

Regulatory Sandbox: A Regulatory Model to Guarantee the Accountability of Electronics Financial Technology Implementation

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ABSTRACT

The development of innovation in the technology sector has led to a variety models and variations in financial technology products and services. As a measure to ensure the utilization of financial technology for economic growth and to prevent the potential disruption of financial system stability, a sandbox system is used to obtain innovation, services, business models, and financial technology services. This paper compares the regulatory sandbox's regulation in various countries and Indonesia. Also discussed how regulatory sandbox ensuring accountability in the implementation of financial technology. The conclusions generated from this study is there is such a general arrangement between countries that applies regulatory sandbox in their fintech regulations. In Indonesia itself, there has been no firm coordination between technical and business government institution regarding the implementation of regulatory sandbox as a preventive measure of consumer protection.

Keywords: *electronic transaction, electronic system, financial technology, regulatory sandbox*

1. INTRODUCTION

The development of internet users in Indonesia has reached 50% or 112 million active users in 2017 and projected to continue to grow up until 141 million active users in 2021 [1] The increased has positive impact on the growth of electronic transactions in Indonesia, such as financial technology ("fintech"). Fintech refers to innovative financial services or products delivered via technology. New digital technologies automate a wide range of financial activities and may provide new and more cost-effective products in parts of the financial sector, ranging from payment, lending, asset management, and many more.

Fintech has a welfare-enhancing disruptive capability that's why regulation needed to adapt so the new technology delivers the promised benefits without endangering financial stability. Finance has become one of the critical sectors in the society, therefore the government has strict regulations on its operations. The main purpose of regulation is aimed to ensuring there are no irregularities, especially those that are detrimental to wide community. The digital finance business must also meet standard compliance before operating. The United Kingdom was the first country that begun to implement a novel regulatory concept called "Regulatory Sandbox" to enable fintech companies to innovate and test products, services, and business models without having to worry about certain regulatory constraints and liabilities [2]. Actually, the first sandbox-like framework was set up by

the United State Consumer Financial Protection Bureau (CFB) in 2012 under the name Project Catalyst. In 2012, the United Kingdom Financial Conduct Authority ("FCA") coined the term "regulatory sandbox" and generated great interest from regulators and innovators around the world. At the beginning of 2018, there were more than 20 jurisdictions actively implementing or exploring the concept, including Indonesia [3].

A regulatory sandbox introduces the potential to change the nature of the relationship between regulators and financial services providers (regulated or unregulated) toward a more open and active dialogue. It may also enable the regulator to revise and shape the regulatory and supervisory framework with agility. However, establishing a sandbox should not distract policy makers who are facing elementary regulatory challenges nor should it be expected to affect the mindset change in that many view as necessary for regulators to keep up with the fintech revolution [4]. Regulators establish sandboxes for various reasons, but the most common reasons are to promote competition and efficiencies in financial services markets through innovation.

The presence of regulatory sandbox raises pros and cons, because on the one hand it is accommodative for fintech innovations by providing flexibility that may not be available under traditional regulatory models, but on the other hand it is an intimidating regulation towards existing financial services business (regulated institution), which are bound by traditional regulatory models that requires to meet certain requirements before launch their new financial services or products. In the regulatory sandbox

regime, unlicensed company or start-ups allowed to launch their new financial services or products without having to comply with rigid regulations.

1.2. Our Contribution

This paper discuss the regulatory sandbox as a model used to guaranteeing the accountability of financial technology and the new paradigm that we presents on this paper is we discuss the paper not only from the business point of view like any other research had done, but also from the technical point of view so the result from this paper is more comprehensive.

1.3. Methodology

This research is theoretical legal research and using descriptive approach, for academic legal research can be purely descriptive. It generally includes normative standpoints and description of the law from the point of view of achieving particular aim. The research data done by compiling the material i.e. primary and secondary sources. Primary sources are EIT Law, Indonesia Central Bank (“BI”) and Indonesia Financial Services Authority (“OJK”) regulations regarding regulatory sandbox. Secondary sources are law journals, articles, and textbooks. This research also used tertiary law material such as law dictionary for the interpretation that couldn’t find in the primary source. In addition to obtain data in this research, were also supported by interview with correspondent Mr. Muhammad Ismu Hadi, S.ST, *Sandiman Muda*, E-Business Subdirector, Digital Economic Protection Directorate, Protection Deputy, The Cyber Body and National Encryption Agency.

1.4. Paper Structure

The rest of the paper is organized as follows. Section 2 introduces the theoretical review used in this paper, which include the definition of electronic system. Electronic transaction, financial technology, and regulatory sandbox. Section 3 divided into two sectors, first discuss about regulatory sandbox model from business perspective used in various countries and compare with Indonesia’ regulatory sandbox, and second presents the regulatory sandbox regulations in Indonesia form technical point of view. Finally, Section 5 concludes the paper and presents direction for future research.

2. THEORETICAL REVIEW

2.1. Electronic System

Electronic system is a set of electronic devices and procedures that serve to prepare, collect, process, analyze,

store, display, announce, send, and/or disseminate electronic information. Legal basis of the operation of electronic system in Indonesia is Law of the Republic of Indonesia No. 11 of 2008 as amended by Law No. 19 of concerning Electronic Information and Transaction (“EIT Law”) and Regulation of the Government of the Republic of Indonesia No. 82 of 2012 concerning Electronic System and Transaction Operation (“RG 82/2012”) and other related ministerial regulations. Obligations of electronic system operator based on Article 15 EIT Law must provide electronic systems in reliable and secure manner and shall be responsible for the proper operation of the electronic systems.

The electronic system operation implemented by electronic system operator may be done to public services and non-public services. Public services defined as an “an activity or series of activities in the fulfilment of the need for services in accordance with laws and regulations for every citizen and resident toward the goods, services, and/or the administrative provided by the public services provider”. The electronic system operator for public services shall conduct registration. Refers to Article 5 Regulation of the Ministry of Communication and Information No. 36 of 2014 (“RG 36/2014”), the criteria of electronic system operators providing a public service are: regulated or monitored by sectoral agencies and regulators; for governmental institution; that own electronic systems that:

- a. Are an online portal, site or application through the internet (including digital platforms) used to facilitate offers of and/or trade in, goods and/or services
- b. Have a facility for online payment and/or financial transactions through a data communication network or the internet
- c. Process electronic information containing or requiring a deposit of funds or funds equivalent
- d. Are used to process, manage or store data, including personal data, for operational activities serving the public in connection with electronic transaction activities
- e. Are used to deliver paid digital material through a data network either by way of downloading from a portal/site, email delivery, or through any other application to the user’s device
- f. Provide, manage, and/or operate a communication service in the form of short message, voice call, video call, electronic mail, and online chat (chatting/instant messaging), search engine, social media and social network, and a service of provision of digital information that may be in the form of text, sound, image,
- g. animation, music, video, movie, game or a combination of any and/or all of them, including in the form of streaming or downloading

Examine these criteria, fintech providers are included as the electronic system operator that shall conduct registration. The juridical consequence is each fintech

provider shall conduct registration before launching their products or services to public.

2.2. Electronic Transaction

Electronic transaction is a legal act that is committed by the use of computers, computers networks, and/or other electronic media. Electronics transactions are basically agreements that are carried out electronically by combining computer-based electronic system networks with communication system, facilitated by the existence of global computer networks or the internet. Civil relations between parties in electronic transaction contained in electronic documents and binding on parties. Electronic contract is an agreement of parties entered into by means of electronic systems.

2.3. Financial Technology

Fintech simply define as utilization of the development of information technology to improve the services of the financial industry. Fintech encompasses all forms of innovative digital and software technologies applied directly to the financial services sector. One notable characteristic of fintech companies, as opposed to banks, is that they utilize disruptive innovation to chip away the financial services market share of the banking industry. Nowadays, the notion of fintech has shifted to the development of a variety of banking products and other financial services that are more efficient so that produce separate industries whose products intersect with the commodities from conventional financial institutions.

In much the same way technology is changing the financial industry, it is also changing how the industry and financial authorities implement and enforce regulations. Regulatory technology (“regtech”), defined as a sub-set of fintech, has been growing strongly. Regtech focuses on technology-based solutions to attenuate or solve regulatory and supervisory challenges, including the challenges posed by the expansion of fintech. Beside regtech, supervisory technology (“suptech”) also emerge, suptech starting to tackle challenges faced by supervisory agencies. Regtech and suptech could lead to major paradigm shifts, which could be relevant to authorities in both developed and developing economies [5].

LASIC Principle define five important attributes of business models which can successfully harness fintech to achieve the objective of creating a sustainable social business for financial inclusion. The five attributes are: Low Margin, Asset Light, Scalable, Innovative and Compliance Easy [6]. Technological developments led to the birth of various types of fintech, including: payment and transfer; financial services institution; investment and financing.

2.4. Regulatory Sandbox

A regulatory sandbox is a regulatory approach, typically summarized in writing and published, that allows live,

time-bound testing of innovations under a regulator’s oversight. Novel financial products, technologies, and business models can be tested under a set of rules, supervision requirements, and appropriate safeguard. Regulatory sandbox creates a conducive and contained space where incumbents and challengers experiment with innovations at the edge or even outside of the existing regulatory framework. A regulatory sandbox brings the cost of innovation down, reduces barriers to entry, and allows regulators to collect important insights before deciding if further regulatory action is necessary [7]. Concepts like regulatory sandboxes have been applied in nonfinancial sectors (e.g. coding sandboxes for software development and clinical trials for pharmacy).

3. DISCUSSION

3.1. Regulatory Sandbox in Various Countries

3.1.1 United Kingdom

The United Kingdom, the pioneer of regulatory sandbox, first introduced the sandbox concept in 2015 through an initiative called Project Innovate by Financial Conduct Authority (“FCA”). Project innovate was aimed at allowing fintech companies to introduce their innovative products, services, business models and delivery mechanisms to the financial market, outside the full set of regulatory constraints imposed by the FCA. By lowering administrative barriers and costs to both market entrants and established financial institutions, the FCA’s sandbox sought to provide a safe space for fintech companies to innovate.

In order to accomplish this goal, the FCA develop a flexible and supervised regulatory sandbox.

In order to be eligible for the sandbox, a fintech company must operate within one of seven sectors of business within the United Kingdom. These sectors include retail banking, retail lending, general insurance and pensions, pensions and retirement income, retail investments, investment management, and wholesale financial markets. Additionally, the fintech company must satisfy the following criteria to qualify for the FCA’s sandbox protections: (1) the fintech company must be seeking to deliver innovation that is regulated in the U.K. financial services market; (2) the innovation must be ground-breaking or significantly different from those already in the marketplace; (3) the innovation must benefit consumers and promote competition; (4) the fintech company must display a genuine need to test its innovation within the sandbox; and (5) the fintech company must have a well-developed plan for testing and be prepared to test the innovation [8].

If the application is successful, the FCA will work with the business to agree on the details of the testing and then issue the sandbox regulatory tool. The regulatory tools available include individual guidance to the specific business, restricted authorization for testing, waivers or modifications in respects of the FCA’s rules, and no enforcement action letter.

3.1.2 Australia

Regulations on fintech in Australia regulated and supervised by Australian Securities and Investment Commission (ASIC) in 2016 with the released of Regulatory Guide 257, which contain its guidelines for the operation of its regulatory sandbox regime. The regulatory sandbox allows eligible fintech companies to test certain products or services for up to 12 months without an Australian Financial Services License (AFSL) or Australian Credit License (ACL). This can occur where:

1. There are existing statutory exemptions or flexibility in the Corporation Act 2001 and National Credit Protection Act 2009
2. The business can rely on ASIC's relief under ASIC Corporations (Concept Validation Licensing Exemption) Instrument 2016/1175 or ASIC Credit (Concept Validation Licensing Exemption). This component of Australia's Regulatory Sandbox is different from other sandboxes in the sense that the exemption is limited to start-ups (i.e. it excludes license-holders). Under the industry licensing exemption, eligible financial services businesses are not required to submit an application form and are able to commence testing without engaging with ASIC. The licensing exemption applies to a business that is not: banned from providing the products/services; or an existing license, a representative of a license, or a related body corporate of an existing licensee.
3. For other services, where ASIC grants individual relief. This condition apply when fintech company wish to test a product and service without a license but are not able to rely on the existing flexibility in the law or ASIC's fintech licensing exemption.

3.1.3 Singapore

The Singaporean financial regulator, Monetary Authority of Singapore ("MAS"), establish a Financial Technology and Innovation Group and a Fintech Office, which has the purpose of acting as one-stop virtual entity for all fintech related matters and promoting Singapore as fintech hub. MAS released its regulatory sandbox guidelines in November 2016. The regime, which is open for both financial institutions and other businesses, is in most respects similar to that of the FCA's sandbox regulation. Under the regime, MAS determines the specific legal and regulatory requirements that it prepared to relax for each applicant that wishes to participate in the regulatory sandbox, which includes an application stage and evaluation stage. If the application is approved, the concept enters the experimentation stage, after which the concept may be deployed on a broader scale unless the sandbox fails or the experimentation stage is extended [9].

3.1.4 United States

United States regulation of financial markets is fragmented across multiple federal and state agencies, which has made it challenging to establish a fintech sandbox for the country. Due to the current regulatory landscape in the United States, fintech companies are often faced with ambiguity and confusion as to which laws, regulations, and agencies govern their products and services. In an effort to ease this regulatory burden on fintech companies, there are at least two steps held in the federal state, specifically:

1. The Office of the Comptroller of the Currency ("OCC")
The OCC announced its plans to create a special purpose national bank charter for fintech companies, named Fintech Charter. Obtaining a Fintech Charter from the OCC essentially places a fintech company under the same regulatory framework as any other national bank, thus reducing the regulatory ambiguity commonly face by fintech companies. Currently, the OCC is facing pushback from state regulators, consumer protection groups, and community banks, all of whom argue that the OCC lack of legal authority to establish a Fintech Charter. Other opponents suggest that the Fintech Charters offered by the OCC would provide a legitimate option for only the largest fintech companies, due to uncertainty as to capital and other requirements for a Fintech Charter. Therefore, only a true regulatory sandbox could benefit fintech companies of all sizes, especially those that lack either the capital and expertise to seek a Fintech Charter from the OCC or the ability to navigate the United States' complex regulatory landscape with proficiency [10].

2. Establish the Financial Services Innovation Act of 2016 H.R. 611 ("FSIA") which will regulate the regulatory sandbox
Development on the FSIA has been stagnant since 2016, likely due to both the OCC's strong opposition to a federal sandbox and the OCC's emerging Fintech Charter program. The OCC doesn't support the sandbox approach because (1) the agency itself does not have the authority to waive compliance with regulations; (2) it never make sense to waive compliance with consumer protection or safety and soundness; and (3) ensuring the soundness and safety of financial products before rolling them out is the responsibility of the fintech company [11]. Under the FSIA, US regulatory sandbox has two approach, first the FSIA would create a government-wide fintech oversight regime by requiring each of selected federal agencies to establish their own Financial Services Innovation Office (FSIO). Second, FSIA establishes the sandbox itself, allowing a fintech firm to petition one or more FSIOs for an alternative compliance plan under an enforceable compliance agreement.

Gradually, states and regions are realizing that the lack of regulatory uniformity across state lines function as a barrier to innovation rather than as a safeguard for consumers. To this end in the regional and state levels, there are more tangible efforts towards the establishment of the regulatory sandbox. One of them is New England Regulatory Fintech Sandbox (“NERFS”), which is a form of coalition of the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut. The idea is to combine the UK and EU model for cross border banking operations. Uniformize fintech regulations in participating countries and allow fintech companies licensed to test their products in one state and do business in five other states [12].

Some states have already become involved in jumpstarting regulatory sandboxes within their jurisdictions. Most notably, Arizona launched its own state-wide fintech sandbox for start-ups operating in areas that would otherwise require a state license, such as consumer lending, mortgage lending, and money transmission. Utah follows Arizona’s footsteps by launching fintech regulatory sandbox through House Bill No. 378 on July 2019.

3.1.5 Indonesia

Regulatory sandbox concept in Indonesia adapted by BI and OJK through BI Regulation No. 19/12/PBI/2017 concerning the Implementation of Financial Technology (“BIR 19/12/PBI/2017”) and the OJK Regulation No. 13/POJK.02/2018 concerning Digital Financial Innovation in the Financial Services Sector (“OJKR 13/POJK.02/2018”). These regulations are the legal umbrella of the technology-based innovation in the financial sector. It serves to ensure that each service can be accounted for, has a high security system, and has good governance in service and protection for consumers. Through regulatory sandbox, BI and OJK tests business

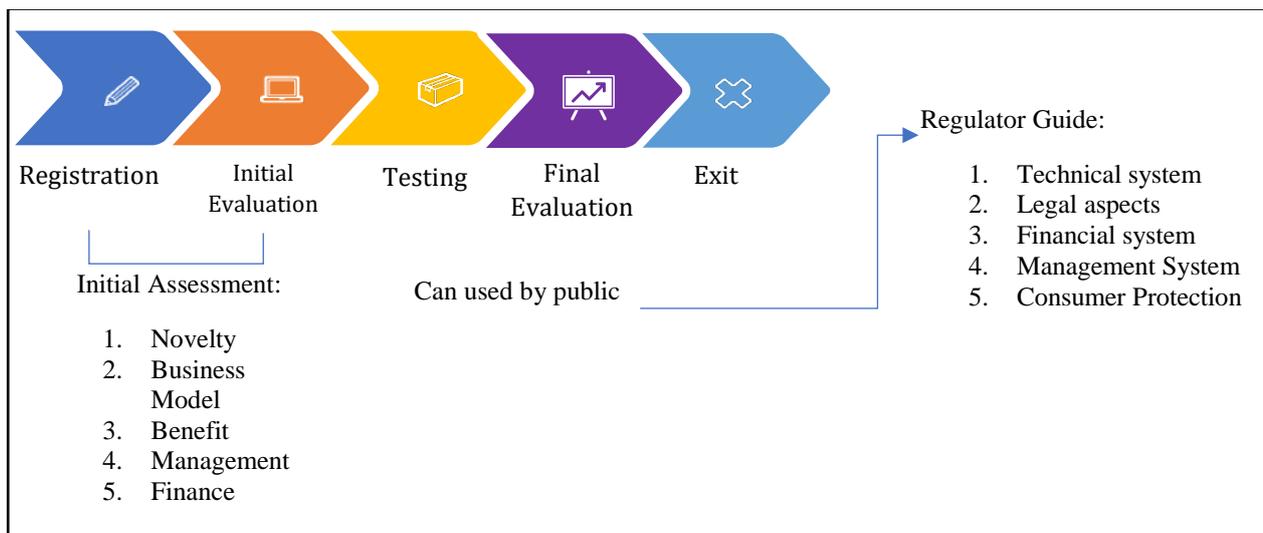
process, business models and new financial instruments in the financial services sector involving digital elements. A regulatory sandbox similar to an incubation process, in which fintech companies arrange their products and business models while the financial regulator actively assesses regulations that will support them.

On quick review, OJKR 13/POJK.02/2018 and BIR 19/12/PBI/2017 are similar. Both regulations aim to enhance and support the digital financial ecosystem that is currently flourishing. BIR19/12/PBI/2017 more specifically covers the payment system for fintech that would affect monetary and financial stability, while OJKR 13/POJK.02/2018 covers more generic digital financial innovation. Though there are overlaps between BI’s and OJK’s jurisdiction (most notably market support services and investment management services), current legislation provides that BI registration (and consequently participation in the BI regulatory sandbox) will not be required where the fintech is registered with the OJK, although no such provision applies vice versa. It is likely that BI and OJK coordinate amongst themselves where a fintech qualifies for both regulatory sandboxes to prevent double testing.

3.1.6 Comparison about the Regulatory Sandbox Steps and Regulations between Selected Countries

Regulatory sandboxes have been developed by regulators in a few jurisdictions to provide a controlled and contained environment in which firms can conduct pilot trials of innovative financial services and products in a timely and cost-effective manner before there are launched on a larger scale. Although there are many variations of the regulatory sandbox process used in various countries, generally the steps applied in the regulatory sandbox are as follows:

Picture 1 Steps of Regulatory Sandbox



While regulatory sandboxes vary from jurisdiction to jurisdiction, they share some common features and differ in others. To facilitate the differences and similarities of indicators applied in related countries, the following tables

compares the regulatory sandbox framework in the United Kingdom, Australia, the United States, Singapore and Indonesia.

Table 1 Comparison of Regulatory Sandbox Frameworks in United Kingdom, Australia, United States, Singapore and Indonesia

General Information		Benefits for Business				Safeguards				
Country	Regulator	Authorized/ Licensed/ Incumbent	Unauthorized/ Unlicensed/ Startups	Regulations relaxed or waived	Clarifications on regulatory expectation	Limits on customers, value and/or duration	Licensing requirements or waived	Additional reporting obligations/ closer monitoring	Additional consumer protections/risk mitigation	Specified regulations that cannot be waived
United Kingdom	FCA	V	V	V	V	V	V	V	V	V
Australia	ASIC	X	V	X	X	V	V	V	V	V
Singapore	MAS	V	V	V	X	V	V	V	V	V
United State	FSIA, OCC	X	V	V	V	V	V	V	V	V
Indonesia	OJK	X	V	V	V	V	V	V	V	V
	BI	X	V	V	V	X	V	V	V	V

3.2. The Role of the Ministry of Communication and Information and The Cyber Body and National Encryption Agency in Guaranteeing the Accountability of the Regulatory Sandbox in the Fintech Industry

3.2.1 Ministry of Communication and Information

Regulatory sandbox concept is not known in Ministry of Communication and Information's regulations. but to maintaining the security in the implementation of electronic transactions, especially fintech, the Ministry of Communication and Information has preventive and repressive methods:

- a. Preventive: the obligation to register to public services electronic system operator, including fintech providers
- b. Repressive: toward reports of illegal fintech activities (such as data fraud), the Ministry of Communication and Information applies a proactive step, by checking whether the fintech company is registered with the OJK and/or BI or not, if it is not registered, the fintech company will immediately blocked.

In respond to cybersecurity aspect in fintech industry, the Ministry of Communication and Information used the Public Key Infrastructure technology as a security guarantor mechanism in the form of a digital certificate. Digital certificate can provide four guarantees in electronic transaction: a guarantee of valid identity; guarantee of confidentiality; guarantee of the integrity and non-guarantee guarantee of documents and electronic

transaction. Digital certificates already applied in various countries for almost all online services that require legal protection and high accuracy of identity.

3.2.2 The Cyber Body and National Encryption Agency

This institution formed through Presidential Regulation No. 35/2017 as amended by Presidential Regulation No. 113/2017 concerning Cyber Body and National Encryption Agency, it is tasked with protecting the nation's cyber world and boosting the economy. The Cyber Body and National Encryption Agency's duties are: implement cyber security effectively and efficiently by utilizing, developing and consolidating all elements related to cyber security. Regarding electronic transactions, the Cyber Body and National Encryption Agency plays a role in:

- a. Standardization of electronic system providers
- b. Online dispute resolution
- c. Guaranteed security in transactions

Security Management System, previously competence of the Ministry of Communication and Information, was transferred to the authority of the Cyber Body and National Encryption Agency. The Cyber Body and National Encryption Agency synergizes all cyber security with a cycle containing five stages: identification; protection; detection; prevention; and recovery. Indirectly the five stages have accommodated various forms of security controls: preventive; corrective; detective and administrative.

In ensuring cyber security of fintech in Indonesia, the Cyber Body and National Encryption Agency has its own

constraints and challenges, which include: (a) It need to be supported by legal provisions in the form of laws, currently only supported by Presidential Regulation. It is intended that in carrying out their duties, the Cyber Body and National Encryption Agency can run more effectively; (b) Coordination with relevant government agencies; (c) Establishing cooperative relations with fintech companies, whether through associations or directly; (d) Preparation of regulations or guidelines relating to information security of fintech providers, protection of personal or consumer data, and information security audits; (e) Preparation of reliability certification mechanism for electronic system used by fintech services [13].

4. CONCLUSION

1. The development of fintech in several countries has given high attention to fintech regulation and supervision, one of them is the establishment of a regulatory sandbox mechanism aimed at supporting fintech operators to ensure that they comply with existing regulations. United Kingdom through FCA became the first country to initiate the establishment of the regulatory sandbox, followed by various countries in the world, including Australia through ASIC, Singapore through MAS and Indonesia through OJK and BI. There is a similarity in the process of a regulatory sandbox found in various countries, which includes the stages: Application, Selection, Regulatory Sandbox, and Exit. In addition, differences in regulatory sandbox arrangements in various countries can be seen from three indicators, namely: Participants in the Sandbox Regulatory, Benefits for Fintech Organizers, and Consumer Protection.
2. The regulatory sandbox in Indonesia is accommodated by two institutions, BI through BIR and OJK through OJKR. Although it provides the same understanding of the regulatory sandbox, the object of testing of these institutions are different. Financial services that are the responsibility of Bank Indonesia are fintech operators whose fintech products are in the form of or related to the payment system. While the OJK conducts tests on fintech operators whose activities include: settlement of transactions; capital accumulation; investment management; fund collection and distribution; insurance; market support; other digital financial supporters. Both BI and OJK provide criteria that must be met so that fintech operators can submit regulatory sandboxes, including services or products that are carried out must be innovative, use information technology as the main means of providing services to consumers, and be useful and widely used.
3. From a technical point of view, government institutions that are authorized to regulate and supervise the implementation of fintech are the Ministry of Communication and Information and the

Cyber Body and National Encryption Agency. However, there has been no firm coordination carried out by the technical and business implementing agencies (BI and OJK) in relation to the regulatory sandbox in the fintech sector.

5. RECOMMENDATION

1. Coordination with several institutions related to the implementation of fintech is needed, including in the business fields, BI and OJK as well as in the technical fields, the Ministry of Communication and Information and the Cyber Body and National Encryption Agency. In this case the BI and OJK act as regulators and supervisors of financial services while the Ministry of Communication and Information and the Cyber Body and National Encryption Agency play a role in terms of information technology, especially protection against cybersecurity. The coordination can be in the form of including the views of the technical matters in the consideration that a fintech operator can conduct a regulatory sandbox trial mechanism or not. This can be done by making fintech operators' compliance with technical obligations as a concern when fintech operators conduct regulatory sandbox registrations at both OJK and BI. In addition, a Cybersecurity Forum is also needed to facilitate coordination with all fintech stakeholders in the event of cyberattack incidents and exchange of information about risk mitigation.
2. Preparation of provisions and standards for the mechanism of handling consumer complaints and dispute resolution in fintech operators through the Internal Dispute Resolution (IDR) mechanism and reviewing the implementation of dispute resolution through Online Dispute Resolution (ODR).

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