

FINANCIAL TECHNOLOGY (FINTECH) IN INDONESIA



Ahmad Rafiki

Assistant Professor

Universitas Medan Area

Indonesia

Table of Content

Table of Content	3
1. Introduction	6
2. Past and Present (Development Stage & Environment Overview)	10
1.1 Development of Financial Technology	17
1.2 Status of Fintech, ICT Infrastructure, Description of Main Business, Social awareness of Fintech	22
3. Industry and Market	24
3.1 (Business scope) Digital Payments, P2P lending, Equity Crowd funding, ICO/Cryptoassets, InsurTech.....	24
3.2 (Major companies) Business Model and Type	26
3.3 Market growth rate, financial inclusion, number of internet users, investment, revenue, number of companies, number of employees	31
4. Policy (support) and Regulation	39
4.1 Fintech Industry Promotion Policy.....	39
4.2 Government Agencies and Types of Regulation.....	42
5. Case Study (2 ~ 3)	46
5.1 Success Story, Fintech Taxonomy (business model), type of Products/Services, Funding, Market Strategy	46
6. Outlook	54
6.1 Industry/Market Outlook, Internationalization, Cross-country Cooperation	54
6.2 Risk Factors (Market Ecosystem Risk / Technological Risk / Regulatory Sensitivities).....	56
Appendix 1. List of licensed and registered Fintech companies in Indonesia	62
Reference	64

List of Tables

Table 1. Fintech Investment Globally	7
Table 2. Business Process of Fintech	28
Table 3. Fintech regulator in Indonesia	57
Table 5. The licensed Fintech companies (based on OJK Regulation No.77 Tahun 2016) as per 31 May 2020)	62
Table 6. The registered Fintech companies (based on OJK Regulation No.77 Tahun 2016) as per 31 May 2020)	62



LIST OF FIGURES

Figure 1. Milestones in Indonesia's Fintech Lending	16
Figure 2. Total Financial Market Alternative (Fintech) in Several Countries in Asia (in USD million)	18
Figure 3. Percentages of growth of Fintech development in some Asian countries in 3 years	18
Figure 4. Top 10 Digital wallet used in 2019	19
Figure 5. Top 10 investment used in 2019	20
Figure 6. Top 10 Online Multi-finance used in 2019	20
Figure 7. Top 10 P2P Lending used in 2019	21
Figure 8. Top 10 insurance sites / apps used in 2019	22
Figure 9. The Financial Services Education Institution in Indonesia	23
Figure 10. The speed of Fintech Growth in Indonesia: Payment & Funding	24
Figure 11. Fintech Alternative Financial Market Volume Based on the Model in Indonesia (in USD million)	25
Figure 12. The Players of Fintech	27
Figure 13. Financial Digital Ecosystem	29
Figure 14. Typical Marketplace Model of Fintech Lending	30
Figure 15. Types of Fintech Financial Services and Examples	31
Figure 16. Total Accumulated Lender Accounts	32
Figure 17. Total Accumulated Borrower Transactions	33
Figure 18. Total Accumulated Borrower Accounts	34
Figure 19. Total Accumulated Loan Distribution	35
Figure 20. Characteristics of Borrower Category	36
Figure 21. Characteristics of Lender Category	37
Figure 22. Registered/Licensed Fintech Companies and Its Capital Status	37
Figure 23. Outstanding Loan of Fintech Lending	38
Figure 24. Players and Investors Perspectives	41
Figure 25. Summary of Regulations on Fintech in Indonesia	43
Figure 26. Government Perspective of Fintech	45
Figure 27. Kredivo's App Users	46
Figure 28. How Fintech Lending overcomes Conventional Lending Providers' Limitations	58
Figure 29. Fintech Lending Potential Impact to Close the MSME Financing Gap and Individual Credit Access	59
Figure 30. Top Fintech Trends for 2020	61

1. Introduction

This book explains the progress and development of financial technology (Fintech) in Indonesia which consists of the past and present development of Fintech, its industry and market, its policy and regulation, its outlook and case studies. These will tell the academician, policy makers and practitioners that Fintech is a potential and growing industry which gives opportunities for the start up and new ventures. Indonesia as a country with its supporting infrastructures and facilities offers investors and businessmen to engage their Fintech operations especially when the policies and regulations were created to support these businesses. The future Fintech is demanding in creating new model of business which brings sophistication and efficiency.

Fintech started with the development of information technology that offers a faster and cheaper distribution of financial services through various medium such as the internet, smartphones or big data analytics, which then become a challenge to the conventional financial institutions. This alternative service is demanded and emerged especially post-global financial crisis back few years ago. Many people realized that the Fintech provide better services, thus some neglected the current form of banks' services. With this Fintech, the landscape of financial services is shifted and then connected and linked to other services that probably enlarge its market share in the future. The positive progresses of Fintech supported by the changing environment itself where every companies or consumers are rely on the information, communication and technology (ICT).

Meanwhile globally, the technology companies have obtained a huge of capital in the last few years. As revealed by the State of Venture Capital report in 2018¹ specifically which called as a promising year with a total of \$254 billion invested worldwide for approximately up to 18,000 startups through venture capital funds which is in fact an increase of 46% compare the amount in year 2017. However, figures in 2019 seem to be a decline in funding levels throughout the year. These figures are contributed by all sectors but Fintech sector dominated the sector as a growing and largest sector. In fact, the global Fintech market's value was \$127.66 billion in 2018, with a projected annual growth rate of about 25% until 2022, to \$309.98 billion as shown in the below Table:

¹ <https://www.toptal.com/finance/market-research-analysts/Fintech-landscape>

Table 1. Fintech Investment Globally

Investment Fintech Globally		Annual growth rate
2018	\$128 billion	25% CAGR
2022	\$310 billion	

Based on the EY Fintech Adoption Index in 2019², the adoption of Fintech services has shifted continuously increasing from 16 percent in 2015, to 33 percent in 2017, to 64 percent in 2019. Awareness of Fintech, even among non-adopters, is now very high. Worldwide, for example, 96 percent of consumers know of at least one alternative Fintech service available to help them transfer money and make payments. It also can be seen an inclination to distinguish between developing and developed countries. Among the countries, China lead the list as the biggest Fintech progress with a score of 69 percent, followed by India with 52 percent as well as the UK, Brazil, Australia, and Spain respectively achieved an average of 40 percent. These countries being encouraged to find alternatives and solutions through Fintech due to its penetration which is above average global adoption of 33 percent. Some of these developing countries like China, India, and others have higher percentages because felt easiness to adopt modern financing system rather than developing a Western banking system. These would be opportunities for the Fintech companies in Indonesia to compete and advance their progress.

As the eighth-biggest economy based on the GDP indicator, and with an internet participation ratio of more than 50 percent as well as more than 50 million units of micro, small, and medium-sized enterprises (MSMEs), Indonesia shows huge potential for Fintech. In fact the financial services in Indonesia have transformed with the advancement of innovation and technology especially due to the impact of financial crises such as the Asian financial crisis of 1997–98 and the global financial crisis of 2008 (Batunanggar, 2019). The later introduced financial services are the financial technology (Fintech) which everyone can engage it through the advance of information technology of the internet, smartphones, and big data analytics. With these gadget and connections, the financial services become faster and cheaper. There are many impacts of the financial technology that adopted by the financial institutions as it offers alternative services and giving opportunities to the underserved parties which been overlooked by banks as well as serve excellently the existing customers and closing the gaps in financial services.

Indonesia is the biggest economic player in the Southeast Asia region and has a highly interesting market for international investors due to abundant natural resources, a young population, a large domestic market with increasing purchasing power and its political stability. Indonesia has a large population of 260 million inhabitants, which makes it the most populous country in the region and it is more than one third of ASEAN's population. As the largest economy in the region, Indonesia's economy accounts for more than one third of ASEAN's gross domestic product (GDP).

Moreover, the Fintech market in Indonesia is growing positively which supported with the better economic development in the country, known as one of the largest economies in Southeast Asia. Based on a report by Switzerland Global Enterprise that in the next five years, it is expected that the incomes from digital financial services will reach \$8.6 billion and a compound annual growth rate (CAGR) of 34 percent³. These facts arise with reasons that this country is home to about 20 percent of all Fintech companies operating in the ASEAN region and the focus of local Fintech is on the online lending and payments that representing 60 percent and 20 percent of businesses respectively. Furthermore, for the digital wallet sector is mainly controlled by the state-owned technology and telecommunications companies. Meanwhile, some partnerships are formed with foreign partners in establishing business operations in the country⁴.

This alternative financing sector in Indonesia has developed in the past few years. As at 2019, the OJK disclosed more than 1,000 active peer to peer (P2P) lending platforms in the country. However only about 160 Fintech companies that registered and some licensed by the OJK⁵. In fact as at 7th December 2020, there are 152 Fintech companies (some of the licensed retracted by OJK). Moreover, a report by Switzerland Global Enterprise revealed that the P2P lending volumes fluctuated from \$173 million of total loans in December 2017 to \$6.4 billion as at February 2020, which indicates more than a growth of 37 times⁶. That report also revealed that between 2017 and 2019, e-money transaction volumes escalated by 11.8 times to reach IDR 145 trillion (US\$9.8 billion)⁷. Then, this growing market and transaction of digital payment industry due to the increase of e-commerce market

³ <https://Fintechnews.ch/Fintech/new-report-spotlights-the-indonesian-Fintech-opportunity-for-swiss-firms/37790/>

⁴ <https://www.crowdfundinsider.com/2020/08/165636-over-240-Fintech-firms-operating-in-indonesia-a-leading-southeast-asian-and-global-economy-report/>

⁵ <https://www.pwc.com/id/en/industry-sectors/financial-services/Fintech-lending.html>

⁶ https://www.s-ge.com/sites/default/files/publication/free-form/market_report_-_ict_indonesia.pdf

⁷ https://www.s-ge.com/sites/default/files/publication/free-form/market_report_-_ict_indonesia.pdf

which is predicted to reach US\$26.9 billion by 2020 and US\$50 million by 2024⁸. In addition, other financial services of Fintech were offered such as personal finance, Insurtech and blockchain or distributed ledger technology (DLT).



2. Past and Present (Development Stage & Environment Overview)

The financial sector is a sector that has a crucial role in the economy and continues to develop according to the community needs. Carney (2016) states that the innovation in the financial sector will change the foundations of the central bank and bring revolution to every financial services“ users. This innovation in the financial sector that is later known as financial technology (Fintech). Fintech doesn't just occur in developed countries, but also growing rapidly in developing countries such as Indonesia. The existence of Fintech is expected of bringing financial transaction processes to be more practical and safer. This financial transaction process includes payment, borrowing money, transferring, or buying and selling shares.

The development of information and communication technology has been penetrated into various aspects of life in this digital era, one of which is the application of information technology in finance which is generally referred to as financial technology (Fintech). Various definitions of Fintech are explained by many parties, but in general Fintech can be defined as technological innovation in financial services. Financial service providers develop technology that can disrupt traditional financial markets by developing new applications which being used for payments to more complex applications for artificial intelligence and big data.

Fintech had emerged tremendously in Indonesia since 2010s. This is due to the advance development of information, communication and technology (ICT) infrastructures that have been supported by the government, which coincidentally introduced with the launch of the vision: “Indonesia Digital Economy 2020” and “National Movement of 1000 Digital Start-ups”. Based on the Global Fintech Index 2020 of the Fintech country and city rankings, Indonesia is in the rank of 47 among 65 countries and Jakarta is in rank 59 among 100 cities worldwide.

However, the adult population with conventional banking account is only around 48.9 percent in 2017 own a bank account which initially has grown from 36 percent in 2014 and 20 percent in 2011 (Global Findex, 2017). It seems the target to 75 percent in 2019 is unachievable⁹. In other words, still nearly 50 percent did not have a bank account. This tremendous leap made Indonesia as the biggest account ownership among any developing markets in the East Asia and Pacific region. According to

1. Dilarang Mengutip sebagian atau seluruh dokumen ini tanpa mencantumkan sumber

2. Pengutipan hanya untuk keperluan pendidikan, penelitian dan penulisan karya ilmiah

3. Dilarang memperbanyak sebagian atau seluruh karya ini dalam bentuk apapun tanpa izin Universitas Medan Area

Deloitte report in 2020¹⁰, it is predicted that the total population of bankable unbanked will increase and reach 113 million by 2020 compare only 106 million in 2013. As of July 2020, over 185 million internet users are in Indonesia with online penetration rates stood at over 68 percent¹¹, thus this country become one of the biggest online markets worldwide. According to this Statista.com, the activities that been engaged by Indonesia people are mobile messaging and social media, with 82 percent of them are Facebook users. While DataReportal.com revealed, there were more than 160 million social media users in Indonesia with a penetration stood at 59% in January 2020. In fact, the report also tells the number of internet users in Indonesia increased by 25 million (+17%) between 2019 and 2020 and the number of social media users in Indonesia increased by 12 million (+8.1%) between April 2019 and January 2020. Moreover, there were 338.2 million (more than its total population) mobile connections in Indonesia in January 2020 that increased by 15 million (+4.6%) since last January 2019.

Meanwhile, the Internet usage remains dominantly concentrated in the larger cities with huge number of users having the smartphones that estimated reaching to approximately 85 percent. In 2020, the mobile penetration will reach close to 100 percent that make the financial technology has more chances to be developed. In fact, in ASEAN region, Indonesia hosts around 20 percent of all financial technology companies with lending and payments which now representing of 61.4 percent and 19.3 percent respectively.

Nowadays, the leading technology players in the country such as the Telcos in digital wallet business in collaboration with foreign firms are looking to penetrate the domestic market. For instance, GoPay as the digital wallet of GoJek of startup unicorn has on-demand multi-service platforms and OVO is another popular digital wallet service. All of these companies have dominated with more than 55 percent of all digital payments. In addition to GoPay, OVO and DANA are supported by China's Fintech giant; Ant Financial and a local firm of Elang Mahkota Teknologi as well as LinkAja which is owned by a consortium of state-owned firms. These are the positive trends in the Fintech industry.

Arner et al. (2015) introduced three phases of Fintech evolution which started with a period of 1838 – 1967, then 1967 – 2008 and finally 2008 till present. They elaborate every phases of this Fintech evolution as follows:

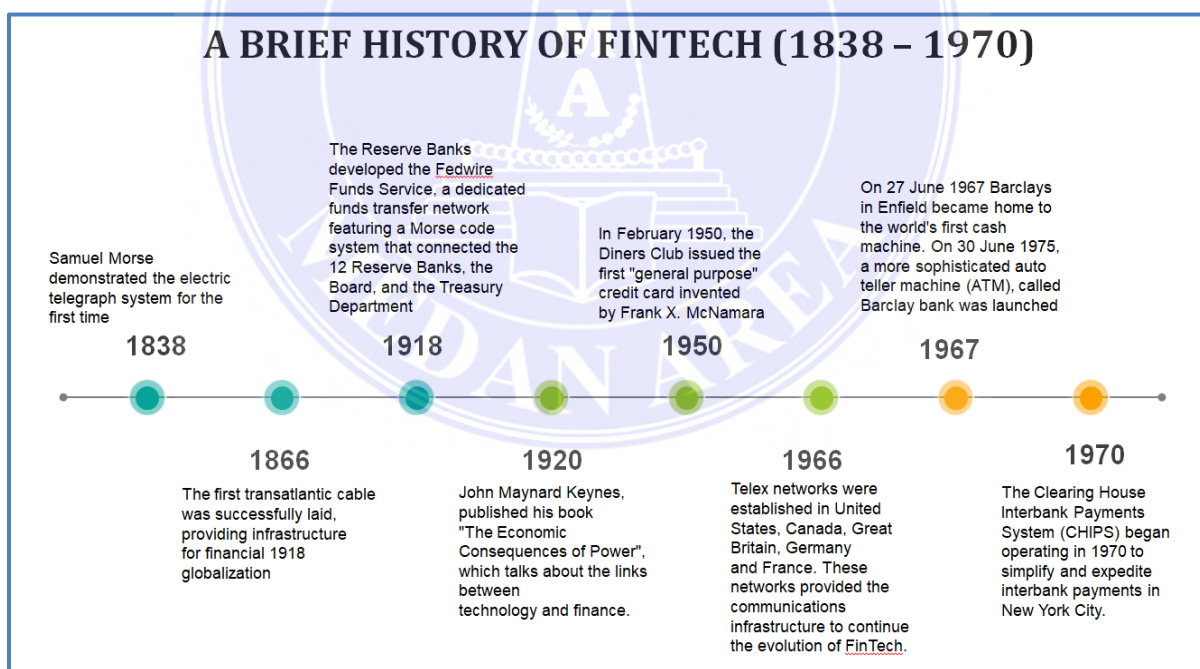
¹⁰ <https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/financial-services/sea-fsi-digital-financial-services-in-Indonesia-noexp.pdf>

¹¹ <https://www2.deloitte.com/statistics/254456/number-of-internet-users-in-indonesia/>

1. Fintech was Born (1838 - 1967)

It is initiated since 1838 which then followed with the development of transatlantic cable in 1866 and Fedwire in the United States of America in 1918 that starts the first-ever electronic fund transfer system through telegraph and morse code. However, according to Arneris et al. (2015) have argument that the first recurrence of Fintech is actually in 1886 when referred to the evolution of communication devices such as telegraph and other sophisticated transportations, which made the transfer of financial information across sectors become more faster to be received. Some says that actual era begin since 1838 which then called as Fintech 1.0 (1886-1967) that is about infrastructure.

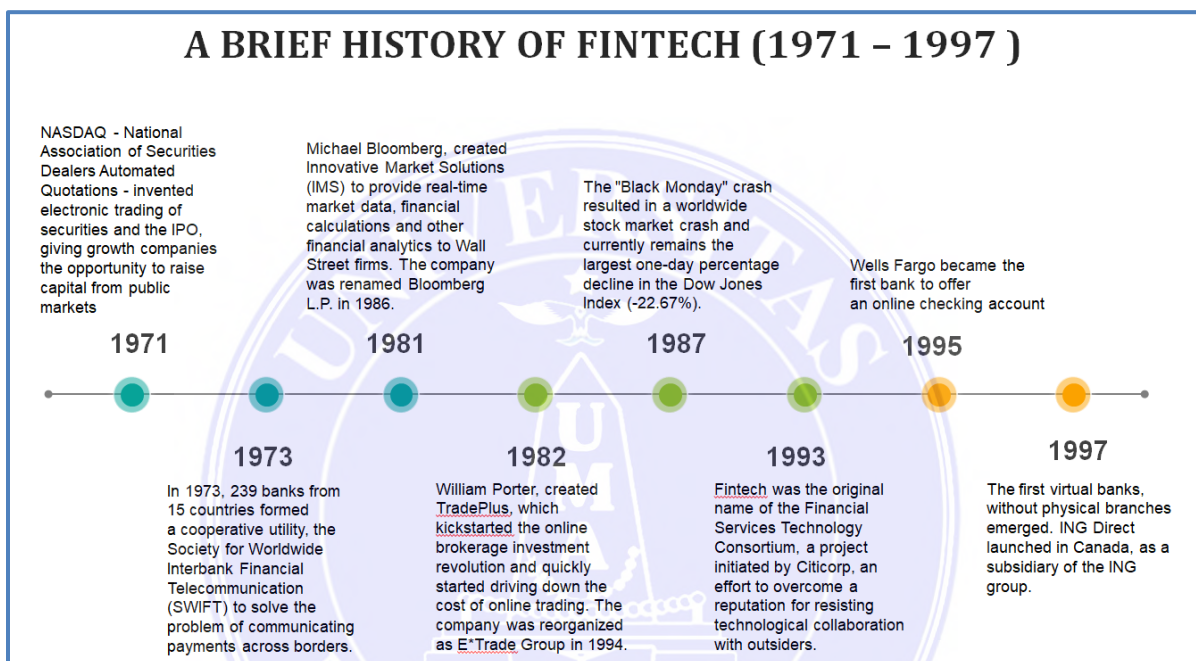
In the 1950s when the modern days begin, the payment systems of non-cash or credit card were created. The first that adopting this kind of financial services are Diner's Club in 1950s and American Express in 1958. This is also a period when the analog technology transforms to digital. The digital devices are used in many of financial institutions and first were one of the first ATM been installed is the Barclays bank back in 1967, then followed with the beginning of the Clearing House Interbank Payments System in New York city in 1970.



2. Fintech in its Teenage Years (1970 - 1997)

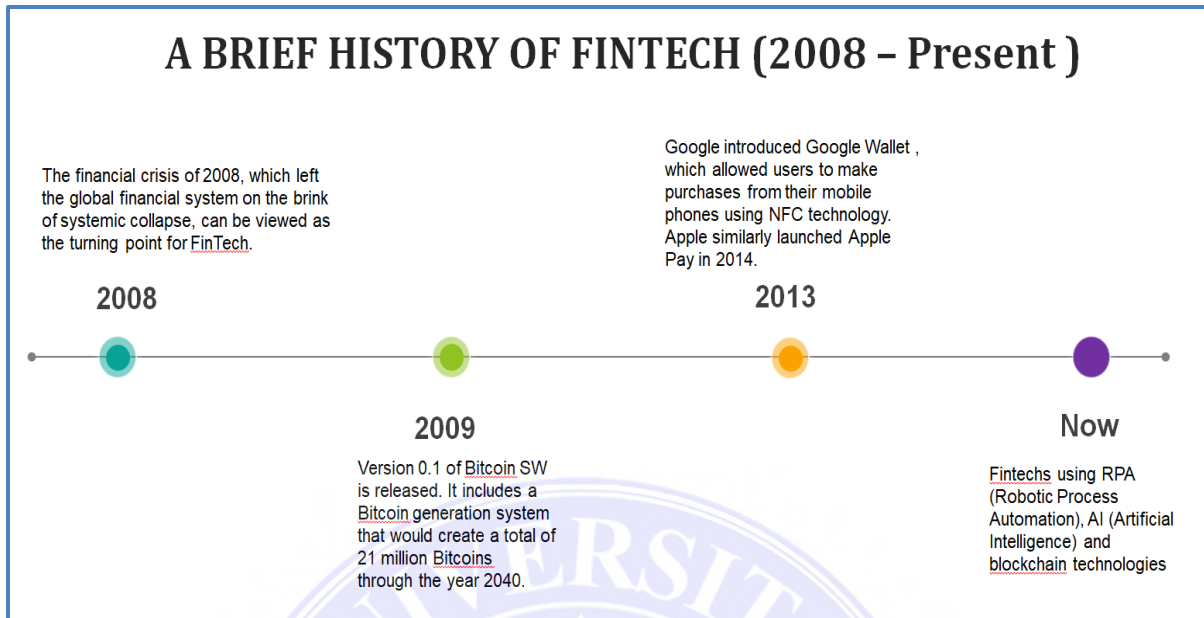
In this period, the first digital stock exchange of NASDAQ was established, which created a foundation for the operation culture of modern financial markets. Then in 1973, the SWIFT (Society for Worldwide Interbank Financial Telecommunication) was created, which is the most commonly

used communication protocol between financial institutions. It has been used for any amounts of international financial transactions. Later on in the 1980s, the first bank mainframe computers are emerged and begin with the first online banking system. With the creation of Internet in the 1990s, this online system become popular, which then the e-commerce business models can be enhanced. This was a gateway of many people looking for the importance of money and financial institutions as it is now currently occurring. This era also called as the Fintech 2.0 (1970-1997) is about banks.



3. Fintech as a Young Adult (2008 - Current)

In the early 2000s, the digitization of financial services in the banks is applied widely and then the beginning of global financial markets era. The banks' interactions internally and externally are done with a full digitalization. However, this period ends with the occurrence of Global Financial Crisis in 2008, which then lead to economic crisis that jeopardize the banking industry's reputation. With tremendous retrenchment among the financial professionals that losing their jobs, some players initiate to find ways to create an alternative of financial services rather than stick to the traditional banking systems. Therefore, the new financial services and currency systems are emerged called as crypto currency or known as Fintech 3.0.



The release of Bitcoin v0.1 in 2009 is another event that has had a major impact on the financial world and was soon followed by the boom of different cryptocurrencies (which, in turn, was followed by the great crypto crash in 2018). Another important factor that shaped the face of Fintech is the mass-market penetration of smartphones that has enabled internet access for millions of people across the globe. Smartphone has also become the primary means by which people accesses the internet and use different financial services.

It is imperative to know that the emergence of mobile data and Wi-Fi made the public could get access the unlimited information and connect to anyone across the countries using the smartphones. Smartphones are now one of the most used devices for financial transactions via Internet access, with this, Google came out with its Google Wallet in 2011 and then Apple created Apple pay in 2014.

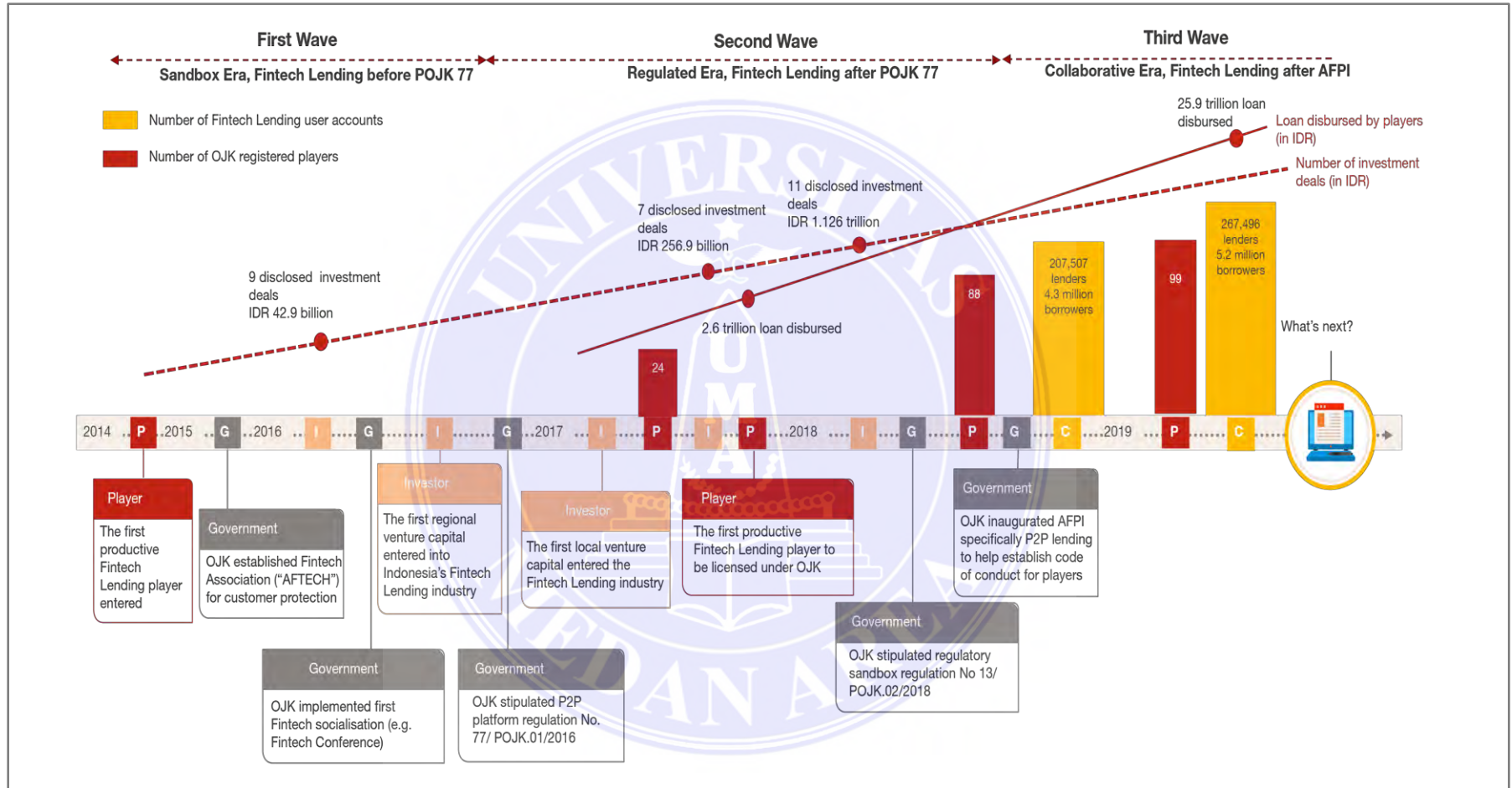
Milestones in Indonesia’s Fintech Lending

As depicted in Figure 1, PwC has illustrates the industry evolution of Fintech lending based on its regulatory engagement. Starting with the „First Wave“ of unregulated era or before the OJK regulation on Fintech lending where 9 disclosed investment deals with IDR 42.9 billion were taken place. This begins in 2014 and ends in 2016. In the midst 2014, the first productive Fintech lending player entered. Then followed with the „Second Wave“ after the OJK regulation of Fintech lending had issued where 7 disclosed investment deals with IDR 256.9 billion in 2017 and 11 disclosed investment deals with IDR 1.126 trillion in 2018 were taken place. In the midst 2017, the first productive Fintech lending player to be licensed under OJK. The involvement of OJK aimed to

ensure customer protections by differentiating between legal and illegal Fintech lending players. Finally in the „Third Wave“ when the establishment of AFPI was taken place, the Fintech companies comply with code of conduct, the government could monitor on the legal players and investors also have better trust to put some investment. This period called as Collaborative Era where it is found 207,507 lenders and 4.3 million borrowers in late of 2018 and 267,496 lenders and 5.2 million borrowers in midst of 2019. Up to this „Third Wave“, IDR 25.9 trillion loans had been disbursed.



Figure 1. Milestones in Indonesia's Fintech Lending



Source: Financial Services Authority (OJK); PwC Analysis

1.1 Development of Financial Technology

Indonesia is a huge country which has more than 17,000 islands throughout the archipelago, means that the wide geographical area will become the challenges for banks to operate or provide financial services by reaching out those the unbanked market segments. Thus, the existence of financial technology will help them to access the financial services. Nowadays, people in the remote areas can access financial services like deposits and loans, pay electrical, water, other bills and remittances. In this case, the remittances companies such as Western Union have gained a strong foothold in serving the remittances market, especially for transactions across neighboring countries such as Singapore and Malaysia. Another potential transaction is the airtime top-up for mobile phones as almost 99 percent of the 282 million mobile subscriptions in Indonesia being prepaid customers, which capturing the voluminous transactions through distributed file system (DFS). Without such transactions, the unbanked Indonesians buy for airtime top-up through traditional top-up counters, minimarkets and mom-pop grocery stores, which are not convenient compare to the DFS. Thus, the financial technology brings better transactions and various benefits.

According to a report from Accenture, Fintech is one of the fastest growing and potential sectors. Investment in this sector has reached USD12.2 billion in 2014 while in 2008, it only reached USD930 million (KPMG 2016; Saksanova and Merlino 2017). Indonesia is reported as one of the countries in the Asian region with a fairly high growth in the Fintech market. It can be seen in Figure 2 that the growth of the Fintech market in Indonesia reached 166 percent from USD1.82 million in 2013 to USD35.35 million in 2016, which is higher than Malaysia for only USD8.29 million and Thailand USD3.72 million. The shift in Indonesian people's behavior in the aspect of digital services and the high penetration of internet and smartphone users are one of the triggers for the rapid development of Fintech in Indonesia.

Figure 2. Total Financial Market Alternative (Fintech) in Several Countries in Asia (in USD million)

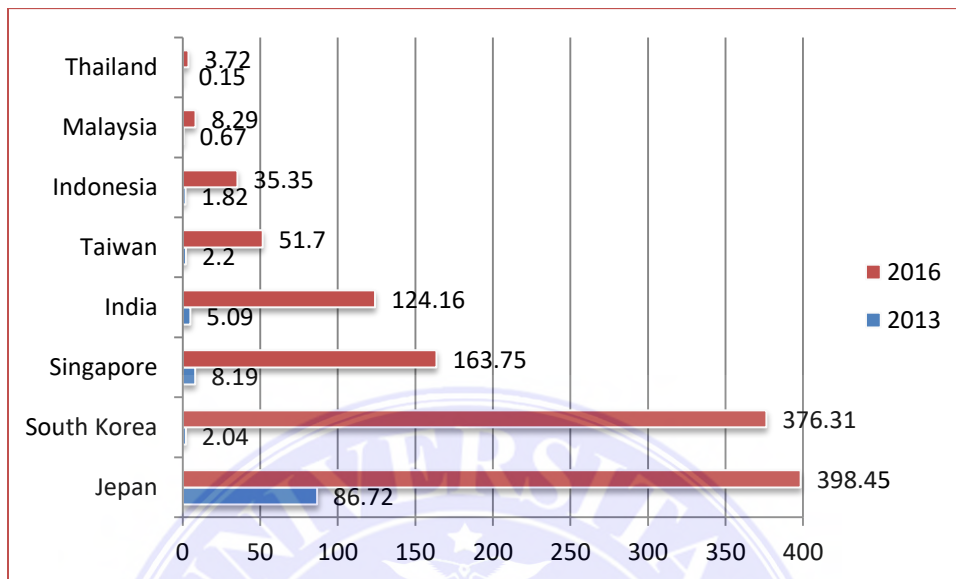
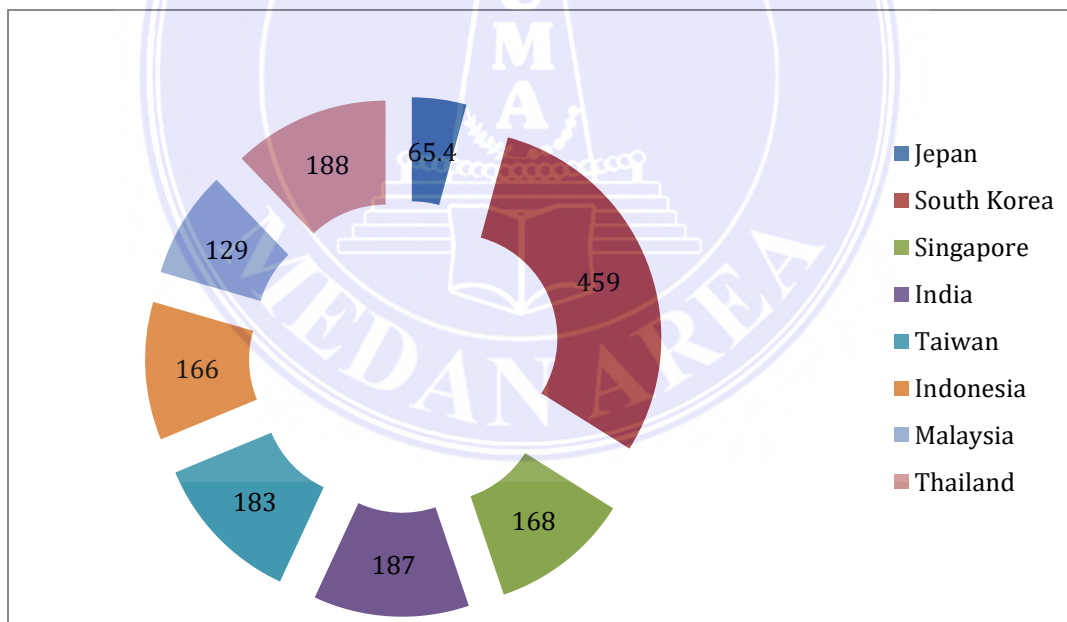


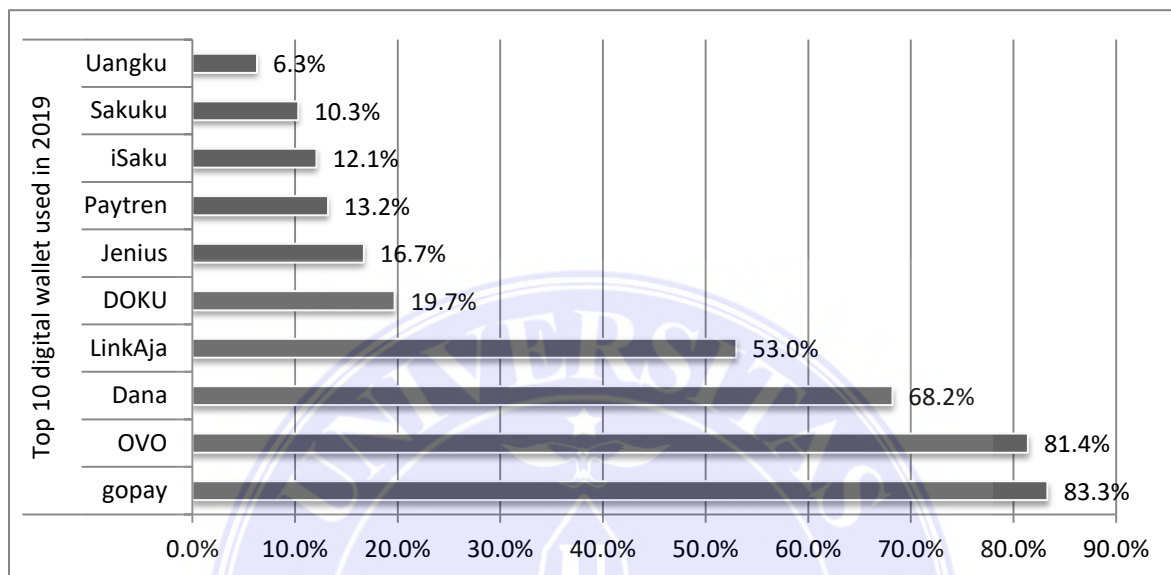
Figure 3. Percentages of growth of Fintech development in some Asian countries in 3 years



As depicted in Figure above, it is shown that South Korea has the highest percentage in 3 years with 459 percent, followed by the Thailand with 188 percent and India with 187 percent. These are the top three which obviously the Fintech development being supported by government/authorities through

supportive policies and providing other needed tools in platform integrations as well as the technology supports.

Figure 4. Top 10 Digital wallet used in 2019



In the below Figure shown that GoPay become the leaders of top 10 digital wallet used in 2019 with 83.3 percent, followed by OVO with 81.4 percent, Dana with 68.2 percent and LinkAja 53.0 percent, while others have percentage below 20 percent. However, based on the user awareness, OVO received 99.5 percent share of users, followed by GoPay and Dana with 98.5 percent and 98 percent respectively.

Figure 5. Top 10 investment used in 2019

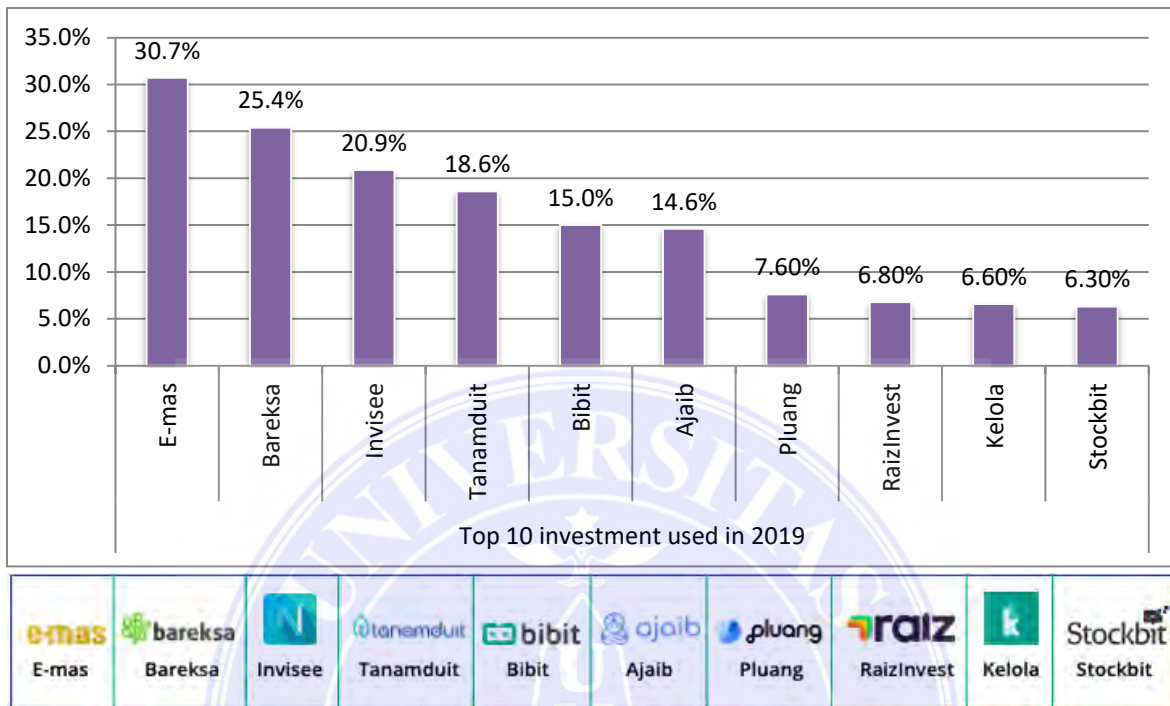
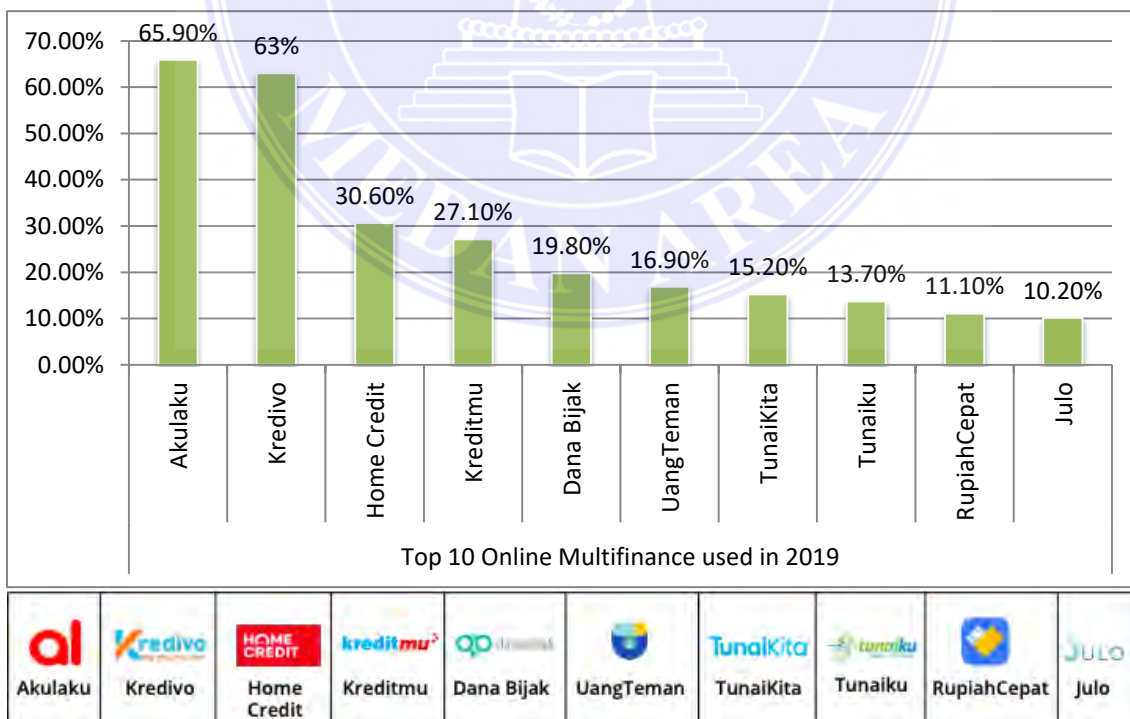


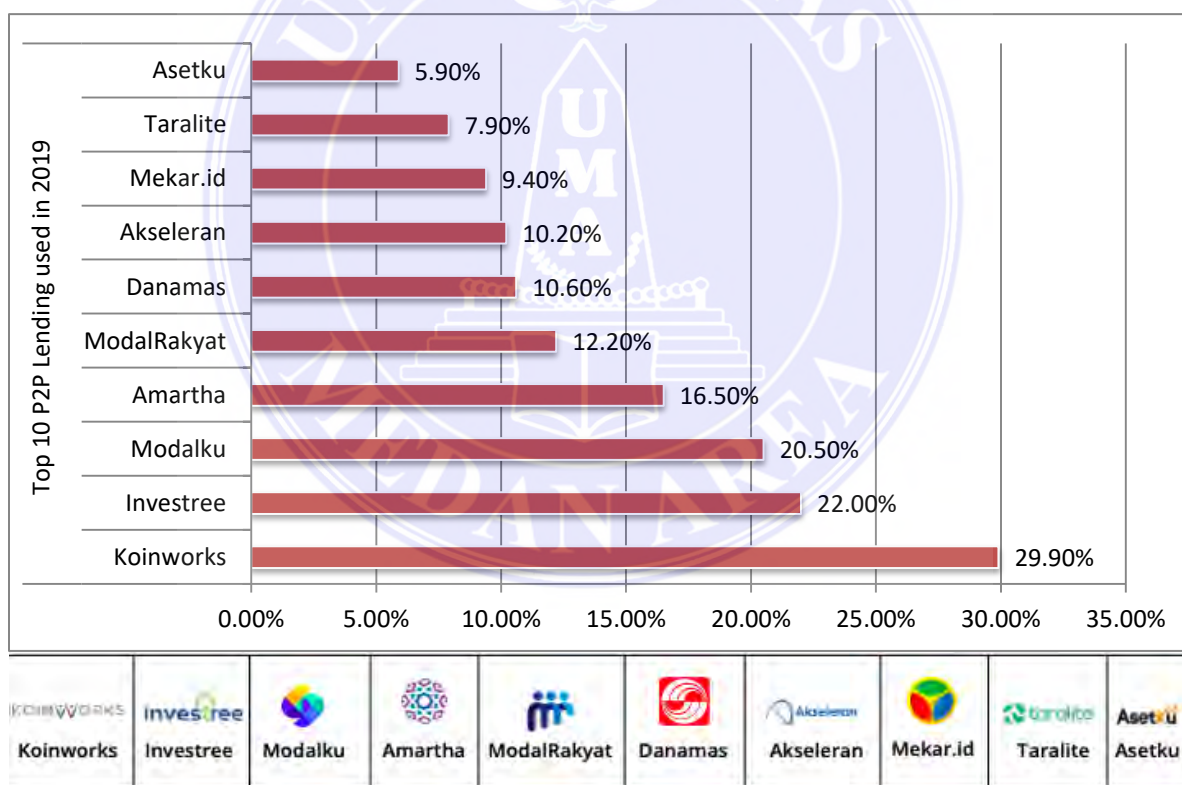
Figure 6. Top 10 Online Multi-finance used in 2019



Meanwhile as depicted in Figure above, it shows that Akulaku leads the top 10 for online multi-finance usage this year. Out of 330 respondents, 65.9 per cent were used Akulaku, followed by its nearest competitor Kredivo, with a 63 percent share of users. Moreover, the online multi-finance will provide and extend high-interest credit based on a borrower’s income and credit profile with a simple application process. This type of Fintech requires minimum identification and users will receive the loan within 24 hours.

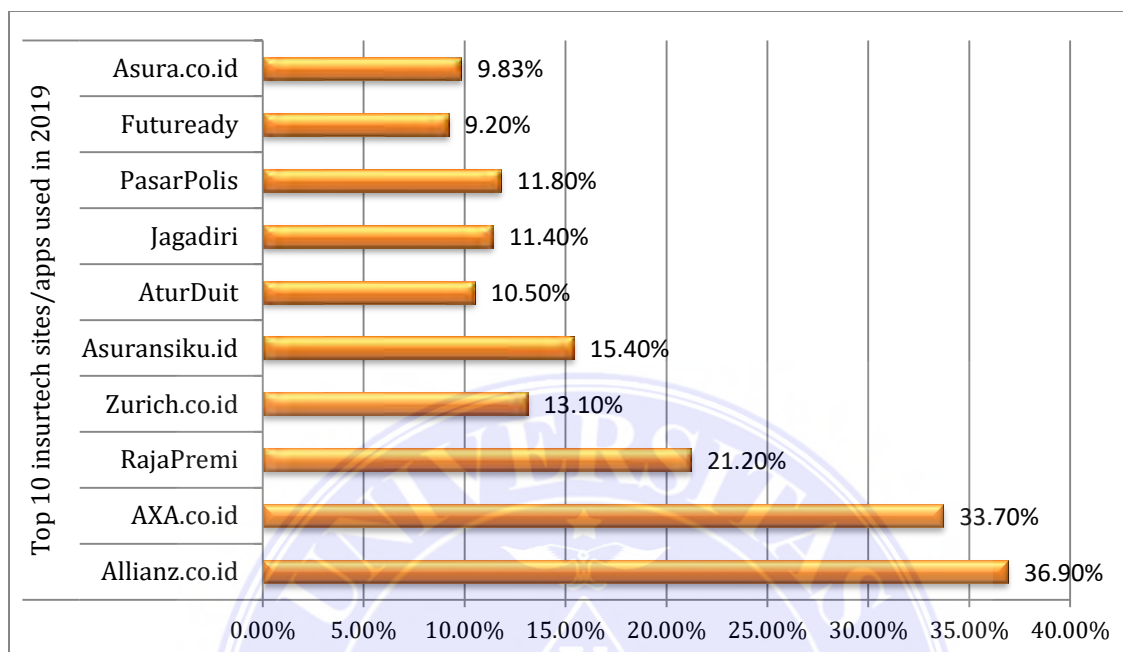
On the development of the P2P lending segment, it found grow significantly in the year of 2019 with an additional of 47 players entering the sector. A report from *KrASIA* revealed that KoinWorks is dominantly leading the sector with 29.9 percent share, followed by Investree with a 22 percent, Modalku with 20.5 percent and Amarthha with 16.5 percent.

Figure 7. Top 10 P2P Lending used in 2019



Source: Screenshot from Daily Social’s Fintech report 2019

The Figure above tells that KoinWorks lead the chart with 29.90 percent, Investree with 22.00 percent and followed with Modalku of 20.50 percent, while other have below 20 percent including Amarthha which predicted has raised new investments this year.

Figure 8. Top 10 insurance sites / apps used in 2019

The above Figure mentioned that Allianz.co.id has the highest percentage with 36.90 percent which closely followed by AXA.co.id with 33.70 percent, and RajaPremi achieved to 21.2 percent share. Meanwhile, the Insurtech startups like JagaDiri and PasarPolis are in the top ten list but with a smaller share of users. These surprising percentages indicate that the awareness on Insurtech is increasing this year. However, it seems the digital insurance products still preferred by the users which issued by the insurance corporates.

1.2 Status of Fintech, ICT Infrastructure, Description of Main Business, Social awareness of Fintech

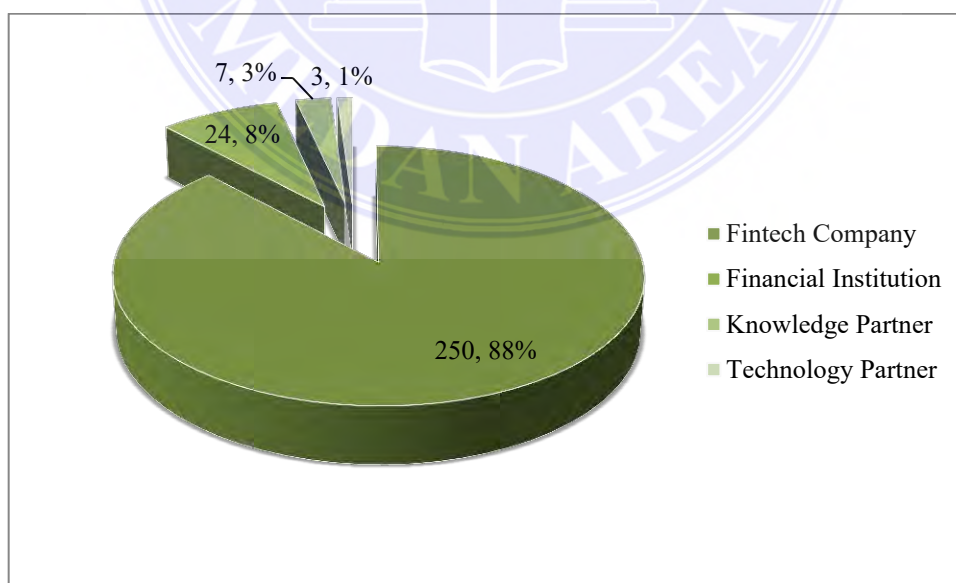
The low level of financial inclusion in Indonesia can threaten financial stability. Given the importance of financial inclusion, the government is necessary taking various efforts to improve access to finance at all levels society to formal financial institutions. Difficult access to today's conventional financial institutions by the society is the cause of low financial inclusion in Indonesia. To resolve such problem, there is an innovation in the financial system called financial technology (Fintech). The Fintech industry is not only engaged in the savings and loans but also insurance, any payments, or market support. The development of Fintech in Indonesia is quite rapid but has not been accompanied by qualified policy support to protect businesses and consumers itself. The many benefits obtained by

this Fintech are of course inseparable from various macro and micro financial risks. Therefore, the Government and related agencies need to formulate comprehensive policies for this Fintech in order to develop properly and be safe for financial stability.

As many banks' customers perceived the Fintech positively, the financial institutions attempt to amend and adjust the financial services landscape to cater different group or sectors in the coming years. With the introduction of big data or artificial intelligence, the Fintech will bring a new lifestyle and way of life of everyone in terms accessing financial services, for example that a person limit his/her activities outside home because may operate any business transactions remotely with smartphone. While at the same time, the gadget manufacturers and Internet providers must be more creative in selling affordable and compatible products in order the Fintech is more demanded and needed.

The emergence of Fintech is used by the millennial generation in creating new ventures in their start-up. There are many opportunities could be explore when no boundaries of payment terms as well as its access. The government also can reach the millennial in involving them in entrepreneurship activities or even providing help such financial assistance/credits. At the same time, the government may close the current gaps in financial inclusion and financing.

Figure 9. The Financial Services Education Institution in Indonesia

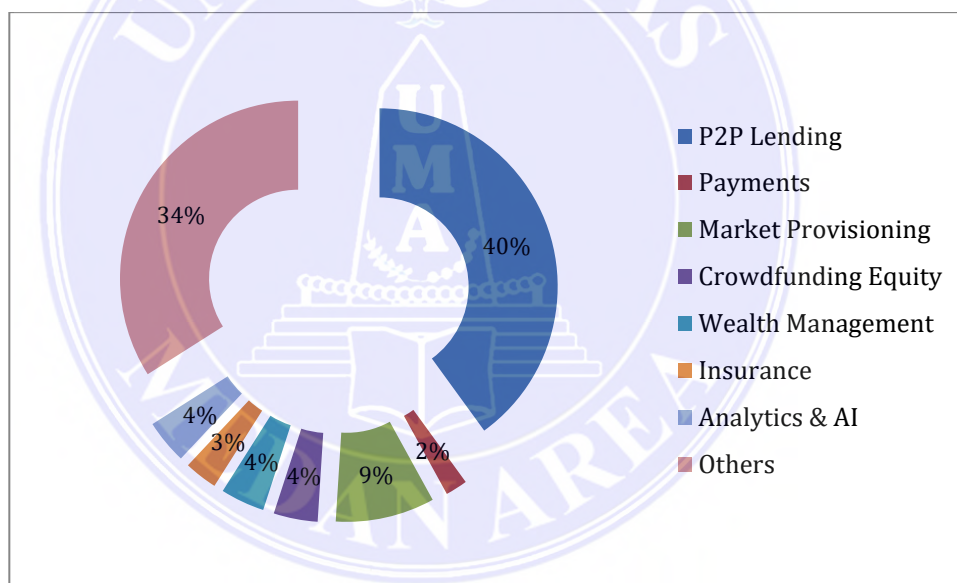


3. Industry and Market

3.1 (Business scope) Digital Payments, P2P lending, Equity Crowd funding, ICO/Cryptoassets, InsurTech

It is stated in the report, there are 99 companies of P2P Fintech (involve in funding) with the growth rate of 97.6 percent on the increase of total loans which distributed between Dec 2018 until June 2019. The total amount of loan is IDR44.8 trillion. Then, there is an increase of 59.23 percent in total borrowers between March 2018 until June 2019, with a total number of lenders is 272,548 and 77 percent of the lenders are located in Java Island (23%) and outside of Java with 6.9 million of borrowers. Meanwhile, there is a growth rate of 15 percent on the increase of e-money transaction value from June 2018 to June 2019 and 7 percent increase in e-money volume from June 2018 to June 2019 with a total transaction in value of IDR47.1 trillion and 2.9 billion in volume.

Figure 10. The speed of Fintech Growth in Indonesia: Payment & Funding

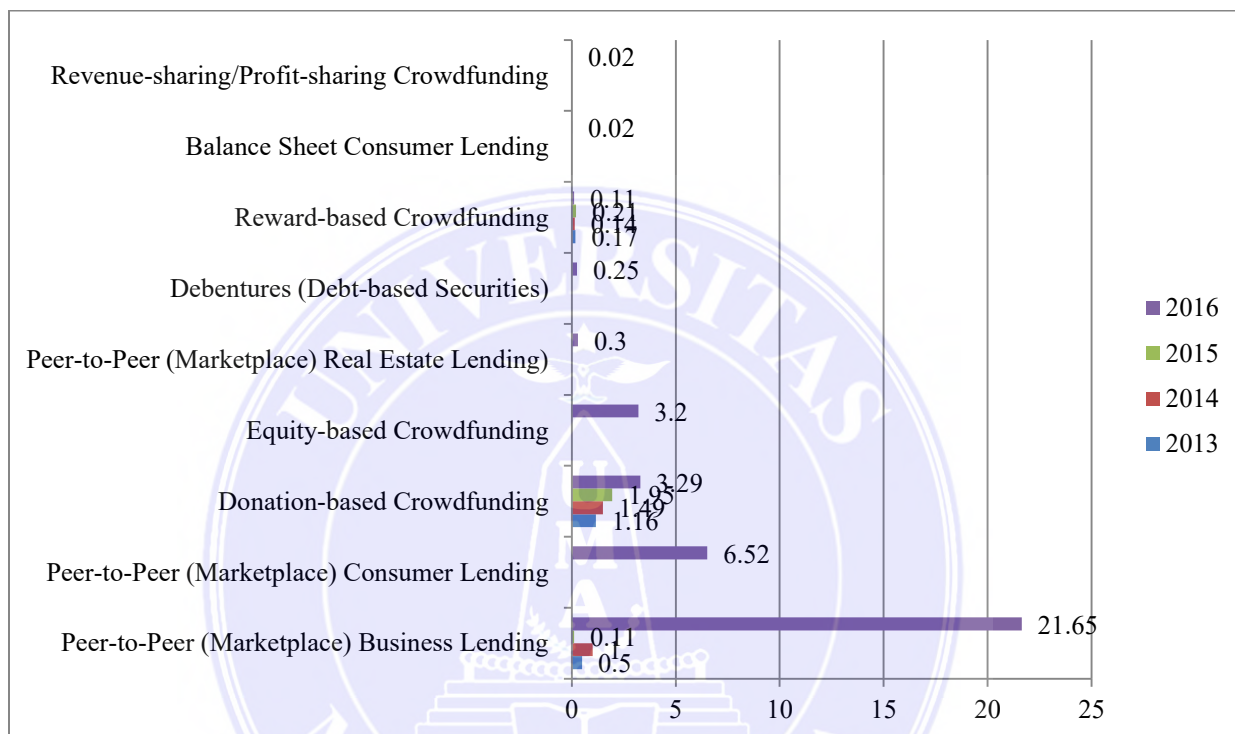


Source: OJK Fintech Statistics (Oct 2018); Bank Indonesia Payment System Statistics (2018); Indonesia Fintech Lanscape Report (2018)

The Indonesian Fintech Association (Aftech) recorded that 160 Fintech companies have joined. Of the various types of Fintech services, the scheme that contributed the most and with the highest growth in Indonesia was peer to peer (P2P) business lending. Where this activity in 2015 only earned a market of USD0.11 million and developed rapidly by USD21.65 million in 2016 (Figure 11). Based on the OJK report for the June 2018 period regarding the financial summary of Fintech (P2P lending), the number of lenders in May 2018 was 199,539 accounts, a rise of 72 percent from January 2018. Meanwhile, borrower accounts escalated by 461 percent from 330,154 accounts in January 2018 to

1,850,632 accounts in May 2018. The total loans in May amounted to IDR6.16 trillion or a rise of 105 percent from January with an average value of loans disbursed of IDR94,050,384 and the smallest loan amount is IDR5,000.

Figure 11. Fintech Alternative Financial Market Volume Based on the Model in Indonesia (in USD million)



Another issue that the existence of this Fintech would be a threat to conventional institutions that exist today. Both Fintech and conventional financial institutions have different business models which, when it's synergized, will strengthen the national economy. The target of the P2P lending service is the small-medium business (SME) segment that has the capacity to develop but lacks funding, unbankable and ineligible for bank credit, whereby the P2P lending acts as a bridge for this group to grow. The more P2P lending customers who upscale from creditworthy to bankworthy, thus the banking segment will automatically grow. The following good examples of banking and Fintech synergies can be seen in China where the banking sector and its P2P lending Fintech industry can develop together.

3.2 (Major companies) Business Model and Type

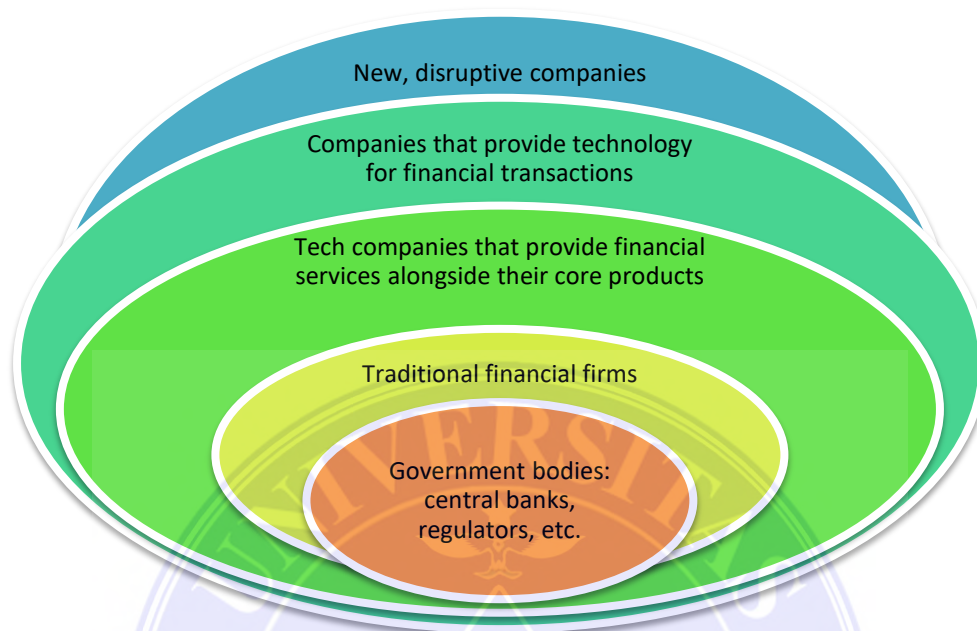
The Players of Fintech

There are players of Fintech that universally running the financial services business¹² (see Figure 13):

- i. The government entities consist of regulators, central banks, sovereign wealth funds, and all authorities that issue the licenses and supporting the financial sector.
- ii. The traditional financial services companies that become as investors, potential strategic acquirers and innovation promoters. For example, Citibank, that increasingly implicated in the sector through its various efforts as an accelerator, foreign acquisitions, and a venture capital investment team that invests the bank's own funds.
- iii. Technology companies with financial services, for example, Uber and Amazon that have positioned their teams (engineers) and experts to strengthen the efforts in escalating their emergence in the industry.
- iv. Technology companies with financial transactions, for example, Bloomberg, Thomson Reuters, American Express and Visa are part of the Fintech ecosystem and require to be sustained with all conditions and developments.
- v. Professional investors, which can be categorized based on size (small or large fund), stage (seed, late venture, private equity, etc.), and finally for source of funds, such as pension funds, strategic investors, family offices, etc.
- vi. New, disruptive companies operating in different industries. These companies start by "unbundling" one of the services provided by the current players.

¹² <https://www.toptal.com/finance/market-research-analysts/Fintech-landscape>

Figure 12. The Players of Fintech



Fintech Players in Indonesia

Some progressive Fintech companies have grown tremendously which also perceived positively by the customers. For example, GOPAY is a major digital wallet provider of GoJek (a multi-service platform known as unicorn with an estimate value of USD1 billion). While, OVO become another leading digital wallet service where both market shares now achieved over 55 percent of all virtual payments in Indonesia. However, encouragement needs to be done for the millennial to know and learn about Fintech since it is reported that they only saved for 10 percent of their revenue due to low financial literacy.

The Financial Stability Board (FSB) as an international body that monitors and provides policy recommendations on the global financial system had categorized Fintech based on the types of innovation as follows:

- 1) Payment, clearing and settlement. This is a Fintech that serves payment system services both operated by the banking industry and the Central Bank of Indonesia such as Bank Indonesia (BI) Real Time Gross Settlement (BI-RTGS), BI National Clearing System (SKNBI) and BI Scripless Securities Settlement System (BI-SSSS). For instance, Kartuku, Doku, iPaymu, Finnet and Xendit.

- 2) The e-aggregator. This type of Fintech collects and processes data to be used by consumers in making decisions. This kind of startup serves product ratios of price, features and benefits. For instance, Cekaja, Cermati, KreditGogo and Tunaiku.
- 3) Risk management and investment. This type of Fintech gives services such a robo advisor (software that offers financial planning services and an e-trading/e-insurance platform). For instance, Bareksa, Cekpremi and Rajapremi.
- 4) Peer to Peer lending (P2P). This type of Fintech comes with the lenders (investors) and loan seekers in one platform. Then, the investors will receive interests on the loaned funds. For instance, Modalku, Investree, Amarthta and KoinWorks.

Below is Table on the category of business process for Fintech companies with some examples:

Table 2. Business Process of Fintech

Type of interaction	Business process	Some examples
Customer-to-customer (C2C)	Payment	Digital wallet, peer-to-peer (P2P) payment
	Investment	Peer-to-peer (P2P) lending, equity crowdfunding
Business-to-customer (B2C)	Lending	Crowdfunding, micro loan, credit facilities
	Insurance	Risk management
Business-to-business (B2B)	Infrastructure	Security, data management
	Multi-processes	Big data analytics, predictive modeling

Below as depicted in Figure 13 is Fintech Ecosystem with its role and responsibilities:

Figure 13. Financial Digital Ecosystem



Regulator	Customer	Accelerator	Digital Utilities
<ul style="list-style-type: none"> Financial: OJK Payment System: BI Telkom: Kemenkominfo APU/PPT: PPTK 	<ul style="list-style-type: none"> Protection Education 	<ul style="list-style-type: none"> Research Center Innovation Hub 	<ul style="list-style-type: none"> Digital Signature Cyber Security CISRT Social Data Scoring Big Data Provider Blockchain Artificial Intelligence Biometric Recognition Tech
Service Provider	Facilitator	Capacity Builder	Incubator
<ul style="list-style-type: none"> Fintech LJK 	<ul style="list-style-type: none"> Association Consultant University Practitioner 	<ul style="list-style-type: none"> Education and Training Center Schools University Education Institutions 	<ul style="list-style-type: none"> LJK Local Government/Municipals Other Institutions

As depicted in Figure 15 below, the development and growth of Fintech lending players will rely on the positive respond of borrowers and lenders. Achieving satisfaction from these customers, the Fintech lending players will be able to sustain its business operations and thus give significant impact to the market segments in Indonesia. In this Figure, it shows the flow of Fintech lending starts from lender of retail/individuals and institutions that provide capital and deal with borrower of individuals

and MSMEs that need financial assistances through P2P lending platform, then followed with the loan disbursement and repayment and withdrawal channel. This P2P lending platform will act as the connector that link the borrowers to the lenders and connect the services to the credit bureau in analyzing the risks and potential borrowers' credit history. Via online-to-offline channel, Fintech lending will achieve extensive coverage.

Meanwhile, there are various methods of loan disbursement such as cash loan, installments or non-cash disbursement (raw materials) and repayment within the Fintech lending business model such as e-commerce/payment apps, bank transfer, retail store or agent.

Figure 14. Typical Marketplace Model of Fintech Lending

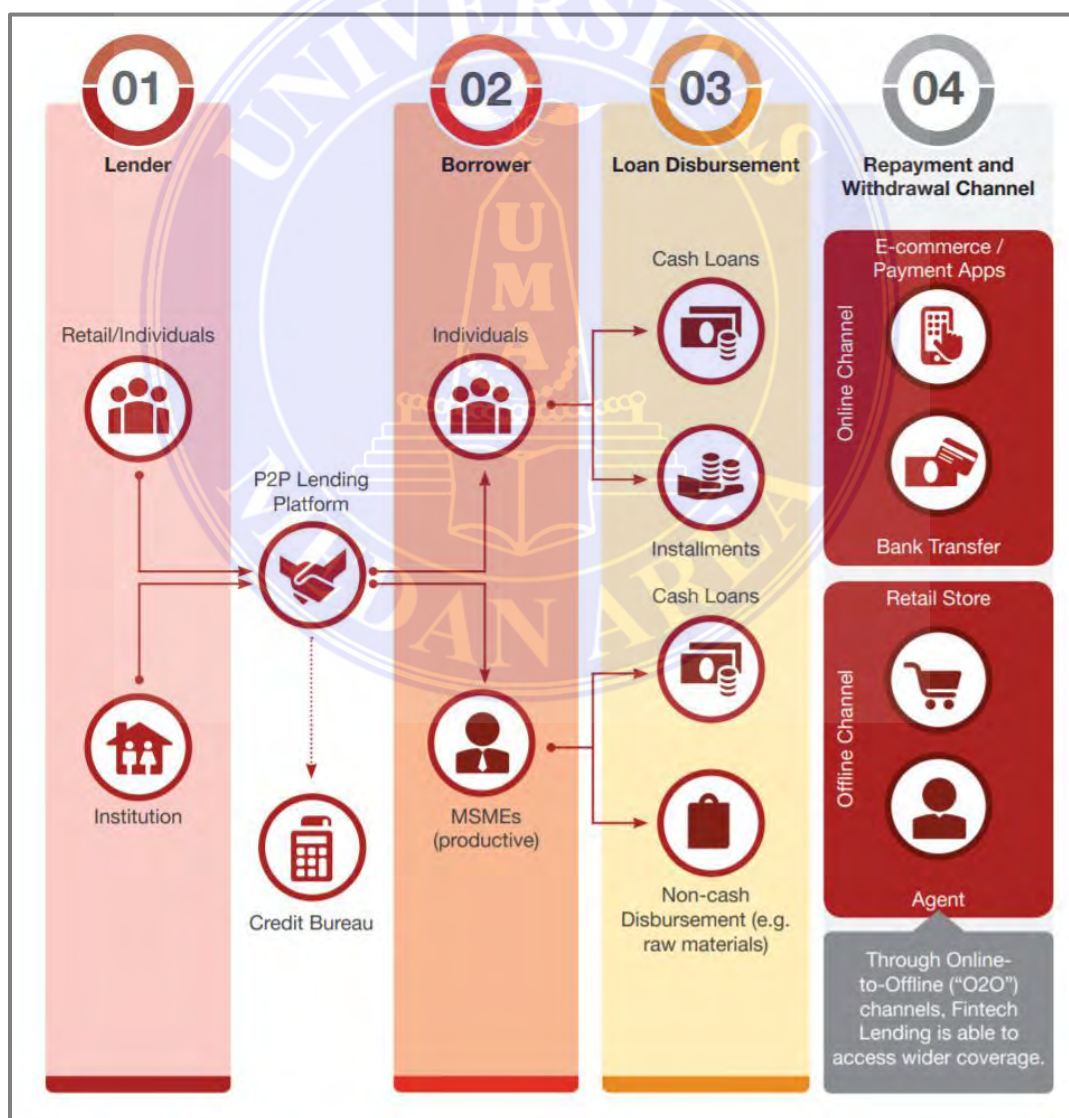
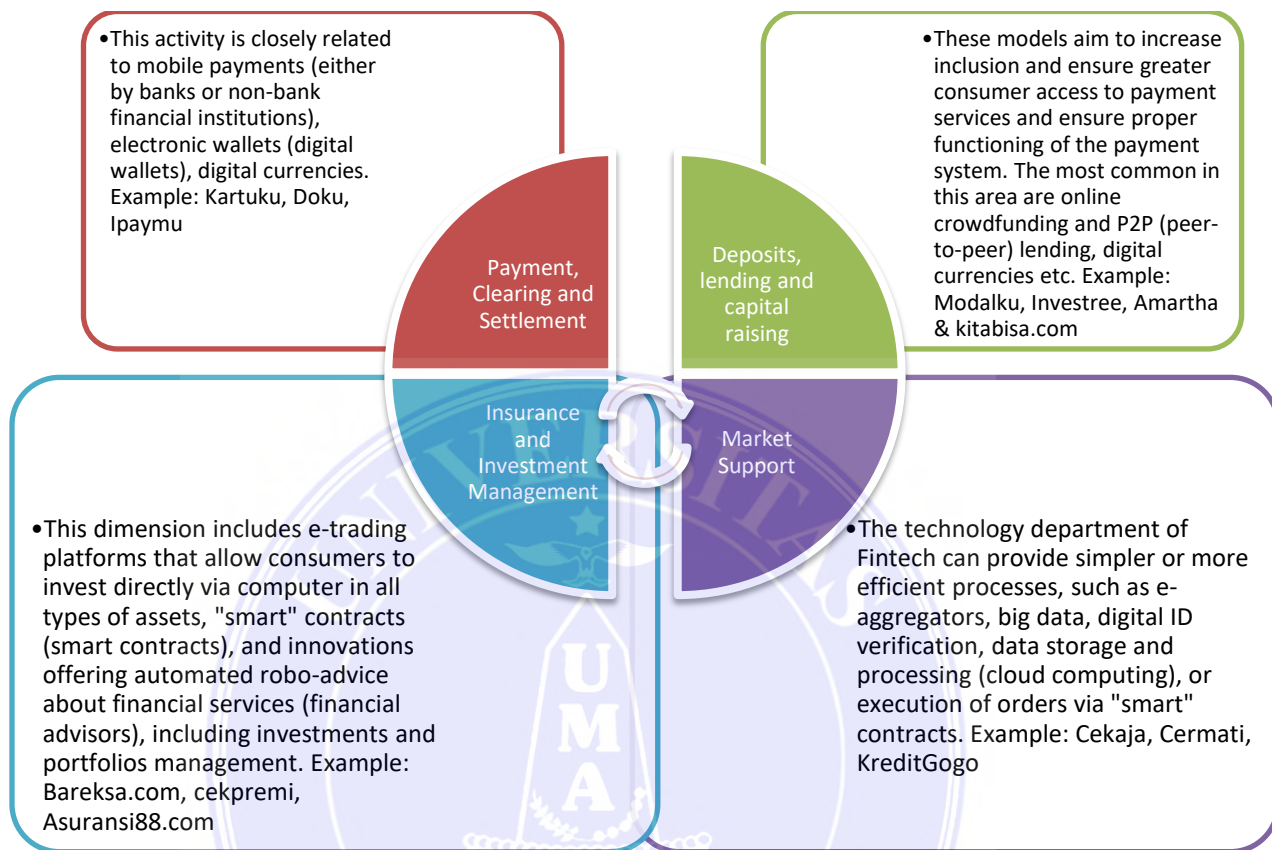


Figure 15. Types of Fintech Financial Services and Examples



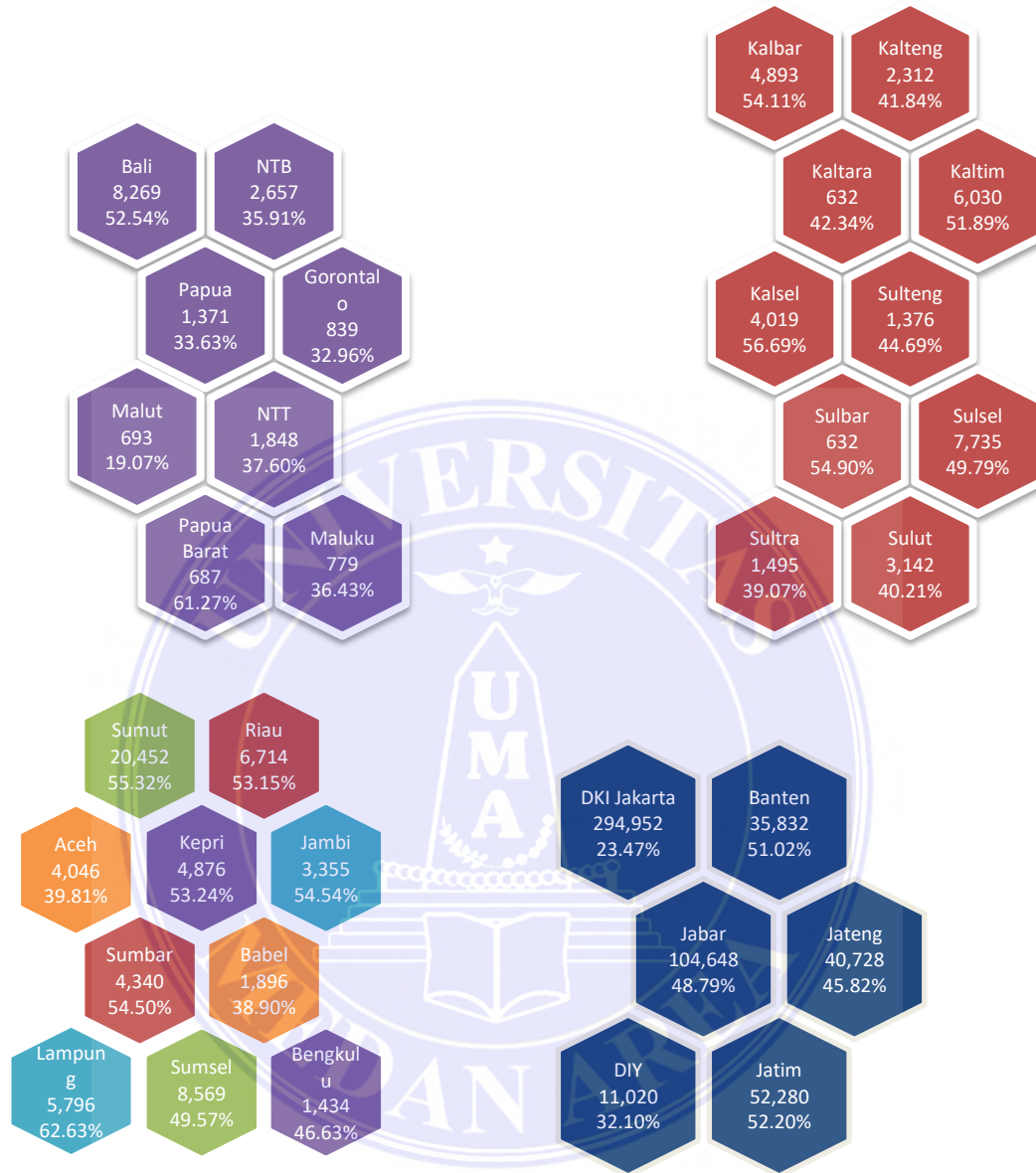
Source: FSB (2017); Nizar (2017)

3.3 Market growth rate, financial inclusion, number of internet users, investment, revenue, number of companies, number of employees

Total Accumulated Lender Accounts

Sumut: Sumatera Utara	Kepri: Kepulauan Riau	Babel: Bangka Belitung	Sumbar: Sumatera Barat	Sumsel: Sumatera Selatan	Jabar: Jawa Barat	Jateng: Jawa Tengah
Malut: Maluku Utara	Kalbar: Kalimantan Barat	Kalteng: Kalimantan Tengah	Kaltim: Kalimantan Timur	Kaltara: Kalimantan Utara	Kalsel: Kalimantan Selatan	Jatim: Jawa Timur
Sultra: Sulawesi Tenggara	Sulut: Sulawesi Utara	Sulteng: Sulawesi Tengah	Sulbar: Sulawesi Barat	DIY: Daerah Istimewa Yogyakarta	NTB: Nusa Tenggara Barat	NTT: Nusa Tenggara Timur

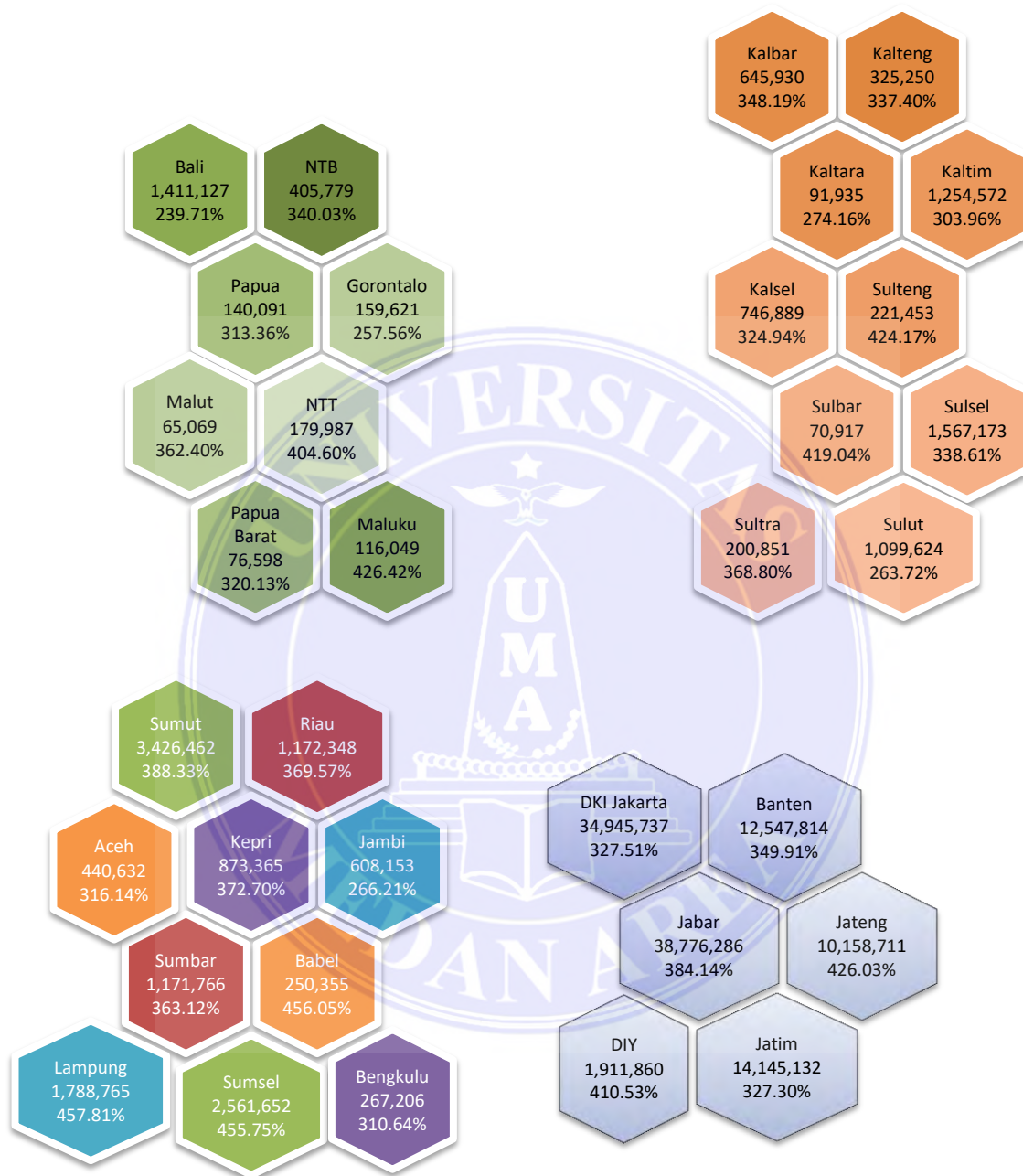
Figure 16. Total Accumulated Lender Accounts



As per 31 May 2020 (OJK Report, 2020), the total accumulated lender account based on the provinces' segregations is 654,201 entities with $\Delta\%$ of 36.22 percent if to compare with the entities in the same period of May 2019 with 480,262 entities. This consists of domestic portion of 650,357 entities with $\Delta\%$ of 36.23 percent and foreign portion of 3,854 entities with $\Delta\%$ of 34.15 percent. The $\Delta\%$ is based on year-on-year basis.

Total Accumulated Borrower Transactions

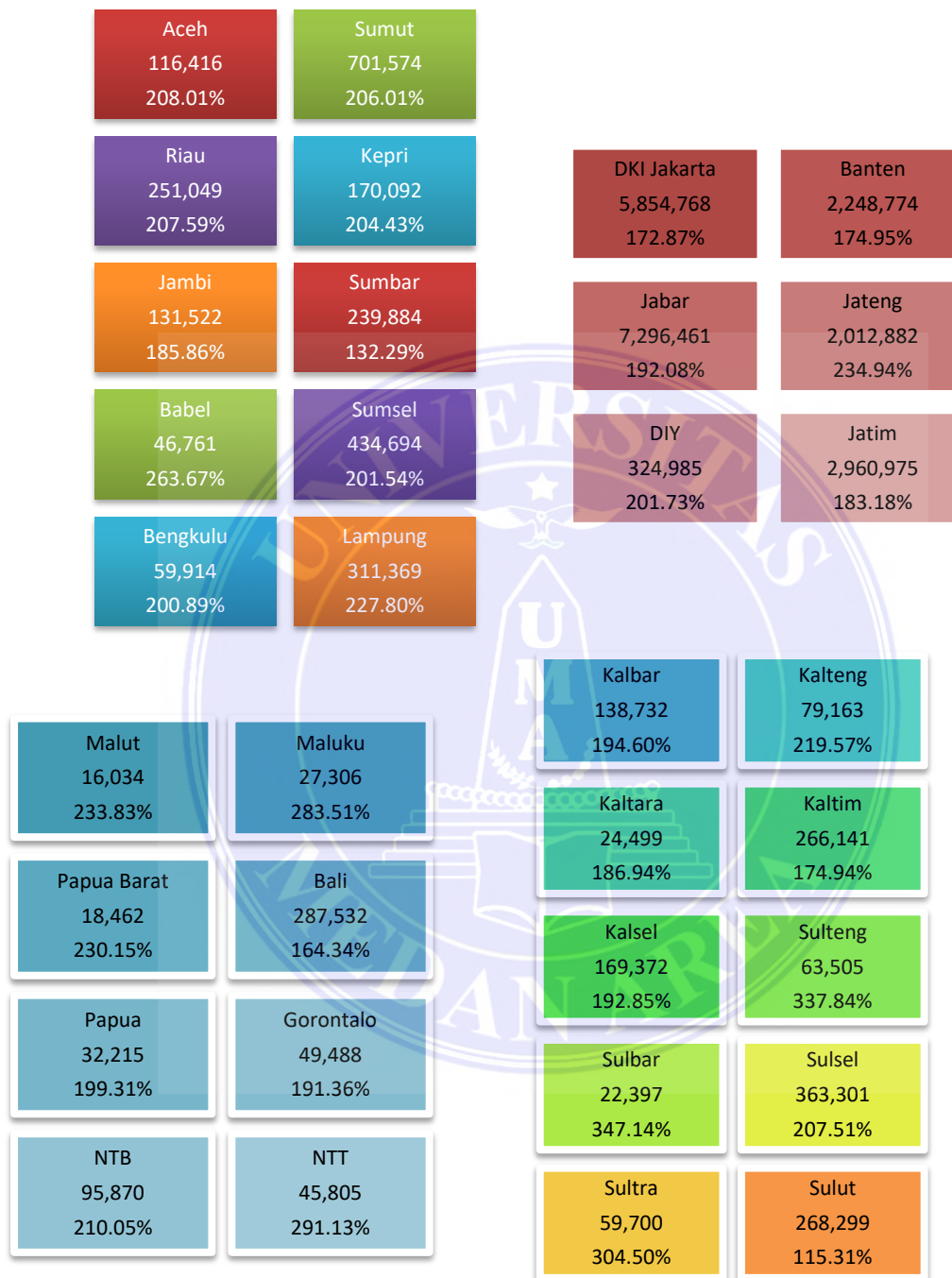
Figure 17. Total Accumulated Borrower Transactions



As per 31 May 2020 (OJK Report, 2020), the total accumulated borrower transaction based on the provinces' segregations is 133,825,159 accounts with $\Delta\%$ of 356.66 percent if to compare with the accounts in the same period of May 2019 with 29,305,224 accounts. The $\Delta\%$ is based on year-on-year basis.

Total Accumulated Borrower Accounts

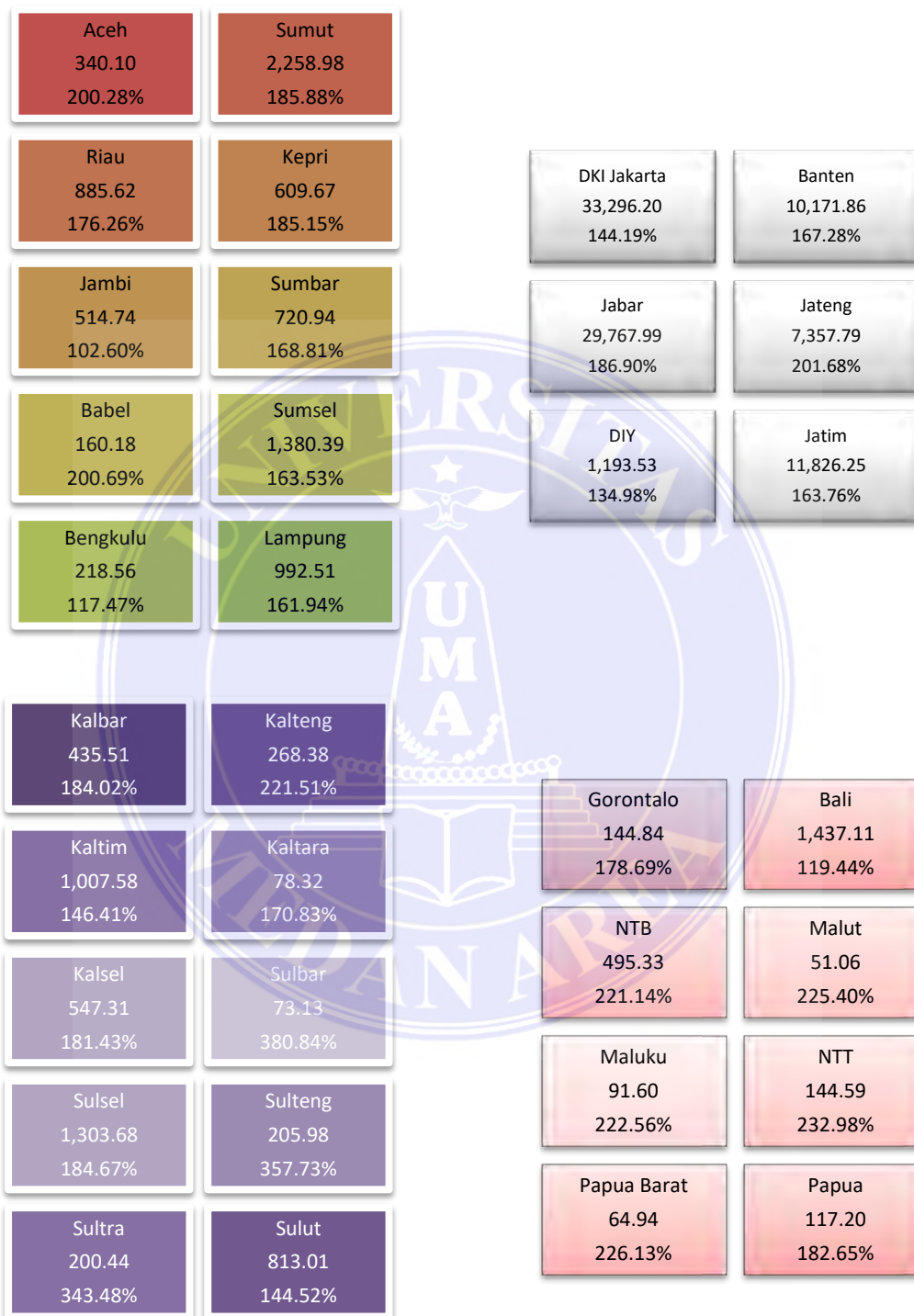
Figure 18. Total Accumulated Borrower Accounts



As per 31 May 2020 (OJK Report, 2020), the total accumulated borrower accounts on the provinces' segregations is 25,189,941 entities with $\Delta\%$ of 187.87 percent if to compare with the entities in the same period of May 2019 with 8,750,425 entities. The $\Delta\%$ is based on year-on-year basis.

Total Accumulated Loan Distribution

Figure 19. Total Accumulated Loan Distribution



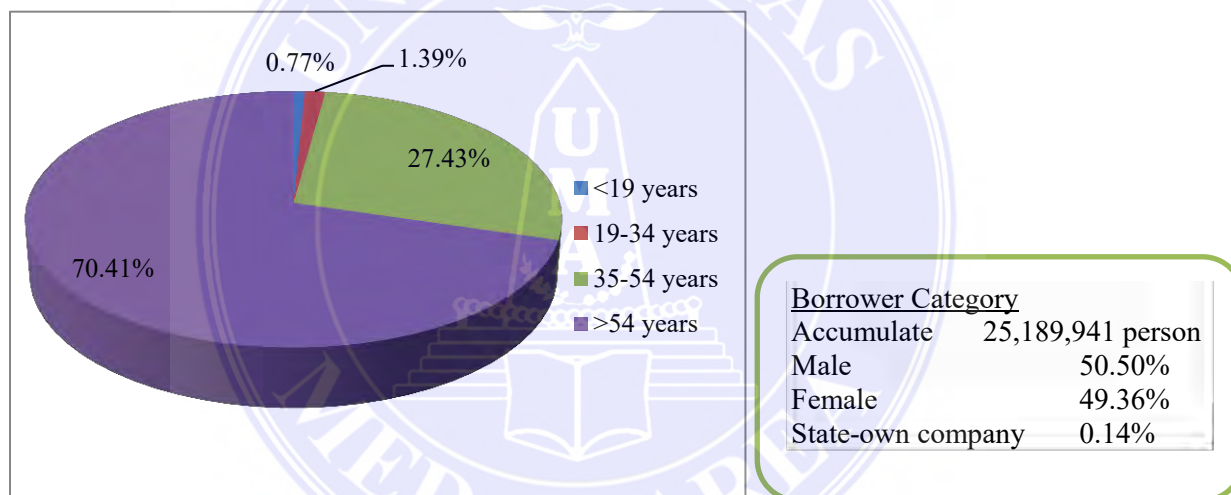
*in Billion IDR

As per 31 May 2020 (OJK Report, 2020), the total accumulated loan distribution based on the provinces' segregations is IDR109,175.31 billion with $\Delta\%$ of 166.03 percent if to compare with the amount in the same period of May 2019 with IDR41,038.87 billion. The $\Delta\%$ is based on year-on-year basis.

Characteristics Users of Lending Fintech

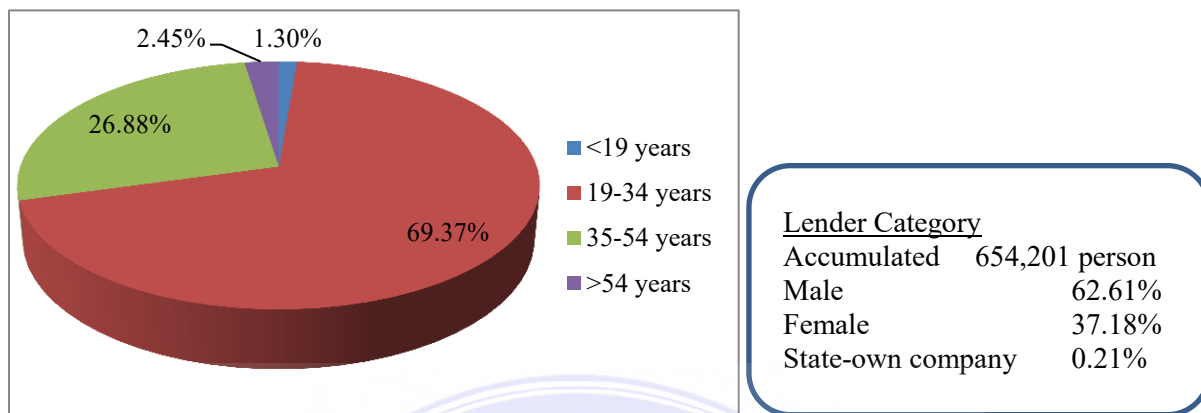
Based on a survey by OJK in May 2020, 50.50 percent of over 25 million borrowers are male and 49.36 per cent of them are female. Among these figures, the borrowers with a group age of more than 54 years is dominating the category with 70.41 per cent and followed with a group age of 35 – 54 years old with 27.43 percent. Out of these over 25 million borrowers, only 0.14 percent are borrowed under their state-own company rather than an individual basis.

Figure 20. Characteristics of Borrower Category



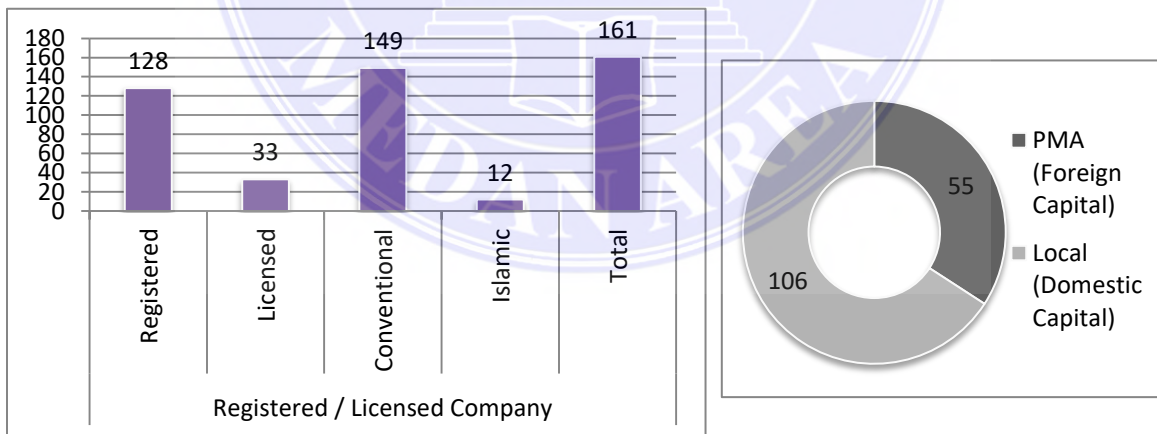
Meanwhile, 62.61 percent of over 654,201 lenders are male and 37.18 percent of them are female. Among these figures, the lenders with a group age of 19 – 34 years old is dominating the category with 69.37 percent and followed with a group age of 35 – 54 years old with 26.88 percent. Out of these 654,201 lenders, only 0.21 percent are lended under their state-own company rather than an individual basis.

Figure 21. Characteristics of Lender Category



Based on the Figure 22, it is shown that 128 companies have registered and other 33 companies are licensed with OJK. While 149 out of 161 of Fintech companies are based on conventional system and only 12 of them are adopting Islamic financial system. Moreover, 55 Fintech companies are supported or funded by foreign capital and majority of 106 companies with domestic capital. Means that the local Fintech companies are dominated and owned by the Indonesian businessmen rather than foreign investors.

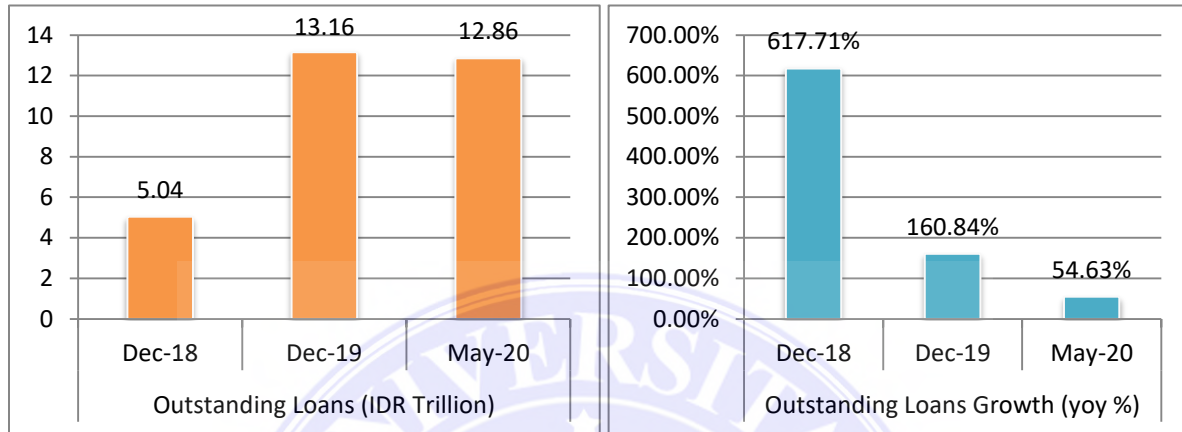
Figure 22. Registered/Licensed Fintech Companies and Its Capital Status



Meanwhile, based on Figure 23, it indicated that there is a significant growing of outstanding loan in 2019 (13.16 IDR Trillion) compare in 2018 (5.04 IDR Trillion). While as at May 2020, it is slightly decreasing to IDR12.86 Trillion. This is due to a slowdown economy of pandemic Covid-19. Moreover, the growth of outstanding loan is decreasing from 617.71 percent in 2018 to 160.84 percent in 2019 and then to 54.63 percent in May 2020. This is a positive sign that the Fintech system

is functioning by enabling a reliable collection system as well as an increase of customers' acceptance on Fintech services.

Figure 23. Outstanding Loan of Fintech Lending



4. Policy (support) and Regulation

4.1 Fintech Industry Promotion Policy

The digitalization program in Indonesia could be a source for financial innovation. As a large nation with affluent potential, this country would be one the future Fintech hubs in Asia. There must be right strategies, proactive approaches and concrete actions to achieve such expectations. With supportive and accommodative regulations, the financial services including the Fintech will grow consistently. The regulations must be impartial and balanced to ensure sustainability in creating innovation. The continuous efforts of stakeholders contribute to a stable, inclusive and resilience digital financial systems. It is important to starts with a new regenerative model of finance that provide easiness, flexibilities and conveniences for the people.

Indonesia requires to establish an integrated Fintech blue print in line with a national digital economy strategy which intended to create a connected ecosystem that link to data and customer protection, regulation, monitoring and supervision, innovation center, risk management, and cyber-risks. All these endeavors must be supported by establishing facilities and infrastructure with collaborations among regulators (OJK) and other stakeholders domestically and internationally. An extensive network also will help the Fintech companies engage continuously including with other financial institutions, microfinance, cooperatives and community agents. In one mission, all Fintech players are able to create values, achieve a shared vision, contribute positively to a more integrated and stable financial sector in Indonesia.

The Fintech industry should be supported by the regulators that giving guidance and supervise all the time. Meanwhile, a balanced regulatory framework of accommodating the interests of the financial markets and customer protection would a classic challenge especially when the innovative actions are demanded by any Fintech players. Creating innovation is crucial to establish a dynamic and resilience Fintech development.

Any regulations or policies that arranged based on certain characteristics suitable to other stakeholders' interests. Panetta (2018) highlighted the key principles in preparing Fintech regulation as follows:

- i. The market or platform must be level and tech-neutral in order to avoid supervisory arbitrage.

- ii. It must be adaptable and flexible especially in a rapid change of technology that affects the Fintech in the future.
- iii. A collaboration of authorities in financial services with regulators is vital towards dealing on data protection, cyber-risk, and antitrust.
- iv. The regulation should have a universal dimension to accommodate with the global changes, technology development and market fluctuations in financial sectors.

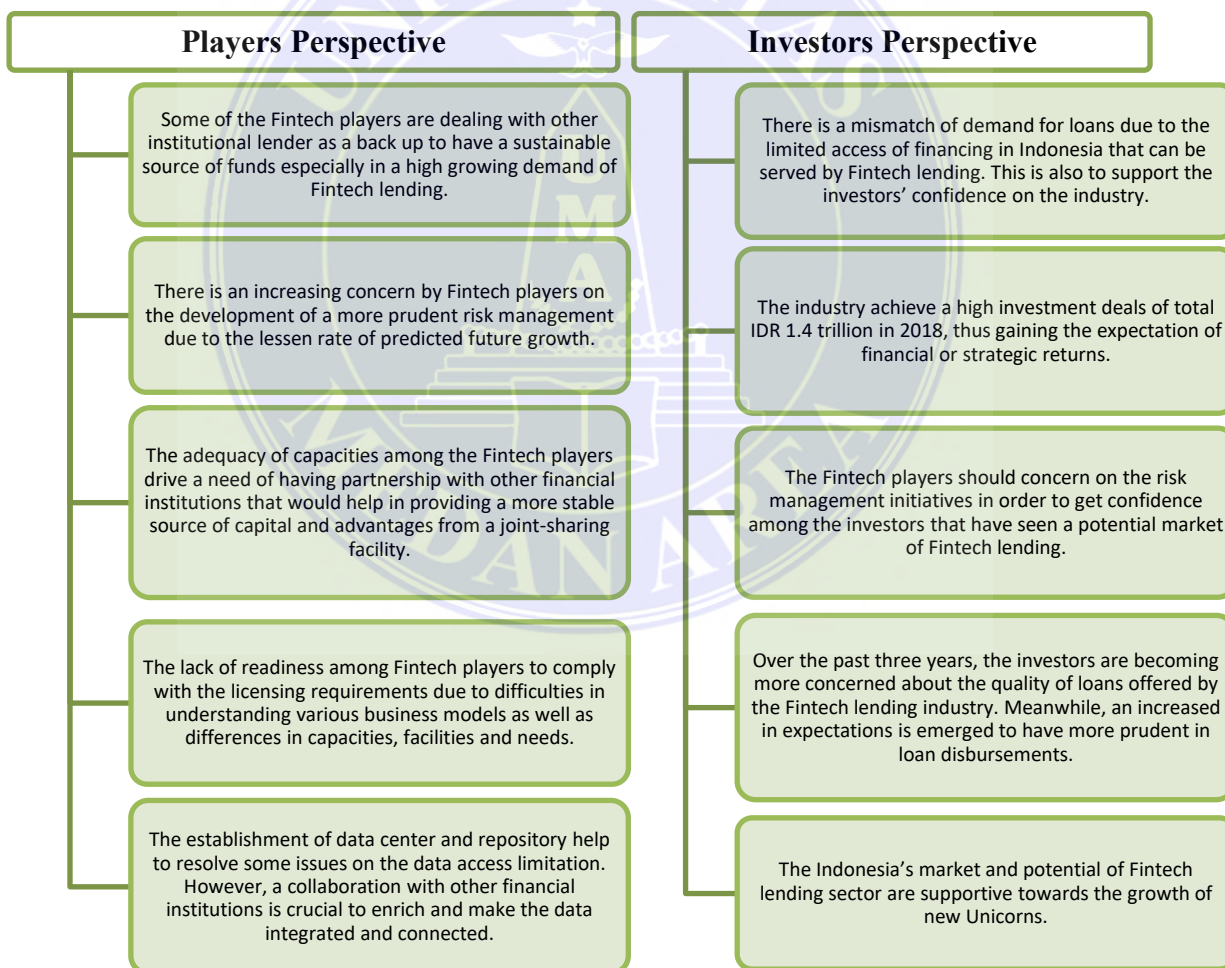
The policy of government on Fintech players must follow the updates or any changes. In other words, the government should act accordingly and immediately on the need of regulations for Fintech industry or otherwise left behind compare to the speed of innovation that taken place. This confirmed by a survey conducted Daily Social in 2018 that revealed the government act and respond slowly on Fintech regulations. With this information, OJK employs five strategies to accommodate digital financial innovations in Indonesia:

1. **Holistic and balance strategy.** It is a need of having Fintech could provide customer protection, and build a trust among stakeholders in the industry. An integrated system of Fintech is expected to deliver and strengthen innovation and competition under supervision of OJK.
2. **Agile regulatory framework.** It is a need to have principle-based regulations for digital financial innovation in the Fintech industry which will be set by OJK. This will allow some discretions and flexibilities for the Fintech companies to create their own codes of conduct and standard operating procedure (SOP).
3. **Market conduct supervision.** The Fintech companies are monitored and supervised the Fintech companies according to the given regulations. However, other related aspects such as risk management, compliances and corporate governance should be managed by the Fintech companies themselves. Through the Fintech Association, OJK could observe the Fintech development.
4. **Regulatory Sandbox.** Regulatory sandbox is a mechanism of assessing suitability of the business model and process, financial instruments and governance that must comply specific set-criteria. This testing will be done by OJK and aimed to widespread the understanding about Fintech systems, responsibilities and risk, so thus sharpen its business models and performance.

5. **Digital Innovation.** Another initiative by OJK is establishing a Fintech center where the innovative works and technologies are exercised including on understanding responsible finance. This center called “OJK infinity” – “OJK Innovation Centre for Digital Financial Technology” that launched in 2018. The aim of this OJK Infinity is to become a platform of learning and innovation relates to Fintech, collaboration among stakeholders and as a laboratory for regulatory sandboxing.

To support the industry, both players and investors must provide robust financing through collaborations with financial institutions as well as creating new “unicorns” in the new way of lending.

Figure 24. Players and Investors Perspectives



4.2 Government Agencies and Types of Regulation

It is mentioned that Fintech is a new topic or aspect that has not been touched by many regulations. Currently there are laws and regulations concerning Fintech activities, namely OJK Regulation No. 77/POJK.01/2016 concerning Direct Lending and Borrowing Services based on Information Technology-Based and Bank Indonesia Regulation No.19/12/PBI/2017 concerning the Implementation of Financial Technology. In order to minimize the risks that occur to both micro and macro finance, it is necessary to have a synergistic collaboration for BI and OJK in drafting regulations related to Fintech that are more integrated and comprehensive.

There are several things that need to be considered in drafting regulations or policies related to Fintech, namely:

1. Education related to the importance of Fintech for improving the people's economy
2. Increasing consumer protection through policies that tighten the registration system with the aim of minimizing fraud and increasing user trust.
3. Issuing a code of conduct regarding the online lending and borrowing mechanism that is responsible by the Fintech association.
4. Mitigating the risk of hacking by companies through compiling contingency plans against various cyber-attacks, incorporating cyber security in the initial system design or using cyber security vendor services. The government also needs to increase financial and technological literacy to reduce the probability of cyber events/incidents that have an adverse effect on financial stability.
5. The provision of guarantees for transactions related to payment system failures caused by administrators and its supporters such as internet access.
6. Cooperation with banking institutions to further strengthen the capital in improving Fintech liquidity itself.

The Government and other related institutions need to continue to monitor the risks of the occurrence of a trend of procicality behavior, even though until now there are no signs of a systemic impact from Fintech activities. The limited availability of official or formal data and personal secrets in the Fintech area poses a challenge for the authorities to assess the implications of Fintech. So that the authorities need to develop capacity and formulate policies in order to access existing and new sources of information on the implementation of Fintech.

Specifically, the Financial Services Authority issued its regulation No. 13/POJK.02/2018 on Digital Financial Innovation in the Financial Services Sector. This regulation emphasizes on the existence of a regulatory sandbox that permits innovative Fintech companies to assess their business models for no longer than one year, extendable for another six months if necessary, without having to obey on certain OJK regulations. For example, in April 2019, PT Avatec Services Indonesia (Avatec) was selected by the OJK to participate in its regulatory sandbox programme in order to provide credit-scoring solutions. Avatec considers an influence of artificial intelligence and machine-learning technologies in providing digital credit assessment solutions.

There are two main regulators that regulate the financial technology products and services, namely OJK and Bank Indonesia. The following are the main activities regulated by both regulators that related to licensing requirements:

1. Extending loans

Any financial institutions commonly provide various form of lending based on the given license by OJK. This includes the loan which are provided given by banking institutions and others, and even the Ministry of Cooperatives and Small Business Enterprises (MOCSBE). Means that every loan is extended but regulated strictly by OJK including that been given by P2P lending companies.

2. Deposit-taking and Factoring

The deposits (time deposits, deposits certificates) or savings or other banking products are served by the banks or other financial institutions based on the licensed given by OJK as well as the savings and lending cooperatives under licensed of MOCSBE specifically only engage on deposit-taking. Meanwhile, a product of factoring which offered by the banks or multi-finance companies is also licensed by the OJK.

The existing regulations under OJK and Bank Indonesia are summarized in figure below.

Figure 25. Summary of Regulations on Fintech in Indonesia

a. OJK Regulation No.77/POJK.01/2016 on Information Technology-based Lending

The regulation is directed to support the growth of Fintech P2P lending platforms including customer protection, as new financing alternatives for communities that still adaptations if to compare the current financial service institutions.

b. OJK Regulation No.12/POJK.03/2018 on the Implementation of Digital Services by Commercial Banks

This regulates the adoption of information technology for digital banking. The electronic/digital products of the banks should get permission from OJK. To have excellent services and better risk management for the customers, the banks must emphasize product innovation and digital processes with cooperation of other stakeholders or partners.

c. OJK Regulation No.13/POJK.02/2018 on Digital Financial Innovation in the Financial Services Sector

This is a main regulation for Fintech companies especially for those Fintech that yet being regulated by other authorities, thus should register to OJK to proceed with the regulatory sandbox process. This regulation also highlighted on the responsible finance innovation, having a resilience security system, good governance, compliance with customer protection and anti-money laundering or terrorism financing.

d. OJK Regulation No.37/POJK.04/2018 on Equity Crowd Funding

This regulation emphasizes on regulating equity crowd funding to increase economic growth in Indonesia by giving access to start-up firms and SMEs in getting capitals electronically for business development.

e. Bank of Indonesia Regulation No.19/10/PBI/2017 on Fintech Companies

This regulation aimed to accommodate the Fintech ecosystem and the Indonesian economy, especially firms in payment businesses. Fintech lenders are required to apply at Bank of Indonesia and prohibited of using digital currency. These Fintech companies will be assessed in the regulatory sandbox for a year before allowing them to get the license.

f. Bank of Indonesia Regulation No.20/6/PBI/2018 on Electronic Money (E-money)

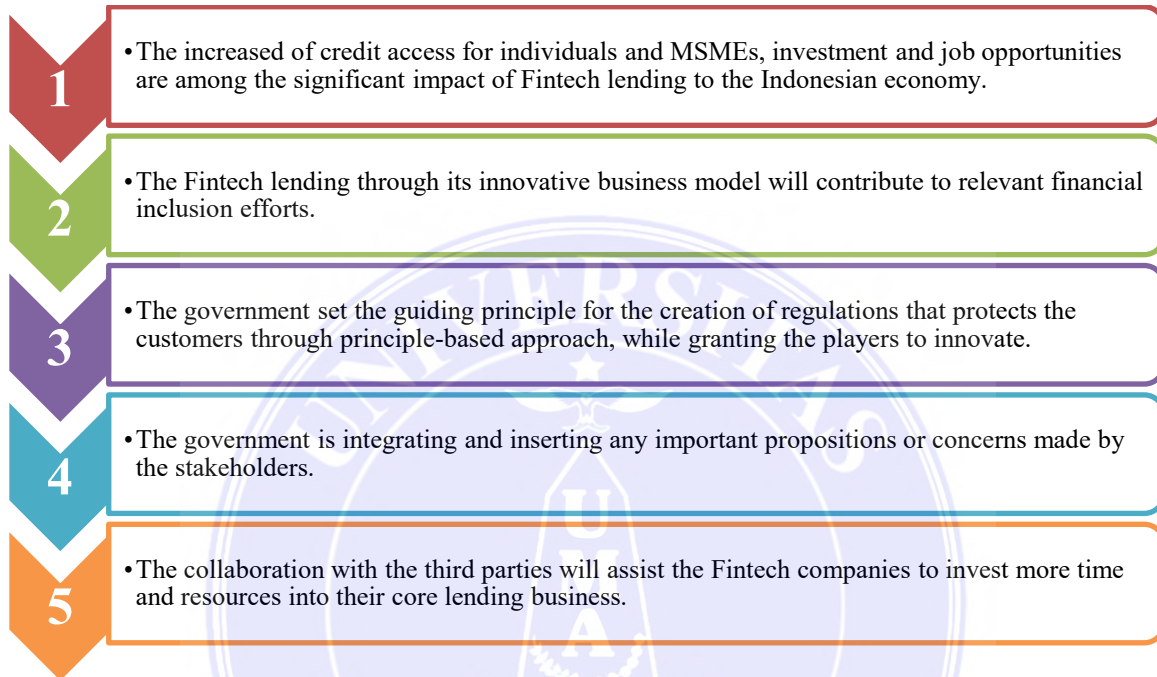
This regulation aimed to support the progress of business model of e-money. The institutional capacity of e-money issuers is encouraged, contains capital and ownership composition.

Source: OJK, Bank Indonesia

The Government Perspective

Below is the government perspective on Fintech that could be considered as input for future improvement and development of Fintech:

Figure 26. Government Perspective of Fintech



5. Case Study (2 ~ 3)

5.1 Success Story, Fintech Taxonomy (business model), type of Products/Services, Funding, Market Strategy

1. How Kredivo Increased its Stickiness and Increased Conversions by 40%

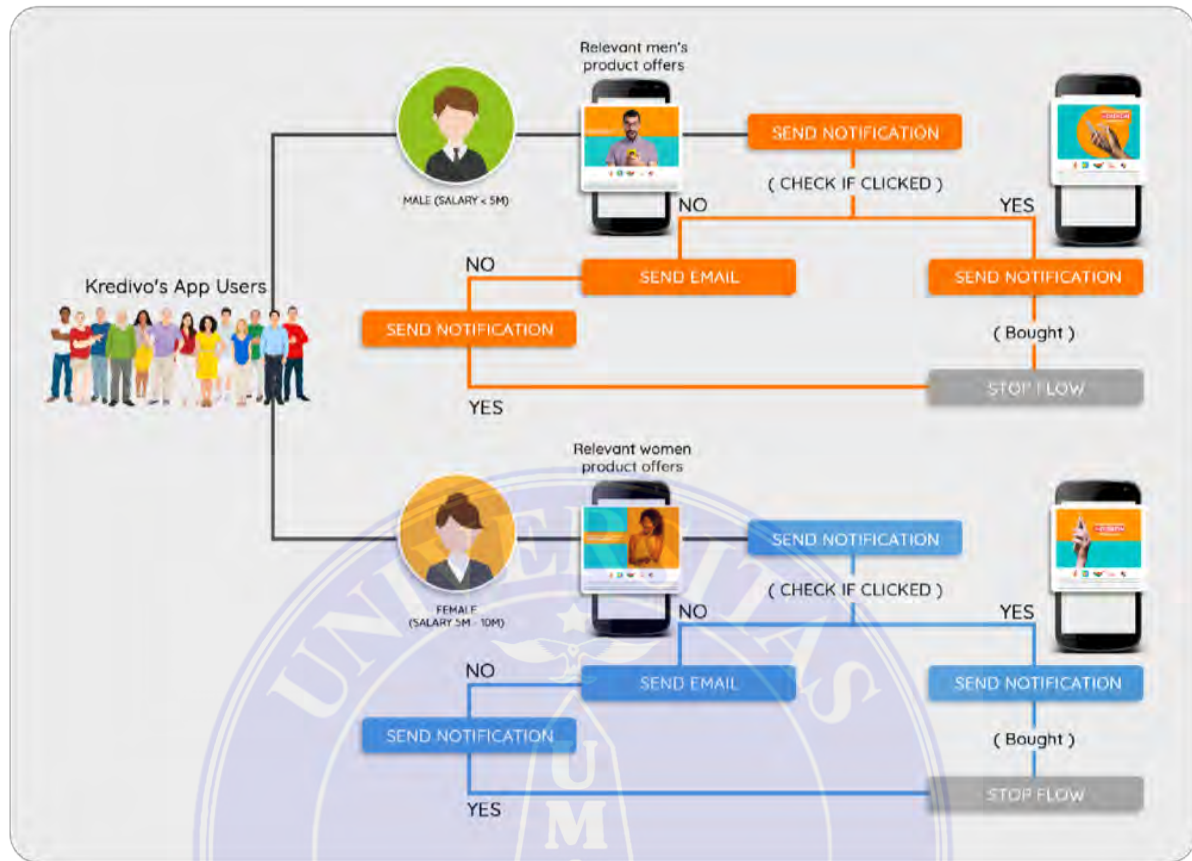
Kredivo is an Indonesia-based Fintech firm that gives e-commerce buyers to apply and qualify for getting credits and payback over time. After three years of establishment, Kredivo is recognized as one of the fastest growing digital payment channels for e-commerce in Indonesia. This company intends to go further to engage extensively the new users through its app, improve the transactions completely within the app, and promote continuously the overall brand. They believe that a single marketing automation platform would assist them in resolving some challenges as well as coping with new channels and issues in the future. Kredivo has chosen MoEngage's Push Amplification to do notification tracking on the sent messages. This notification services protect any failure in delivery and improve the delivery rate with 20 percent.

About Kredivo

Kredivo enables ecommerce buyers to apply and qualify for instant credit and pay back over time. Merchants using Kredivo benefit from providing Point of Sale financing using a 2-click checkout to all eligible buyers. In less than 3 years since its launch, Kredivo has become one of the fastest growing and the stickiest digital payment channels for ecommerce in Indonesia.

Users who had approved installments were sent custom offers via emails and push notifications to upsell new products within the app. Unique flows were setup based on user attributes such as age, gender, income etc. to customize the offers and messages sent to users at a segment level. Over the last 10 months, automated flows have influenced up to 40 percent of conversions for Kredivo.

Figure 27. Kredivo's App Users



Kredivo's Workflow. To improve the Search Engine Optimization (SEO) in the app store, Kredivo sent automated emails to the users who had completed an in-app transaction to leave their ratings and feedback. The emails led to a 64 percent conversion rate. All these initiatives assist Kredivo to improve the enhancement on their app.

Since its establishment in April 2016, Kredivo platform of digital credit card is considered as one of the fastest-growing Fintech firm in Indonesia. This firm has obtained multiple international awards, one of them is nominated as one of Top 100 Fintech Startups of Ventures Global. Moreover, Kredivo was one of the pioneers that offers e-commerce payments landscape with a slogan of “buy now, pay later” option in Indonesia. This is could be solution to some segment of consumers which have huge potential to be developed.

Kredivo offers the online shoppers to apply instant credit once they have completed of any purchases on their favorite site, which creates possibilities to purchase other items or pay back over time. Kredivo engages with various interfaces that would help many young people in the country in getting access to the credits. With this interesting offer, Kredivo received a growth of more than 10 percent in

a month or nearly 40 percent per quarter in the past two years. This makes Kredivo now has around 2 million users and partners with over 200 merchants including the major e-commerce platforms of Tokopedia, Lazada, Shopee, and Bukalapak, thus Kredivo becomes one of the top four payment methods on the biggest e-commerce platforms as well as the most popular method of bank transfers, cash payments and conventional credit cards.

Currently, Kredivo focus on creating a convenient and safe product as well as the company has settled to decide the NPL rate at 3.5 percent due to its tight AI-powered credit scoring and fraud detection process. It has been claimed that the NPL rate in Kredivo is one of the lowest in the market.

Acquisition and regional expansion plans

Kredivo is one of the top-funded Fintech firms in Indonesia that raised USD 30 million by Square Peg Capital in July 2018 and then received an undisclosed amount of additional funding by MDI Ventures and Telkomsel Mitra Inovasi (TMI) earlier this year. This startup also deals with multiple projects such as a partnership with Telkomsel to assist in targeting customers with low-cost installment plans.

Kredivo is looking for any opportunities to acquire a local multi-finance company to get a multi finance license, which then open possibilities of obtaining new credit products. This will escalate the Kredivo's loan distribution potency as multi finance companies are permitted to dispart around 30 percent of its financing into lending. Meanwhile, Kredivo intends to have a regional expansion to other countries such as the Philippines. The reason of choosing the Philippines is due to the similarities in economic character as Indonesia and this would be Kredivo's first foreign market. Both countries have millions of adults who are underbanked and in need for financial services. Besides the Philippines, Kredivo will open the opportunities to penetrate to other Southeast Asia countries as well.¹³

2. Bukalapak

There are many Fintech companies in Indonesia and one of the biggest is Bukalapak which called as the Indonesia's newest unicorn. Bukalapak is a prominent local company and internationally has long operated in the shadows of Tokopedia and other players such as Shopee and Lazada. But now, become more popular, get attention from the media, has prospective employees, and received concerns from the stakeholders including the Indonesian government.

¹³ <http://www.kredivo-ceo-akshay-garg-on-building-the-strongest-product-and-team-startup-stories>

In January 2018, Bukalapak increased an undisclosed funding round which means, it included as another Indonesian unicorn. This company's e-commerce marketplace became the fourth Indonesian startup with an estimate value above US\$1 billion, together with Go-Jek, Traveloka, and its competitor Tokopedia. Today, Bukalapak expanding its business by initiating to offer strategic partnership in Fintech such as with e-wallet BukaDana and mutual funds product BukaReksa), artificial intelligence, and government services. With that, the company intends to open its R&D center in Bandung (the capital of the West Java province). However, according to a report by the McKinsey & Company, it is suggested to venture offline since the Indonesia's e-commerce industry may perceived as a huge potential but in fact it only represents 3 percent of total retail in 2017. This would be a challenge for Bukalapak, although they have significantly expanded its customer base throughout the country.

Venturing offline with Mitra Bukalapak

This offline approach is purposely dedicated to the customers who are unable or unaccustomed of using online shopping, so then now can use or ask a Bukalapak partner to help in purchasing online. Since it opens, there are more than 500,000 participants of small firms are joining the program with enthusiasm. This way is actually resulted faster growing than the common e-commerce platforms, although there is limitation in terms of buying in volumes or sizes that sometimes can't be accommodated, unless the customers go to the Bukalapak online platform directly.

Although the approach of having Bukalapak partner is quite potential, however finding accurate number of *warung* (shop in Indonesian language) in Indonesia is difficult. Thus Bukalapak still emphasizes on the growth of overall numbers of its partners as well as maintaining the growth of others' revenues. Meanwhile, Bukalapak remain as the player that considers the offline segment. In fact, its rival of Tokopedia successfully collected for US\$1.1 billion in 2019 by engaging both online and offline businesses. Tokopedia actually had introduced its „partner“ similar like Bukalapak's own in late 2018.

The return on the investment in this type of business would be good especially when Bukalapak as a first-mover that has benefits, for instances, the company could explore and continue to be creative, innovate, and offer various products and services, so that create customer loyalty. In fact, when Bukalapak engage with offline transactions, it actually open possibilities of integration between online and offline businesses. One way to attract the customers is by issuing vouchers through the Bukalapak app for the customers who mainly purchase products from the company's offline partners.

Bukalapak is not trying to become a super app, thus open another channel to exploit the offline purchase. With that offline growth, the company proceeds to distinguish its online services, particularly in Fintech that would be a potential development in e-commerce businesses. Then Bukalapak started Fintech with the BukaDompot e-wallet. The company then created BukaDana, in collaboration with another Fintech partner called Dana.

Other collaborations are been made to expand the business such as with Akulaku (Fintech startup) by offering an installment plan as well as the two investment products: BukaEmas, which offers the users to purchase gold at very small amounts, and BukaReksa. While the merchants able to get loans from Bukalapak in expanding their businesses through BukaModal program. Moreover, the company partners like Bank Mandiri (the Indonesia's largest state-owned bank), and online lending startups such as Investree, Modalku, and Koinworks were joining and supporting the program. This includes to collaborate in launching an insurance product in the near future. It is reported that the Bukalapak's investment products have done similarly to Mitra Bukalapak. The number of transactions has increased but the amounts still relatively small with the average of range from US\$7 to US\$35. This is due to many users are first-time investors. However, the company strives to educate the potential customers on the investment products which expectedly will get more people investing bigger amounts.

The intention of Bukalapak in developing new products is inspired by merchants' needs. For instance is BukaReksa, which is a collaboration with digital investment platform Bareksa, that allows the merchants to invest partly of their sales in the Bukalapak e-wallet. This clearly indicates that Bukalapak tried to create value chains on the retail business. Another initiative by Bukalapak is by setting up the R&D center in Bandung with a collaboration of the Bandung Institute of Technology (ITB).

The center which developed by Bukalapak and ITB, is a place where employees could explore ideas that can contribute to the advancement of Bukalapak platform. With a coordination with the government or local municipals, the inputs on new features could be proposed like launching a feature for users to pay motor vehicle taxes. This includes enhancing the collaboration on scholarship programs and internships, which can reduce the gap between the skills of local graduates and needs of the industry. While other unicorns engage R&D centers in other countries like India such as Go-Jek and Tokopedia. Bukalapak sees the potential of local resources within Indonesia is a priority.

The advantage of having smaller funding

As of January 2019, Bukalapak has 4 million merchants on its platform, with about 50 million monthly active users¹⁴. However the company does not disclose its latest Gross Merchandise Volume (GMV) figures but it estimated has amount of US\$283 million. It is still below Shopee as the top of e-commerce platform in Southeast Asia with GMV of between US\$575 million and US\$608 million monthly in 2018.

Unlike Shopee and Lazada, Bukalapak plans to concentrate intensively on Indonesia market at the moment. This is because the huge opportunities could be found in Indonesia, however, if there is chance to collaborate or partnering with multinational companies, Bukalapak always open for it. In this position, Bukalapak is a close rival to Tokopedia that actually unrevealed its GMV figures. However, based on the most public accounts (active users monthly), Tokopedia is the Indonesia's top e-commerce app and thus currently lead the market.

However, due to the lack of a platform that could do everything such as creating, tracking and analyzing the campaigns, Bukalapak was experiencing a drop in customer engagement. Certain brands have to create personalized campaigns, thus need to understand customer behavior and segment which based on their preferences.

3. Tokopedia

Tokopedia, founded in 2009, is a unicorn Indonesian technology company driven by a mission to democratize commerce through technology. It is an Indonesian unicorn together with Gojek, Traveloka, and other e-commerce companies such as Bukalapak as well as a Fintech company of OVO. In 2019, a report by iPrice Group¹⁵ revealed that Tokopedia was the most visited e-commerce website in Indonesia between July and September with a total of 65,953,400 average monthly, securing 25% of the total market share.

The Tokopedia brand is known as Indonesia's largest online marketplace with a user base of over 90 million active users. Tokopedia offers more than 350 million curated products. The brand does not only offer categories such as clothing, footwear, and electronics, but also serves digital products such as utility payments, BPJS payments, and more. Tokopedia was launched with an aim to democratize commerce through technology and the brand has been working progressively towards better

¹⁴ <https://www.techinasia.com/bukalapak-raises-50-million-line-parent>

¹⁵ <https://www.iprice.com/insights/mapofecommerce/en/>

achievement. It continues to provide a free platform to C2C businesses that are able to reach more users with the help of our platform.

In 2009, PT Tokopedia received initial seed funding from PT Indonusa Dwitama of IDR 2.5 billion. In the following years, Tokopedia attracted capital injections from global venture capitals, including East Ventures (2010), CyberAgent Ventures (2011), NetPrice (2012), and SoftBank Ventures Korea (2013). In October 2014, Tokopedia managed to make history as the first technology company in Southeast Asia to receive a US\$100 million investment (around IDR1.2 trillion) from Sequoia Capital and SoftBank Internet and Media Inc (SIMI). In April 2016, Tokopedia received another USD147 million. In 2017, Tokopedia received USD1.1 billion investment from Chinese e-commerce giant Alibaba. Again in 2018, the company secured USD1.1 billion funding round led by Chinese e-commerce giant Alibaba Group Holding and Japan's SoftBank Group putting its valuation to about \$7 billion. In November 2020, Tokopedia has received funding from US-based internet firm Google and Singapore state fund Temasek Holdings.

Tokopedia's GMV is IDR73 trillion (USD5.1 billion) in 2018 and the value is predicted to rise to IDR 222 trillion (USD 15.6 billion) in 2019, equivalent to 1.5 percent of the Indonesian economy. In the same year, Tokopedia expand its service by launching a Smart Fulfillment service called TokoCabang. This fulfillment service aims to help sellers to expand their business across Indonesia. Tokopedia also launched Tokopedia Salam, an inclusive service that supports Sharia Market needs in Indonesia which also provides Umrah service for Indonesians.

Tokopedia known as one of the biggest marketplace in Indonesia that continuously pursue innovative works which used as its main mission to encourage economic equity in Indonesia through digital technology. Two years ago, Tokopedia launched an e-commerce platform that has consistently supported Micro, Small and Medium Enterprises (MSMEs) and individuals with variety of Fintech products, which have become one of the innovative ways to encourage financial inclusion in Indonesia. For example Tokopedia Reksa Dana which was launched in March 2018; a collaboration with Syailendra Capital that has received public interest and positive growth. Even as of January 2019, the number of Tokopedia Reksa Dana transactions has grown 15 times since it was first launched.

It has been emphasized that innovation become one of the important elements to bring Tokopedia one step closer to achieve its main mission. In fact currently, Tokopedia has more than 30 digital products

and more than 6 financial services, including credit card applications, online loans, capital loans, various insurance products, Tokopedia Reksa Dana, and Tokopedia Emas which were recently introduced. Tokopedia Emas is an online gold trading feature in collaboration with PT Pegadaian which offers easiness and faster payment process. The system used in this product is under the supervision of the OJK.



6. Outlook

6.1 Industry/Market Outlook, Internationalization, Cross-country Cooperation

Based on a report of Oxford Business Group, Indonesia Fintech sector known and became as one of the most competitive sector in the world which opens business opportunities for foreign investors. This proven with the existence of the big four unicorn companies that valued over \$1 billion and one decacorn valued at over \$10 billion. The type of businesses consists of digital payment and other integrated payment options of e-commerce which supported with a fast-growing ecosystem that helps in expanding of financial inclusion in the country.¹⁶

In fact, the investments to support the Fintech had been received from the international and domestic sources. For example, Global backers including Google and China's Ant Financial, have agreed of doing joint ventures in Indonesia. Everyone in Indonesia whether the Fintech players or the government are in the growth mode where they open the door to get people in.

With regards to the structure of organization, the lawmakers and regulators are seeking to obtain the outcome of innovation by Fintech companies but they do not realize and accept the risks face by the companies and yet not ready to protect consumers. It is argued that composing a mechanism to fully protect customers in engaging Fintech is difficult. In this case, Bank Indonesia (BI) as the country's central bank comes out with a regulation of the payments systems. In fact, in January 2020, there is a limitation of charges for payments using QR codes and thus created standards to confirm interoperability. Another rule is that the consumers who use only one payment system may be able to do transactions with other systems, rather than to have a multiple accounts. This could be a selling point to increase consumers' engagements of using Fintech.

The segregation of tasks has been done between the Bank Indonesia and the OJK, whereby the Bank Indonesia focuses on the payment system, while the OJK on other matters except the payment systems. Focusing to one side of financial services indicating that the Fintech in Indonesia will be handled seriously which also could be developed as it is a growing way of doing transactions.

In the future, the regulators require having a thorough balance between efficiency and bureaucracy as it is known that doing business Indonesia will face a challenge in both regulation and bureaucracy

¹⁶ <https://oxfordbusinessgroup.com/overview/greater-access-backed-sensible-regulations-indonesia%E2%80%99s-tech->

<https://oxfordbusinessgroup.com/overview/greater-access-backed-sensible-regulations-indonesia%E2%80%99s-tech->

which obviously impact the market and industry development. Although the legal and regulatory framework has changed dynamically, however, the government need to make a plan of data protection aspect, in fact in January 2020, the bill on the consumer information protection has been submitted to Parliament but yet still waiting for the progress. This relates to the case of privacies such as sending messages to debtors' contacts to shame them in paying back loans.

Moreover, Fintech must engage with new development of technology and applications such as blockchain technology which could give solution on privacy concerns. In this blockchain will manage by centralized institutions such as banks and governments which then return full supervision of data to the consumers. This technology serves new solutions that ensure greater privacy and data security as well as protection of sensitive information. This blockchain adoption should be considered because it's not only resolved the privacy issues but also towards advancing the technology to have better features, appearances and systems.

With the published Indonesia Payment Systems Blueprint 2025 in November 2019 by the Central Bank (Bank Indonesia) for the long-term plan for modernizing and digitizing the country's payment systems, this will open the potential of investment. The system is a mix of changes and reforms to give solutions to the private sector in ensuring transparency and public involvement to monitor the processes. Its target is to guarantee reliable payment services and transparency in banking and data management. Obviously, it can be seen that the authorities keep improving the systems for the better Fintech industry.

Performance & Growth

Indonesia as the largest and fastest growing of internet economy in the region and Fintech is one of the potentials which was valued at USD40 billion in 2019 and continues improving at an average annual rate of around 49 percent. In 2025, it is forecasted to reach a value of at least USD130 billion which dominantly will be in digital payments and e-commerce businesses. These services are integrating progressively into super-app platforms that able to offer a range of goods and services. For the e-commerce apps, it increases from USD8 billion in the first half of 2016 to USD30 billion in the same period of 2019.

This tremendous development is contributed by the potential of Indonesia's population which reach to 268.1 million in 2019, that drastically have vibrant of using gadget such as smartphone technology, thus the number of internet users reach to 152 million in 2019 compare to only 92 million in 2015.

This would be the baseline of an increasing demand of services, that later attracts domestic and foreign investors or entrepreneurs with access of capital and have an interest to penetrate the markets. With a good relations and various partnership, many Fintech companies able to exist and expand by offering innovative goods and services. For example, Gojek with GoPay continue its e-wallet consistently as well as the innovation in its products and services. While Grab with OVO maintain its e-wallet in collaboration with Tokopedia. Similarly with LinkAja that successfully collaborated with Telkomsel, then Ant Financial established a competitor DANA in 2017 as the e-wallet for Bukalapak. All of them are stunning and perform excellently in their Fintech products and services.

The OJK have persistent enforcement as well as having continuous evaluation over the license given to the Fintech companies, which very crucial for the development of Fintech industry. It is been proved that so far, there are illegal P2P lenders have breached privacy rights, and some involve with intimidation tactics and sexual harassment. Therefore, OJK had shut down 826 illegal start-ups in the first eight months of 2019. Meanwhile, despite shutting down the illegal companies, the OJK have asked the licensed Fintech players to educate their customers on the financial services especially about the danger or risks of excess borrowing. Perhaps, those players must consider it (educating customers) as the part of their business model. Although some said that the education is not enough, thus the companies might complement with another way of providing tools that can be used in platforms“ integrations.

6.2 Risk Factors (Market Ecosystem Risk / Technological Risk / Regulatory Sensitivities)

Despite having potential as one of the biggest market in the world, however there are factors need to be considered to ensure the Fintech can grow positively. The potential of Indonesia comprises from its population of 262 million with internet user access reaching 143.26 million, where half of the internet users 19-34 years of age, 50.08 percent have smartphones/tablets, 44.16 per cent use smartphones/tablets to access the internet and 26.47 percent use the internet more than 7 h per day (Asosiasi Penyelenggara Jasa Internet Indonesia, 2017). These figures would contribute to the significant development of businesses associated with the internet and technology including for Fintech.

Meanwhile, Buchak et al. (2018) revealed that the most significant factors that contribute to Fintech growth are regulation (60%) and technology (30%). This means, a prudent Fintech ecosystem is crucial to propel the growth of Fintech. Regulators involved in Fintech ecosystems in Indonesia are

the Central Bank of Indonesia, the Indonesia Financial Services Authority and the Ministry of Communication and Informatics. Below is the Table that described each of those institutions' roles in Fintech.

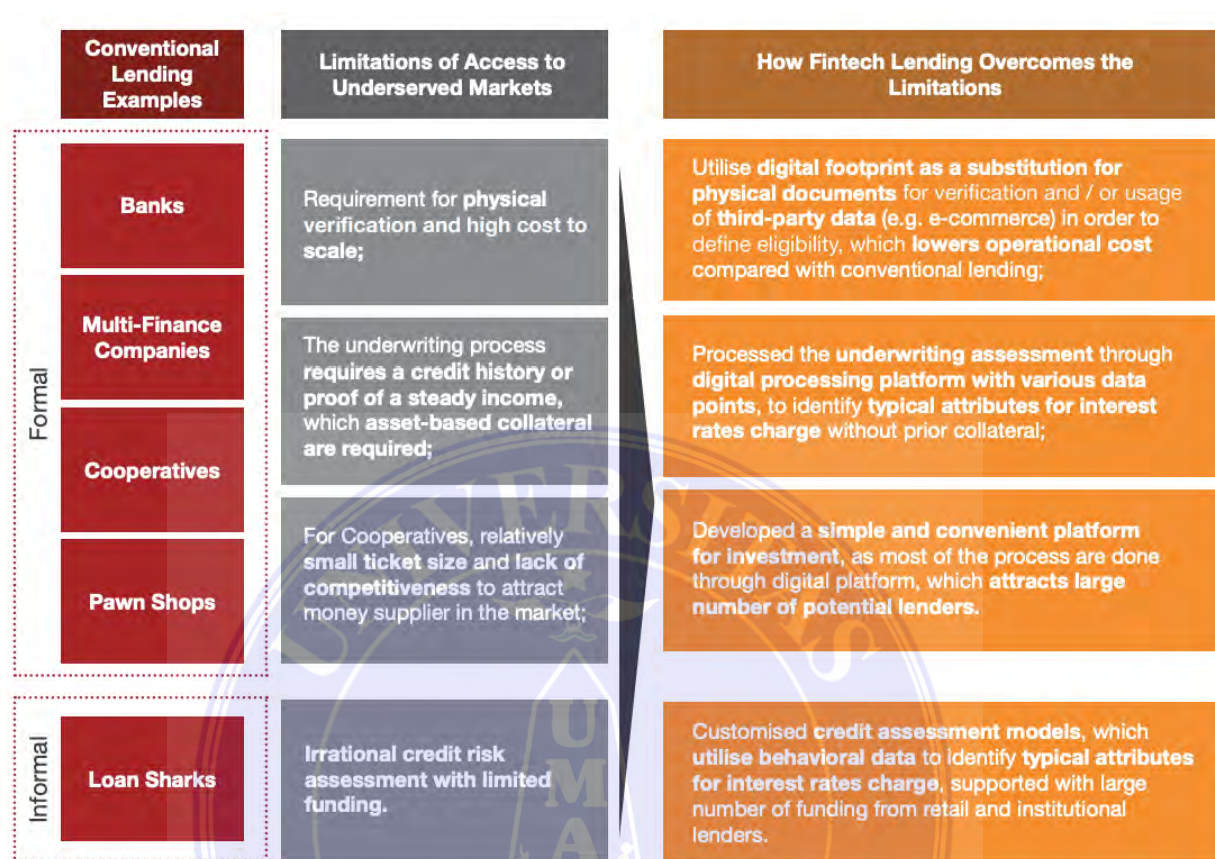
Table 3. Fintech regulator in Indonesia

Central bank of Indonesia	Indonesia financial services authority	Ministry of communication and informatics (MOCIT)
EWallets	P2P lending	Telecommunications Information technology
EMoney	Crowdfunding	Aspects on Fintech that fall under information technology
Payment gateway	Digital banking	
Principals	Insurtech	
Switching companies	Fintech in capital market	
Card issues and acquirers	Venture capital	
Clearing house	Online financing	
Settlement agencies	Data security	
Cryptocurrency and blockchain	Consumer protection	
National payment gateway		
Support for payment transactions		

Sources: Central Bank of Indonesia and Indonesia Financial Services Authority

Fintech lending brings some of the solutions that might be not offered by conventional lending of providing multiple access channels for consumers. An unlimited or open access of financing especially by the underserved markets is something that not been provided by the conventional lenders. With some innovative approaches, Fintech lending would be an alternative by offering a combination of different business models and technology that became the challenges of conventional lending providers so far. Thus, could get extensive coverage in remote areas, resolve facilities and risk management challenges that are normally deal with financial institution in serving new segments (Figure 28).

Figure 28. How Fintech Lending overcomes Conventional Lending Providers' Limitations



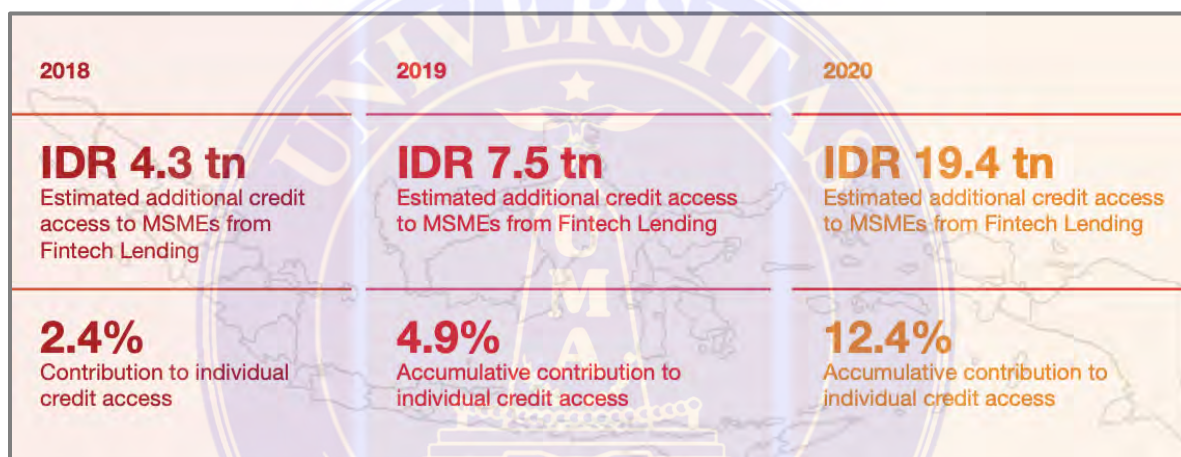
Source: Otoritas Jasa Keuangan (OJK).

It is predicted by OJK that in 2020, Fintech lending will narrow down the financing gap of micro, small and medium enterprises (MSMEs) by a support of IDR 19.4 trillion as well as escalating the credit access for individuals by 12.4 percent. This would help the economic development quite significantly because the MSMEs are dominating the businesses in Indonesia. Moreover, the financial inclusion can be expanded with the support of Fintech lending through the credit access particularly for those who are previously underserved by formal institutions. In fact, in 2018, there was an additional credit access of IDR 4.3 trillion for MSMEs, IDR 7.5 trillion in 2019 and IDR19.4 trillion in 2020. There was a significant increase in credit access given to the MSMEs especially during this pandemic Covid-19. This provision credit access aimed to enhance the liquidities in order for them to survive or maintain their business operations. Closing their operations means unlikely adding a number of unemployment and poverty.

As it is reported by OJK, the individual credit access may rise up to 4.9 percent in 2019 with the help of Fintech lending. An escalating of credit access affects the household expenses and thus generates

the consumers’ purchasing power. Other benefits of Fintech lending will open the access of opportunities for both businesses and individuals, so that able to upgrade their economic engagements. For example, the retail business now can access to the credit facilities from formal financial institutions without any convincing credit records or collateral. This enable more employees could transform themselves to be the entrepreneurs when they can get credits from Fintech lending easily. Moreover, now everyone could have chances to get credits especially for certain sectors that were not exposed before. This expectedly as a driving force to leverage the economic potentials of all segments and societies in Indonesia.

Figure 29. Fintech Lending Potential Impact to Close the MSME Financing Gap and Individual Credit Access



Source : Global Findex 2018; Otoritas Jasa Keuangan; PwC Customer Survey.

Note : Contribution to individual credit access is calculated based on the addition of individuals on top of those that have borrowed from a financial institution or used a credit card according to 2018 Global Findex

Challenges and Trends of Indonesia’s Fintech Industry

There are challenges faced by the Fintech companies that should be the concerns of the government in finding its solutions as follows:

1. Low internet connectivity. The Internet is an important tool or a medium in delivering services, however the infrastructure of the connectivity in Indonesia still low, thus the use of Internet can’t be optimal. Means that the Fintech companies unable to reach out their customers, while customers have issues in accomplishing their transactions easily.
2. Preference for cash transactions. The Fintech companies face challenges in the form of transforming or shifting the preferences of transactions such as cash versus cashless mode of payment. This relates to the customer’s behavior whereby the positive shift of customer’s behavior towards digital services is vivid. This is due to the advantages of Fintech such as

- convenient, easy to access, flexible compare to the traditional bank services that require a physical attendance.
3. Strict regulation. A dilemmatic situation is faced by the Fintech companies. Despite being encouraged to employ the financial system, the regulator (OJK) has no clarity in processes or gives any respond on the inquiries, thus the unavoidable action such as fraudulent activities are occurred.

There are 7 (seven) trends of Fintech in 2020 that highlighted to be opportunities in the future in any countries. It starts with the variety of payment technologies offered to customers or investors; from crypto to FX transfers. Then followed with blockchain that provide innovative contracts. This includes the emergence of security in digital and cyber identify which protect from any frauds for the clients. Later the trend of having marketplaces where lending and crowdfunding are taken place. With standardize processes, marketing and legal materials, both lending and crowdfunding are acceptable. Moreover, some companies attempt to come out with personalized advice platforms from investment to lending. This is to give a customized services based on the preferences of customers. Meanwhile, the creation of artificial intelligence (AI) and machine learning platforms would become tools for core business processes of Fintech companies in protecting from fraud etc. Finally, an open banking where platforms connect to APIs for transferring and visualizing banking data would be a demand and a solution of efficiency.¹⁷

¹⁷ <https://www.toptal.com/finance/market-research-analysts/Fintech-landscape>

Figure 30. Top Fintech Trends for 2020



Appendix 1. List of licensed and registered Fintech companies in Indonesia

Table 4. The licensed Fintech companies (based on OJK Regulation No.77 Tahun 2016) as per 31 May 2020)

No	Name of Companies	No	Name of Companies
1	PT Pasar Dana Pinjaman (Danamas)	18	PT Pohon Dana Indonesia (pohondana)
2	PT Investree Radhika Jaya (Investree)	19	PT Mekar Investama Sampoerna (MEKAR)
3	PT Amarthia Mikro Fintek (amartha)	20	PT Pembiayaan Digital Indonesia (Adakami)
4	PT Indo Fin Tek (DOMPET Kilat)	21	PT Esta Kapital Fintek (Esta Kapital)
5	PT Creative Mobile Adventure (KIMO)	22	PT Tri Digi Fin (KREDITPRO)
6	PT Toko Modal Mitra Usaha (TOKO MODAL)	23	PT Fintegra Homido Indonesia (FINTAG)
7	PT Digital Alpha Indonesia (UangTeman)	24	PT Kredit Utama Fintech Indonesia (RUPIAH CEPAT)
8	PT Mitrausaha Indonesia Grup (modalku)	25	PT Mediator Komunitas Indonesia (CROWDO)
9	PT Pendanaan Teknologi Nusa (KTA KILAT)	26	PT Artha Dana Teknologi (Indodana)
10	PT Kredit Pintar Indonesia (Kredit Pintar)	27	PT Julo Teknologi Finansial (JULO)
11	PT Astra Welab Digital Arta (Maucash)	28	PT Progo Puncak Group (Pinjamwinwin)
12	PT Oriente Mas Sejahtera (Finmas)	29	PT Layanan Keuangan Berbagi (DanaRupiah)
13	PT Aman Cermat Cepat (KlikACC)	30	PT Indonusa Bara Sejahtera (Taralite)
14	PT Akseleran Keuangan Inklusif Indonesia (Akseleran)	31	PT Finansial Integrasi Teknologi (Pinjam Modal)
15	PT Ammana Fintek Syariah (ammaana)	32	PT Alami Fintek Sharia (ALAMI)
16	PT Dana Pinjaman Inklusif (PinjamanGo)	33	PT Simplefi Teknologi Indonesia (AwanTunai)
17	PT Lunaria Annuu Teknologi (Koinworks)		

Table 5. The registered Fintech companies (based on OJK Regulation No.77 Tahun 2016) as per 31 May 2020)

No	Name of Companies	No	Name of Companies
34	PT Sol Mitra Fintec (Invoila)	84	PT Dana Bagus Indonesia (Dana Bagus)
35	PT Digital Tunai Kita (TunaiKita)	85	PT Lentera Dana Nusantara (ShopeePayLater)
36	PT iGrow Resources Indonesia (iGrow)	86	PT Investdana Fintek Nusantara (iKredo)
37	PT Cicil Solusi Mitra Teknologi (Cicil)	87	PT Berkah Kelola Dana (KASPIA)
38	PT Intekno Raya (DANA MERDEKA)	88	PT Kreditku Teknologi Indonesia (Kredinesia)
39	PT Kas Wagon Indonesia (cashwagon)	89	PT Komunal Finansial Indonesia (Komunal)
40	PT Gradana Teknoruci Indonesia (GRADANA)	90	PT Anantara Digital Indonesia (modal antara)
41	PT Mapan Global Reksa (Dana Mapan)	91	PT Kreasi Anak Indonesia (gandengtangan)
42	PT Aktivaku Investama Teknologi (Aktivaku)	92	PT Teknologi Merlin Sejahtera (UKU)
43	PT Dana Kini Indonesia (Danakini)	93	PT Digital Bertahan Indonesia (Pasarpinjam)
44	PT FinAccel Digital Indonesia (Kredito)	94	PT Newline Fintech Indonesia (ProsperiTree)
45	PT Perlu Fintech Indonesia (iTernak)	95	PT Danakoo Mitra Artha (Danakoo)
46	PT Fintek Digital Indonesia (Kredito)	96	PT Akur Dana Abadi (JEMBATANEMAS)
47	PT Crowde Membangun Bangsa (Crowde)	97	PT Sinergi Mitra Finansial (Kredibile)
48	PT Kredit Plus Teknologi (PINJAM GAMPANG)	98	PT Pinjaman Kemakmuran Rakyat (KlikUMKM)
49	PT Tani Fund Madani Indonesia (TaniFund)	99	PT Harapan Fintech Indonesia (KLIK KAMI)

No	Name of Companies	No	Name of Companies
50	PT Bursa Akselerasi Indonesia (indofund.id)	100	PT Idana Solusi Sejahtera (cairin)
51	PT Mulia Inovasi Digital (danaIN)	101	PT Empat Kali Indonesia (EMPATKALI)
52	PT Grha Dana Bersama (AVANTEE)	102	PT Berdayakan Usaha Indonesia (BATUMBU)
53	PT Glotech Prima Vista (do-It)	103	PT Rezeki Bersama Teknologi (FinPlus)
54	PT Digital Micro Indonesia (danabijak)	104	PT Arthatech Internasional Manajemen (Kaching)
55	PT Artha Permata Makmur (Cashcepat)	105	PT Digitron Solusi Indonesia (asakita)
56	PT Seva Kreasi Digital (DanaLaut)	106	PT Digilend Mobile Nusantara (Digilend)
57	PT Dana Syariah Indonesia (DANA SYARIAH)	107	PT Syarfi Teknologi Finansial (Syarfi)
58	PT Solusi Finansial Inklusif Indonesia (TELEFIN)	108	PT Duha Madani Syariah (Duha SYARIAH)
59	PT Modal Rakyat Indonesia (ModalRakyat)	109	PT Bole Cicil Indonesia (bocil)
60	PT Kawan Cicil Teknologi Utama (KawanCicil)	110	PT Qazwa Mitra Hasanah (qazwa)
61	PT Satustop Finansial Solusi (Sanders One Stop Solution)	111	PT Maslahat Indonesia Mandiri (bsalam)
62	PT Alfa Fintech Indonesia (KREDITCEPAT)	112	PT Teknologi Indonesia Sentosa (OneHope)
63	PT Uangme Fintek Indonesia (UangMe)	113	PT Digital Yinshan Technology (LadangModal)
64	PT Stanford Teknologi Indonesia (PinjamDuit)	114	PT Semangat Gotong Royong (Dhanapala)
65	PT Kuaikuai Tech Indonesia (PinjamYuk)	115	PT Cerita teknologi Indonesia (Restock.ID)
66	PT Indonesia Fintopia Technology (EASYCASH)	116	PT Anugrah Digital Indonesia (SOLUSIKU)
67	PT Finlink Technology Indonesia (RupiahOne)	117	PT Pendanaan Gotong Royong (Pinjam Disini)
68	PT Inclusive Finance Group (DANACITA)	118	PT Info Tekno Siaga (AdaPundi)
69	PT Pasar Dana Teknologi (DANAdidik)	119	PT Satrio Jaya Persada (Tree+)
70	PT Trust Teknologi Finansial (TrustIQ)	120	PT Assetku Mitra Bangsa (assetkita)
71	PT Adiwisista Finansial Teknologi (Danai.id)	121	PT Fintech Bina Bangsa (Edufund)
72	PT Pinduit Teknologi Indonesia (Pintek)	122	PT Smart Karya Digital (FinanKu)
73	PT Dana Aguna Nusantara (DANAMART)	123	PT Digital Quantum Tek (TunaSaku)
74	PT Sejahtera Sama Kita (samakita)	124	PT Plus Ultra Abadi (UATAS)
75	PT Minitech Finance Indonesia (Saya Modalin)	125	PT Fidac Inovasi Teknologi (dumi)
76	PT Tujuh Mandiri Sejahtera (Vestia)	126	PT Dynamic Credit Asia (goena)
77	PT Abadi Sejahtera Finansindo (Singa)	127	PT Pundiku Mitra Sejahtera (Pundiku)
78	PT Indo Fintek Digital (MODALUSAHA.ID)	128	PT Prima Fintech Indonesia (TEMAN PRIMA)
79	PT Pintar Inovasi Digital (Asetku)	129	PT Oke Ptop Indonesia (Ok!P2P)
80	PT Danafix Online Indonesia (danafix)	130	PT Doeku Peduli Indonesia (Doeku)
81	PT Lumbung Dana Indonesia (lumbung dana)	131	PT Global Kapital Tech (finsy)
82	PT Lampung Berkah Finansial Teknologi (LAHAN SIKAM)	132	PT Amanah Karyananta Nusantara (Mopinjam)
83	PT Solusi Teknologi Finansial (Modal Nasional)		
		149	PT BBX Digital Teknologi (BBX FINTECH)
133	PT Smartec Teknologi Indonesia (BANTUSAKU)	150	PT Jayaindo Fintek Pratama (SolusiKita)
134	PT Klikcair Magga Jaya (KlikCair)	151	PT Sahabat Mikro Fintek (SAMIR)
135	PT Solid Fintek Indonesia (AdaModal)	152	PT Artha Simo Indonesia (Cankul)
136	PT PAM Finansial Teknologi (KONTANKU)	153	PT Asia Ocean Fintek (Tolongku)
137	PT IKI Karunia Indonesia (IKI Modal)	154	PT Teknologi Finansial Asia (PiNBeE)
138	PT Ethis Fintek Indonesia (ETHIS)	155	PT Kinerja Sukses Gemilang (KFUND)
139	PT Kapital Boost Indonesia (Kapital Boost)	156	PT Gerakan Digital Akselerasi Indonesia (Pinjam KAN)
140	PT Piranti Alphabet Perkasa (PAPITUPI SYARIAH)	157	PT Solusi Bijak Indonesia (sumur.id)
141	PT Berkah Fintek Syariah (Berkah Fintek Syariah)	158	PT Serba Digital Teknologi (Pinjamindo)
142	PT Evian Teknologi Indonesia (OPTIMA)	159	PT Lufax Technology Indonesia (Ringan)
143	PT Finansia Aira Teknologi (IVOJI)	160	PT Sens Teknologi Indonesia (Indosaku)
144	PT Mikro Kapital Indonesia (MIKROKAPITAL.ID)	161	PT Danon Digital Nusantara (Danon)
145	PT Coco Digital Technology (Kotak Koin)		
146	PT Inovasi Terdepan Nusantara (360Kredi)		

No	Name of Companies	No	Name of Companies
147	PT Arga Berkah Sejahtera (ArgaPro)		
148	PT Mitra Pendanaan Mandiri (MITRA P2P LENDING)		

Reference

Asosiasi Penyelenggara Jasa Internet Indonesia (2017), Infografis Penetrasi and Perilaku Pengguna Internet Indonesia

Arneris, D. W., Barberis, J., & Buckley, R. P. (2015). The evolution of Fintech: A new post-crisis paradigm. *Geo. J. International L.*, 47, 1271.

Batunanggar, S. (2019). Fintech development and regulatory frameworks in Indonesia.

Buchak, G., Matvos, G., Piskorski, T., & Seru, A. (2018). Fintech, regulatory arbitrage, and the rise of shadow banks. *Journal of Financial Economics*, 130(3), 453-483.

Carney, M. (2016). Enabling the Fintech Transformation: Revolution, Restoration, or Reformation.

Daily Social (2018). Fintech Report. p. 16–35. <https://dailysocial.id/report/post/Fintech-report-2018> (accessed 14 October 2020).

KPMG (2016). The Pulse of Fintech. Retrieved on 29th October 2020. Available at: <https://home.kpmg.com/xx/en/home/insights/2016/03/the-pulse-of-fintech-q1-2016.html>

Panetta, F. (2018). Fintech and Banking - Today and Tomorrow. Speech delivered at the Harvard Law School Bicentennial Annual Reunion of the Harvard Law School Association of Europe, Rome, 12 May, p. 9–10. <https://www.bis.org/review/r180515d.htm> (accessed 03 November 2020).

Saksonova, S., & Kuzmina-Merlino, I. (2017). Fintech as financial innovation—The possibilities and problems of implementation.

<https://www.crowdfundinsider.com/2020/08/165636-over-240-Fintech-firms-operating-in-indonesia-a-leading-southeast-asian-and-global-economy-report/>

<https://www.cekindo.com/blog/Fintech-indonesia>

<https://iclg.com/practice-areas/Fintech-laws-and-regulations/indonesia>

Partner of Fintech in Indonesia

