above are slight modifications from the one provided by World Bank (2010). In the report, the World Bank classifies the citizens into the banked citizens, practically those with complete access to financial institutions, and the unbanked citizens. Our study, however, argues that the Indonesian landscape requires a ‘middle-ground’ classification disentangling the financial institutions into the banking services and other financial services, i.e., lending, insurance, and others. The ones with access to the banking services but not the other financial services are the ones this study classifies as the ‘underbanked’ – the banked people in terms of saving but not the others. For the records, the World Bank (2010) reported that 32 percent of the Indonesian population was classified as the unbanked.

Based on World Bank Global Findex Database, debit card’s owner in rural Indonesia reached the 7% of population (2011), and the debit card ownership showed the

increasing trend in the next period of survey. It reached 18% of rural population in 2014 and 28% of rural population in 2017. On the other hand, credit card ownership in rural Indonesia still on its lowest point in 2011, no one in rural area has credit card. In the next period of survey, credit card ownership in Indonesia is getting higher. Credit card ownership in rural Indonesia reached 1% of population in 2014 and 3% of population in 2017. In developing countries, debit and credit card ownership in rural areas tend to be lower than the card ownership in urban areas. Global Findex survey used different approach in every countries, which makes it hard to make a consistent definition of the urban-rural partition at the global and regional dimension. Another challenge is that the estimates of account ownership for urban populations are often imprecise. Because of above condition, there is no data available of card ownership for the urban area. Population in rural area needs more access to bank facilities such as debit and credit card, in order to increase the financial inclusion. Generally, urban population have credit card ownership higher than rural population. They need more financial access other than bank, for example: fintech services which could be accessed more easily in urban areas due to higher internet usage.

In the conventional landscape, the interactions between the above-classified citizens and the financial services market players are presented in Table 1. The banked citizens own saving accounts in banks, borrow money from the banks, own insurances from the insurance companies, and make payments through the banking services and by cash. Meanwhile, the underbanked citizens living in the more urban areas own saving accounts in banks but borrows money from their local pawnshops. We assume their insurance ownership to be relatively low and still make payments predominantly by cash. The underbanked citizens living in the more rural and remote areas, however, may not necessarily possess similar traits with their urban counterparts. We assume that this type of citizens owns their saving accounts in the local cooperatives, BPR (rural banks), and even rotating saving and credit association (ROSCA, in Bahasa: *arisan*). They borrow from the local pawnshops, loan sharks, and the *arisan* schemes, while making mostly cash payments. The unbanked may have the all the similar characteristics

but the saving aspect – we assume they make their savings not in the formal institutions such as cooperatives or rural banks, but rather in the informal institutions such as the *arisan* scheme.

It is important to note that the above classifications may not perfectly represent the actual landscape of the country. For the scope of the discussions, however, we deem the generalizations adequate as they are to be heavily used in the preceding sections.

As of 2009, notable progress on the country's financial landscape was present. The year marked the launch of e-money platforms, such as Flazz, Tapcash, among others. The usage of such platforms helped the customers to make more comfortable payments. Now, the e-money circulation has risen from 3 million in 2009 to a staggering 136 million cards. While the growth has been nothing short of remarkable, it has to be noted that the majority of the usage is still in Jawa.

3. Enter Financial Technology

The recent changes have seen the country experience a flourishing entry and growths of the financial technology (fintech) platforms and companies. While there has yet to be a formal definition for the fintech itself, Dorfleinter et al. (2017) define the term as the companies or representatives of companies that combine financial services with modern, innovative technologies. The fintech's ventures in Indonesia has been done in numerous forms, including the bank-based fintech, the telco-based fintech, the apps-based fintech, and the widely used fintech lending.

Arner et al. (2015) found that fintech refers to the use of technology to deliver financial solutions. *Otoritas Jasa Keuangan* (OJK) stated that citizens need alternative funding sources which are more flexible, transparent, and can reach a wider scope of the population than the traditional financial services provided by most banks, and the fintech concept can fit the bill. The founded establishments such as Asosiasi Fintech Indonesia (AFI) in September 2015 and Bank Indonesia Fintech Office in 2016 paved the way for a wave of flourishing fintech companies since those are considered as a sign of support for the fintech companies to thrive in Indonesia.

The number of fintech profiles in Indonesia has significantly increased; OJK recorded that the number of fintech-operating companies registered at OJK improved from 32 in January 2018 to 106 in April 2019. Using data from Bank Indonesia in 2017, as can be seen from Figure 3, the payment-related companies dominate the fintech landscape with around 42% of all fintech companies in Indonesia. The next biggest sector is the lending companies, especially peer-to-peer (P2P) lending, with around 33%. There are only 14% of the fintech companies operate in investment and finance management field, a minority in terms of the proportion of fintech companies in Indonesia.

The differences between the development progress of each sector are compelling. For example, in the banking industry, the amount of saving account reached 246,293,377 accounts in 2018, which was significantly bigger when compared to the number of investors in the stock market – around 829.426 SID in 2018. Due to the high number of

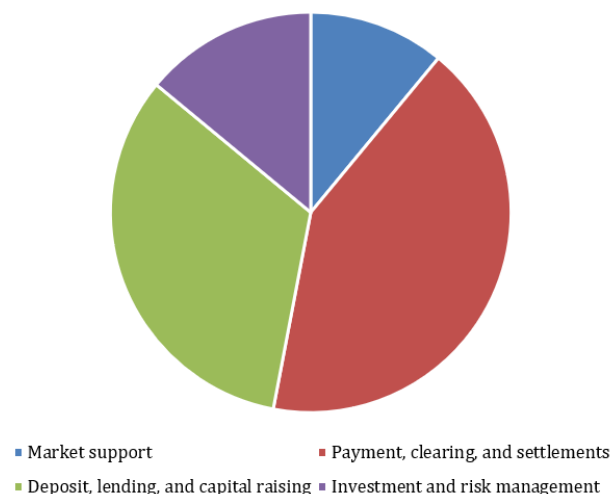


Figure 4. Sectors of Fintech Platforms in Indonesia

Source: Indonesia Fintech Association Data (2017)

bank service users in Indonesia, the banking industry must be able to develop their products rapidly to at least keep the satisfaction level of the bank service users, and thus retaining them as the banks' customers. OJK in 2018 stated that the banking industry has been developing its system to fasten for the ease of doing financial transaction by utilizing digital advancement (digital banking).

The stock market, on the other hand, started to digitalize its system relatively later than the banking industry. Furthermore, by using digital banking services, bank service users can connect their digital banking accounts with many marketplaces, while securities in the stock market are not as liquid as the funds from the banking accounts when transacted to other marketplaces. Although with the apparent discrepancy on the number of users between banking industry and portfolio investment sector, the digital system of the stock market in Indonesia has made it easier to open an account in the stock market which should stimulate the desire of investing in Indonesia.

As a fusion of financial and technology services, fintech brings many benefits for consumers. Financial technology offers more product choices in fulfilling many needs, a better quality of services, and lower prices. Also, financial technology brings benefits for the financial system, such as decentralization and diversification which can dampen the effects of the financial shocks, the ability to be more efficient in operating financial service activities since it reduces time and place barriers in reaching more customers, also improvements in transparency since all financial transactions are recorded on the internet and thus less asymmetric information, and eventually support financial inclusion. For the economy itself, financial technology offers benefits such as supporting monetary policy transmissions, increasing money velocity which indicates the incremental of the business sector's productivity and eventually affects the incremental of economic growth.

In 2014, the Bank of Indonesia and OJK (*Otoritas Jasa Keuangan*) also launched two different forms of branchless banking. The first is a bank-based, and telco-based fintech referred to as the Digital Financial Services (DFS) e-money. The DFS is registered electronic money on the mobile phones and web facilitated by agents as the third par-

Table 1. The conventional financial services landscape in Indonesia

Types	Saving	Lending	Insurance	Payment
Banked	Bank	Bank	Insurance Company	Banking/Cash
Underbanked (Urban)	Bank	Pawnshops	–	Cash
Underbanked (Rural/Remote)	Cooperatives, BPR, <i>Arisan</i>	Pawnshops, loan sharks, <i>Arisan</i>	–	Cash
Unbanked	<i>Arisan</i> , etc	Pawnshops, loan sharks, <i>Arisan</i>	–	Cash

Source: Compiled by authors

ties. Meanwhile, the other form launched was the branchless banking platform called *Laku Pandai* (Smart Act branchless banking service). The latter is the provision of financial product for communities yet to be covered by conventional financial services. The two complemented the flourishing fintech growth in Indonesia. As of the second quarter of 2018, *Laku Pandai* agents have increased from 19,400 agents in the same period of 2015 into 740,000 agents (Nuryakin et al., 2018). Nuryakin et al., however, reported that such growth is slowing down.

The widely used fintech platform in the country is the lending-based fintech platforms. The immense potential of such platforms is shown to date, a total of USD56 million have been invested in the country. The leading companies in the industry are the likes of Investree, Modalku, Koinworks, among others. Early estimates suggest that while the number of such companies is in the region of hundreds, the number of registered companies is only 64 in June 2018. The lender to borrower ratio of the companies are still well below one – the estimates are at 0.07 as of September 2018. The numbers can only grow in the future as more of the untapped market is captured.

The involvement of the fintech companies on the SMEs is also not to be understated. As a reference, Investree, one of the leading fintech companies, has had 95 percent of all their lending given to the MSMEs. As of July 2017, around IDR241 billion was lent by the company, with a near zero percent of non-performing loan (NPL) figures. Owing to such profitability, several banks have entered the market through certain workarounds – some invested in the venture capitals that in turn invested on the fintech companies. Such deliverance of loans, however, needs to still be carefully managed for the platforms to grow even further in the near future.

The fintech companies are still, however, concentrated in the lending aspect. To date, renowned schemes like peer-to-peer lending, crowdfunding, among others, are focused on the credit aspect of financial services. The legal issue is one of the main drivers, as the regulations have been pushing players away from shadow banking practices – effectively hindering any chances of fintech innovations on the saving sectors despite the huge animosity by banks. It is equally important to note, though, that saving is an equally important playground for the players (Finke and Huston, 2013; Gourinchas and Parker, 2001).

In stimulating financial technology innovation, all stakeholders in Indonesia have to be cooperative with each other. Academicians and research institutions should educate people about digital economy literacy which can end up producing a talented workforce and broaden the fintech community. Furthermore, Bank Indonesia, the government, and the authorities should provide supportive regulations to help

fintech grow and protect consumers at the same time. As an example, *Otoritas Jasa Keuangan* (OJK) is responsible for creating a protection mechanism for financial customers. On the other hand, investors should provide capital and view fintech as a viable instrument; start-ups should improve the efficiency of existing financial services business models; and incubators, accelerators, and innovation laboratories should provide tools for big business to engage and assist young companies.

4. Trapped in the Middle

Juxtaposed with the other, best-practice countries contexts, Indonesia's progress is intriguing. Before bringing up the debate on whether the country has been ill-prepared for the fintech platforms' advancements, this study looks at the cases of China and the United States for comparison. For almost two decades, China, for instance, has been eagerly developing their technology. One sector which has been growing rapidly is Financial Technology. Since 2013, all segments of financial technology such as online peer-to-peer lending, online wealth management, digital insurance, and third-party payment have been facing a double or even triple growth every year. As we can see from the figure below, the amount of loan balance for online peer-to-peer was RMB31 Billion in January 2014 and increased to RMB856 Billion in January 2017. The third-party online and mobile payments system was growing from RMB7.3 Trillion in 2013 to RMB54.5 Trillion in 2016.

China's Financial Technology is now considered as one of the world's biggest ecosystem. It has 2,252 of financial credit platform at the end of June 2017. Several famous financial credit platform or companies are Ant Financial, WeBank, JD Finance, Baidu, Suning, Lufax, etc. By looking at the valuation, the companies who have the biggest valuation which above USD10 Billion are Ant Financial and Lufax. The second tiers which have a valuation between USD5–10 Billion are JD Finance and WeBank. The third tier which values USD1–5 Billion is renrendai.com, ppdai.com, quadian.com, rong360.com, etc.

The phenomenon is supported by four key drivers of China's digital transformation which are structural shortcomings in the traditional financial system, a high level of digital connectivity in Chinese society, the high relative significance of e-commerce, and governmental or regulatory environment conducive to innovation. First, the structural shortcomings in the traditional financial system result from the polarization of activity in a traditional bank. The traditional banks are state-owner companies and have a low development in the local capital market which cause limited funding sources that can be given to the society. Party who hurt the most from this situation is SMEs. Thus, there are

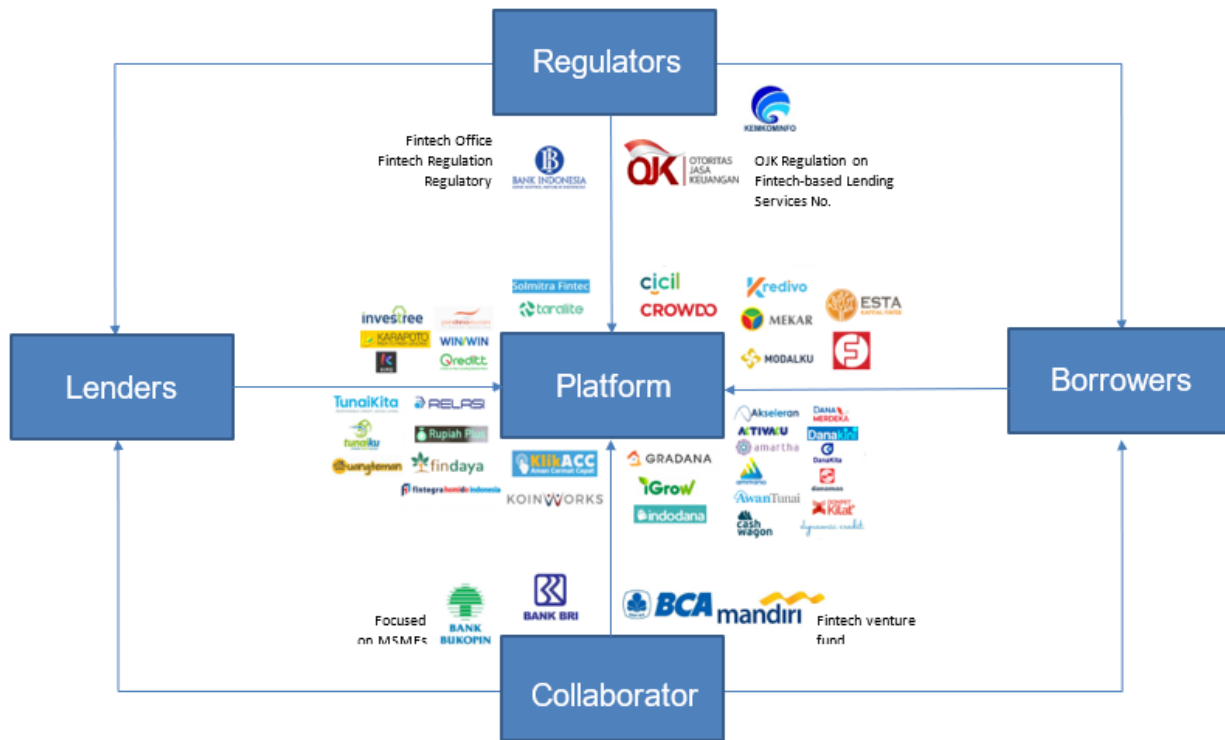


Figure 5. Financial Technology Ecosystem in Indonesia

Source: Compiled by authors

problems in granting credit, and other problem in traditional banks. Second, China is also having a high level of digital connectivity in its society. The country is already facing the maturity of its digital infrastructure and having a large number of global internet users. China has 25% of global users which more than the combination of US, India, and Japan internet users. It also has 11 times greater in payment transaction than in the United States. Third, China is the largest in the world in term of online sales. China also has sustained growth at around 25% annual rates. It represents the relative importance of e-commerce within the country. The last key is favorable government or regulatory environment. Digitalization and promotion of innovative technology are one of the pillars of five-year development plans by The Chinese Government. The government attempts to speed up the modernization of the financial industry and boost up the consumption through greater financial inclusion.

How about the United States? The CAGR transactional value of the US financial technology (fintech) market is 8.6 percent over the 2019–2024 forecast period. FinTech is transforming the US financial sector, including lending, investing, opting for loans, fund start-ups, and even buying insurance. On average, two or more fintech services are used by one out of three digitally active consumers. The U.S. accounts for 57 percent of the fintech market as of 2018. Country consumers have identified the key benefits that fintech innovation can bring, such as convenience, security, simplicity, transparency, and customization. The large increase in digital-only online banks and mobile phone payments has resulted in increased fintech money transfers and payment services being adopted. Digital payment is the leading market segment, with a total transaction value of USD 880 billion as per 2018.

Fintech startups which want to replace the old guard of

banking are leveraging regulatory tailwinds and referring for charters and licenses due to respective regulators. Regulators globally have been lowering the barriers for tech startups to enter the market as a way to break up banking monopolies and stimulate competition. The FCA was among the earliest to pilot limited licenses like the “e-money license” that enabled tech entrants like Revolut to launch a remittances business through initially partnering with a chartered bank, that decreased the company’s time to market. Revolut obtained a charter in 2018 and has been applying the same playbook to expand globally.

Over the past several decades there have been substantial improvements in financial inclusion in the United States, narrowing somewhat the gaps in inclusion that exist along racial, regional, and income lines. More recently, a range of new technologies has emerged that has the promise to offer new, safer and more affordable financial services to a larger swath of the population. Whereas banks and credit unions have historically provided three categories of services to households—saving, borrowing, and payment—new fintech companies often focus on a single service, and this development may help expand financial inclusion.

The use of checks in the country has intriguingly been more than modest; according to one estimate, households with checking accounts pay an average of USD104 in total fees per year (Stango and Zinman, 2009). Another study on WalletHub’s personal’s finance website estimates that the typical consumer would pay an average of USD151 in checking account fees annually (Comoreanu, 2015). Furthermore, The St. Louis Fed reports a range of 2.5 to 3 percent for government benefits to check and 4 to 5 percent for a payroll check, while the FDIC reports a range of 1 to 4 percent for both.

Comparing the two cases mentioned above, several key

differences in the Indonesian context are observable. First, the Chinese case has seen the country experiencing a massive leap of technological progress and inclusion financially. The use (and efficiency) of Alipay and Wechat led to hegemonies by the two, rendering the conventional financial services more on the complementary side. The American case is also showing vast ventures of the fintech platforms, while the traditional financial system is well established. The Indonesian case, however, portrays a slightly different landscape. The huge reception of fintech platforms in the country is primarily driven by the fact that conventional financial services have not been properly developed. This may lead to significant problems; as we will discuss in the following sections.

5. Inclusion or Fragmentation?

The technological advancements of the financial services are expected initially to help the financial inclusion of the country. Easier usage and access are hoped to capture the untapped potential amongst the underbanked and unbanked citizens. However, we argue that a new possible inquiry may arise from the current advancements – are we advancing too rapidly? While the progress is flourishing as we speak, the question remains whether the advancements are addressing the fundamental matters hindering the financial inclusion in the first place. That is, whether the improvements are tackling the main problems affecting the underbanked and unbanked.

Take the *Laku Pandai* schemes, for instance. The platform was aimed to be the bank-business model able to capture the underbanked and unbanked population's untapped saving sector. However, the *Laku Pandai* scheme was shown to be still not able to penetrate the rural community. The problem of the rural area population on the access to better financial services is the lack of ability of the rural population to provide the collateral required. *Laku Pandai* suffers from the same problem – the scheme is also yet to give the much-needed non-collateral schemes for the rural community. LPEM FEBUI (2018) also reported that 70 to 90 percent of the *Laku Pandai* agents are existing account holders. Banks also have limitations in expanding their agents, while *Laku Pandai* is also sometimes deemed unprofitable for the banks. Thus, the expected impact on financial inclusion is still hindered.

The e-money has also been mostly capturing urban households in terms of payment services. The rural households are still yet to be using the e-money, due to the lack of incentives to do so as the e-money platforms have been gathering more users by making partnerships with public services, transports, and merchants located mostly in the urban areas. The regulations have also hindered the possible ventures of telco-based payment methods to penetrate the rural areas despite possessing the adequate network reach to the rural population, nor the ability of the existing players to appoint the much-needed individual agents in the rural areas.

In the lending sector, the more recently expanding fintech companies are also still having limited access to rural areas. The unbanked are still struggling to get access to the saving services, not to mention the lending services. Those

needing the credits such as the farmers and the fishers are also yet to be entirely addressed by the fintech companies. There have been progressing, however, as new start-ups are trying to help give lending access to such borrowers. We argue that the fact that the above-mentioned problems persist despite the advancements of the financial institutions indicates the possibility of a new 'digital financial divide' in the industry. The following Table 2 depicts the changes the advancements made from the original landscape in Table 1.

As observable in Table 2 above, even the new advancements are still yet to completely help the rural underbanked and unbanked population. The rapid and immense market capitalization of the platforms, however, may lead to the 'divide'. Those without access to the financial services remain without access while those with the financial access further embrace the access. The problem would be the rapid growth of the platforms – making the discrepancy unprecedented. Further studies are inevitably needed to observe the above inquiry quantitatively, but this study aims to raise public awareness of such a possibility.

6. Looking Ahead

Several potential tinkering may be done in addressing the above-mentioned problems. As we might notice in the above discussions, the MSMEs and the rural areas remain untapped, especially the underbanked and unbanked. To so, however, radical changes are needed. More support on the schemes addressing the yield-based borrowers is apparent. The cooperatives and rural banks may be improved with the financial technologies, while the 'ruralized fitness' may be needed to help the specific subset of the population get the much-needed financial services.

Exploring the opportunities in telco-based services is one of the viable options. Regulatory level changes are then needed in addressing the issue. Success stories of such schemes could be spotted across the regions, i.e., the telco-based services flourishing in India (PwC, 2017). While *Laku Pandai*, e-money, and fintechs are still struggling to penetrate the untapped rural areas, telco-based services with the existing, high-level of infrastructure may be of help.

The government must also build on the existing programs. Improvements need to be made, such as better targeting, better network management, and even national ID integration in the financial services sector are the way to go forward. The need for improvement is timely, as the possibility is only supported by technologies such as blockchain. The lending sector may benefit hugely from the national ID integration, for instance, as better risk assessment may still be conducted despite the same limited initial information on the potential borrowers. Better tracking of the third-party funds, for instance, may also be conducted by such integration, among other benefits.

Finally, fostering the financial technology landscape needs to be one of the focus going forward. With the existing USD56 million investment, the e-commerce sector is estimated to reach USD150 billion in 2020. Such potential needs to be nurtured carefully. Better reach to SMEs remains an important issue for the government, and with the right push, the e-commerce and other technology-based financial platforms might hugely benefit the industries. Ultimately,

Table 2. The contemporary financial services landscape in Indonesia

Types	Saving	Lending	Insurance	Payment
Banked	Bank	Bank	Insurance Company	E-money
Underbanked (Urban)	<i>Laku Pandai</i>	Fintech	–	E-money
Underbanked (Rural/Remote)	<i>Laku Pandai</i>	Pawnshops, loan sharks, <i>Arisan</i>	–	Cash
Unbanked	<i>Arisan</i> , etc.	Pawnshops, loan sharks, <i>Arisan</i>	–	Cash

Source: LPEM FEB UI

making sure the advancements lead to better inclusion is key, not the unprecedented divide.

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