EXPLORING THE FINTECH FRONTIER: A COMPARATIVE STUDY ON SINGAPORE'S REGULATORY SANDBOX WITH THE INDIAN REGULATORY MECHANISM

[1] Nirankush Kenjige, [2] Dr Chaitra Rangappa Beerannavar

[1]School of Law CHRIST (Deemed to be University), Bangalore
Email: nirankushformal@gmail.com

2School of Law CHRIST (Deemed to be University), Bangalore
Associate Professor and Associates Dean
Email: chaitra.beerannavar@christuniversity.in

Abstract:

A 'regulatory sandbox' typically involves testing of new products or services in a controlled, regulatory environment. This helps to gather evidence on the benefits and risks of a new financial innovation, while monitoring and managing the risks. The sandbox provides a structured way for regulators and the innovators, to interact with the ecosystem, and assist the regulators to develop regulations that encourage innovation and enable the delivery of relevant, low-cost financial products. It is an important tool that can create a more dynamic, evidence-based regulatory environment that helps to adapt the various emerging technologies. The paper devolves around the niche 'regulatory sandbox' mechanism as followed by Singapore, alongside a comparative analytical study with jurisdiction of India, and India's stance on the regulatory mechanism. The paper aims at analysing the regulatory fallacies in the Indian system by analysing the risks involved, and thereafter looking at the security and financial implications. Ever since the increased valuation and societal consideration of the block chain technology and the secured nodal transactions, the impact and importance it gained, in order to surface a regulatory sandbox in Singapore - being a notable and imminent participant in the technological advancements attached to the financial technology- is inevitable. From P2P lending to the perils of Insurtech, Singapore has been evolving towards the creation of a regulatory sandbox for the fintech industry and hence the understanding of the same plays a pivotal role in the overall Performa. Start-ups such as ADDX and BondEvalue are paving the way to provision of direct access to the financial market and thereby, assisting in the general mitigation in Singapore. Hence, the progress in India, and risk factors attached with it considering there exists no legal framework to govern the functioning of a 'Regulatory Sandbox', require in-depth detailing and introspection.

Key Words: Regulatory Sandbox, Singapore, Innovation, FinTech, RBI, MAS

Introduction

A Regulatory Sandbox in the context of the 'Fintech' sector, is defined as a framework or an environment that allows the stakeholders to pilot financial services or products for experimental purposes. The prime authority that is involved in the overall working and the transactions of the related activities, in Singapore, is the Monetary Authority of Singapore ("MAS"). The MAS works towards providing the required regulatory support to the FinTech industry by bringing about some relaxations in the legal requirements, and in the regulatory phase as well, such that the necessary experiments during the duration of the concerned sandbox can be carried out. [1]

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[1] Hsu, Sara, and Jianjun Li. "Risks of Fintech and Regulatory Technology." In *China's Fintech Explosion: Disruption, Innovation, and Survival*, 202–20. Columbia University Press, 2020. Accessed June 5, 2024. http://www.jstor.org/stable/10.7312/hsu-19656.12.

Considering the fact that an 'approved system' is experiment based, the overall impact of the survey and study of the system, the failure that could possibly happen in this regard should be appropriately safeguarded with the help of a system that can back up the project with necessary safety measures to ensure the soundness of the system. Post the successful systemic operation and experiment, and after such exit from the regulatory sandbox, there has to be due compliance of the regulations and associated laws as a matter of priority and relevance. The regulatory framework associated to the sandbox by the Monetary Authority of Singapore (MAS) is in the form of guidelines, along with the provision of digital advisory services that has been set up by MAS for the purpose of consideration for the interested parties.

The working of regulatory sandbox in Singapore is such that, the MAS, being the supreme regulatory authority brings about the information, where it approves those companies and their requests to experiment the regulatory sandbox as a time-to-time procedure. The consumers must take extreme care while they are dealing with the companies that have signed up for regulatory sandboxes and similar experiments, because they are being exposed to the kind of risks that arise due to the higher probabilities of flexible mechanisms, as proposed by regulatory sandboxes, according to the choices made by the respective corporations.

The Monetary Authority of Singapore, hence, issues an investor alert list for the welfare of the investors to understand those corporations, that will be involving themselves in such experimental activities as per the information provided by the MAS. The alert list has been extremely impactful and useful for the purpose of consideration and to be aware about the future based possibilities. As per the investor alert list as issued by the MAS, the list is such that there could be wrong and rightful perceptions about the corporations concerning the licensing, or by any other means of regulations, or whether there has been offers made with regard to the business units or trust collectives via investment schemes, considering the perception as stated and taken by the parties and as recognized and registered by MAS, or whether there has been an offer made as wrongly perceived based on any filings or any documents that have been uploaded in this regard based on the registration or lodging. This is to also bring about the fact into consideration, that the list is neither exhaustive nor exclusive in nature. The updates have been duly provided by the MAS in the light of the information provided.

In India, the highest regulator with respect to Regulatory Sandbox is the Reserve Bank of India (RBI) whereas in Singapore its Monetary Authority of Singapore (MAS). In India, the draft regulations post public opinion came in 2019,[2] with all the suggestions and operations that divided the sandbox operation into two categories which is one and the same as that of Singapore, namely sandbox express and sandbox plus.[3] Though by 2024, RBI had tested 4 cohorts in the form of 'Retail Payments', 'Cross-Border Payments', 'MSME Lending', and 'Prevention of Financial Frauds', there came about no regulatory framework following such testing. Moreover, the steps that are undergone in the regulatory regime of Singapore is on a case-to-case basis and the same is proposed in the Indian model as well. The operation in India, however not only requires the intervention from RBI but also that of the Securities Exchange Board of India (SEBI) and statutory back up from provisions under the Companies Act, 2013 and associated regulations.[4]

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[2] Dekker, Brigitte, et al. "Fintech Disrupting the Financial Industry." In *The Geopolitics of Digital Financial Technologies: A Chance for Europe?*, 4–5. Clingendael Institute, 2022. Accessed June 5, 2024. http://www.jstor.org/stable/resrep40265.5.

[3] Hsu, Sara, and Jianjun Li. "Overview of China's Fintech Industry." In *China's Fintech Explosion: Disruption, Innovation, and Survival*, 1–42. Columbia University Press, 2020. Accessed June 5, 2024. http://www.jstor.org/stable/10.7312/hsu-19656.5.

[4] David Livingston et al., *Applying Blockchain Technology to Electric Power Systems* (Council on Foreign Relations, 2018), available at http://www.jstor.org/stable/resrep21340 (accessed May 10, 2024).

Considering the pace at which technology is evolving in India, and how Finance and Technology too are now being interlinked, it is pertinent to take a closer look at how the regulatory framework in India could pave the way for innovation in the future. However, as one can point out, India so far lacks a concrete regulatory framework dedicated to the governance of a 'Regulatory Sandbox' in India. In such a scenario, the researcher in this paper explores the impact of the absence of such a regulatory framework, while also exploring and proposing an alternative for laying down the principals for evolution of the various sectors intertwined with technology. It is also pertinent to analyse the above while keeping in mind the situation in Singapore so as to effectively achieve the objective of this paper.

Understanding a regulatory sandbox

The MAS FinTech regulatory sandbox framework has also been represented by infographics by the MAS, wherein there has been a classification of the same as 'sandbox express' and 'sandbox plus'. [5]The former has been made in a more customisable and flexible manner, such that the regulated activities can be carried out in a dynamic manner, without creating much room to bring in a positive impact for first approaches only. [6]

The second set of regulatory mechanism is the sandbox plus, wherein there has been pre-defined movements and motions for the purpose of encouraging low-risk activities for the first movers but has also inculcated fast track approvals in a positive note. In brief, with regard to sandbox plus, there is an improved, fully changeable and customisable environment that is pre-defined. Where the financial grant has been provided to the first movers, creative aspects such as deal Fridays are created for their participation.

The concept of Regulatory Sandbox

The regulatory sandbox, in its prime understanding is referred to as live testing, wherein there are a set of products and services that are in the market or platform to undergo experimental testing, which could be possibly allowed by way of permission or may be denied the permission to be used in the economy. There are multiple relaxations, that are provided on this regard by the Government with the aim of creating a friendly platform such that, these experiments table in order to make the outcomes possible for a greater framework.

The formation of a regulatory framework is not possible unless the respective legislature provides support on this regard. The stakeholders in this regard are the regulators, the innovators, the potential providers of the financial services backed by technology - being the deployers-, and finally the consumers or the end users of the technology who will be making use of the said services. The end users could be potential institutions or parties wherein the utility is ultimately utilised. The field tests are based on the evidence and data collected, along with the financial tools, that are scientifically gathered to assess the actual risks involved. Due to the engagement of the innovative tools that are brought about in the market by the individual deployers, these tests by the regulators in a controlled sandbox are required.

Now, once the platform has been engaged in the overall conduction of the regulatory tests, a structured avenue can be provided on this regard such that the stakeholders will be provided with an ecosystem to engage in the conduction of their business. Hence, the innovation involves a two-way communication. That is, on one side, there is response to the innovation and on the other side there is enabling of the innovation which could be facilitated by means of undertaking delivery of what that is classified as relevant risk factors post analysis. Moreover, the regulatory sandbox acts as an effective tool wherein, an evidence based, responsive and robust system is created towards evolving a

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[5] Walker, George. "Financial Technology Law – A New Beginning and a New Future." *The International Lawyer* 50, no. 1 (2017): 137–216. Accessed June 5, 2024. https://www.jstor.org/stable/26415633.

[6] *supra* note at 1, pg. 3.

technological forum in the financial industry. Hence, the emerging technology in the finance sector, therefore, stands apart by being responsive based on the evidence run experiments. [7]

Objectives of creating a regulatory sandbox

The prime objectives as observed in the light of the public opinion and legislative regulatory framework were that, the regulatory sandbox works in such a way that before creating a wide and impactful launch, with possible relaxations provided in the regulatory framework by the government. Hence, a platform is provided with the access to such innovative technology creators to in order run on such relaxations. The periphery of such innovations and experiments are created by way of creating an open opportunity wherein these tests are run thereafter. If precisely concluded, these regulatory sandboxes are formally established regulatory programs that provide the participants of the market to run tests over both their products and services or even the proposed business models with the interested or targeted population, with their complete awareness of risks and losses that could possibly be arising as a result or consequence of their action and admission.

The purpose of enabling a regulatory sandbox is two folded. One, wherein the new tools are introduced to the economy with the aim of building an innovative working of the ecosystem, and secondly considering the fact that the existing tools in the market could be used in such a way that it helps in drawing additional benefits to the consumers or society in general.

Benefits and risks of a regulatory sandbox

The setting up of regulatory sandbox in itself has significant benefits to all the stakeholders who were aforementioned and other profits to the society in general as well, keeping aside the negatives which are identified in the form of risks that are involved to the economy and society as a whole. Now, to begin with, there is an essential learning that takes place with tests that are run by means of creating a platform to experiment with the help of the stakeholders and the involved business models.

The creation of such experiments will help in providing lessons as to what went wrong, if at all there is non-performance of certain factors and success templates as provided based on the results. Primarily, the regulations as created by regulators, shall undergo strict study and analysis of the empirical evidence that is available directly from the respondents, in the light of the risk factors involved therein. There will be due consideration of the proposed regulatory changes or new regulations that are created owing to the requirement of the innovators without negatively affecting the consumers and other stakeholders.

Impact on innovations

The encouragement for the innovations is to be done as the next immediate action and hence towards that purpose, the acknowledgements, that are to be noted are the government regulations which are currently absent at the stage of inception. Secondly, there is a no policy with regard to any changes or innovations that propose such an innovation and finally on whether such an innovation shall be used for purpose of easing and effecting the financial services that are provided in this regard or not, has to be checked and ensured.

Regulatory sandbox in the fintech industry has become more of a necessity rather than a luxury. It is therefore an imminent need to create a conducive environment to the growth and development of such innovations especially for the regulation of such technologies. In India there are a few ideas and designs that are under discussion for creating a regulatory sandbox. With a number of entities posing the probability of running and the testing the innovative products in the market, the existing start-up ideas

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[7] Scopsi, Martina. *The Expansion of Big Data Companies in the Financial Services Industry, and EU Regulation.* Istituto Affari Internazionali (IAI), 2019. Accessed June 5, 2024. http://www.jstor.org/stable/resrep19656

in the market and aspects such as digital financial inclusions, Know Your Customer (KYC) updates, e-payments, online banking etc. are hence used with prevalence. [8]

Although cohorts vary according to time, they are mostly stipulated to be less than a year or probably six months in operation to provide with such reduced number of cohorts. The Reserve Bank of India (RBI) by way of issuing a list of products and services wherein innovation is probably expected in the upcoming years are retail payments, transfer of monetary services, P2P lending and other market based lending, digital based KYC system, financial advisory, Digital Know Your Customer Services (KYC), asset management, digital identification, e-contracts, cyber security and financial inclusion that are convinced and introduced in the financial market. With respect to technology as the product classification, it includes the mobile applications and APK downloads, data analytics that are involved and used in application, Application Program Interfaces (API)s, crypto currency and the used block chain technology wherein the node to node encrypted transactions are enabled for the usage and assistance to the consumers involved, and the latest usage of the inevitable artificial intelligence and machine learning techniques that are used in arena wherein there is unexpected and unbelievable ease of operations and scope of applications thereafter.

The usage and operation of Regulatory Sandbox in reality

For the introduction and enabling of the above mentioned innovations and applications, there has to be fundamental usage and adoption of certain regulatory requirements and applications such that the regulatory body in India- The Reserve Bank of India (RBI), can possibly bring in certain warranted or otherwise relaxations in order to classify them as regulatory classifications wherein such relaxations lead to better scheme of operations as required for the sandbox applicants during the course of operations on a case-to-case basis. The aspects that are mandatorily required to be covered by the applicants of the benefits of such regulatory sandboxes have to ensure that there is ensured privacy of the consumers, the storage of the data involved belonging to the customers involved are securely maintained and taken care of, the transactions are secured with utmost care of data maintained and the usage of the most advanced technologies, the requirements of KYC, AML or CMT as required and enshrined by the laws of respective governance as existent during the said period and the statutory requirements and related aspects involved in the transactions. [9]

The prime focus of regulatory sandbox revolves around terms of innovation and related tools. Once the 'raw materials' are lined up, the scheme of operation comes in to action. There shall be testing process and operations via comprehensive process which begin their testing process for nearly 10-12 selected business models or parent entities via a selection procedure and the said process will be subjected to the discretion of the entities detailed as a framework in order to come under the criteria of the eligible participants who fall well within the selection process as provided by the entities. <u>(Attached sample below):</u>

[8] Scopsi, Martina. *The Expansion of Big Data Companies in the Financial Services Industry, and EU Regulation.* Istituto Affari Internazionali (IAI), 2019. Accessed June 5, 2024. http://www.jstor.org/stable/resrep19656.

[9] Dove, Terrence. "Exploring the Future of Fintech." *Women of Color Magazine* 17, no. 1 (2018): 39–41. Accessed June 5, 2024. https://www.jstor.org/stable/26580518.

Annex I

'Fit and Proper' Criteria for Director(s)/Promoter(s) of the Sandbox Entities

1. The Reserve Bank of India (RBI) shall satisfy itself that the promoter(s)/director(s) of the sandbox entity to be accepted to the regulatory sandbox (RS) meets the 'fit & proper' criteria based on the following documents submitted for each of the promoter(s)/director(s):

a. Permanent Account Number under the Income Tax Act, 1961
b. Director Identification Number
c. Bank account details including loan accounts
d. CIBIL score
e. Reference report obtained from regulators under which the entity is registered/licensed
f. Other documents/reports listed under para no. 2 for each of the promoter(s)/director(s) of the entity

2. For the purpose of due diligence of the promoter(s)/director(s), in addition to the above, the entity shall obtain a 'declaration and undertaking' from the director(s)/promoter(s) in a standard format as furnished in Annex II. A copy of the same shall be forwarded to the RBI.

This is to take place in an efficient and effective manner wherein a list of the products or services that are involved had been released. The said tools however cannot be accepted for the purpose of testing due to various factors such as registry of credit, information of credit, crypto currency and assets, trading and settlement agreements in crypto currency, the initial coin offerings, chain marketing services and any such products or such services are banned by the regulators or statutes in the government of India. [10]

The focus of the regulatory sandbox has to be narrow in such a way that the innovations and the terms of intake are regulated and limited in nature. The entities pass the fit and check criteria by undergoing multiple testing processes. There is also a specified business entities criteria that has to be undergone by fulfilling all the relevant conditions as by the regulatory sandbox. Other relevant aspects involved and as observed by the RBI includes boundary conditions, ensured transparency, consumer protection, end-to-end encrypted sandbox process, the timelines and stages of such process, screening in multiple stages, test designs and assessments, the evaluations and testing criteria, the disclosures, statutory compliance and legal issues, the required disclosure and finally the testing involved with a 'Fit and Proper Criteria' as proposed by the Reserve Bank as subjected the timely response by the banking corporations. The promoters or directors of the said sandbox entities, that is, those entities run in order to operate and run tests over their innovative line of products or services as required. The proposal post public opinion consists of the aforesaid annexure and the statutory disclosures undertake by way of declaration by the key managerial personnel of the entities or the start ups involved in the FinTech industries. (Attached sample below):

[10] Reserve Bank of India, Draft Enabling Framework for Regulatory Sandbox, Report dated 18 Apr 2019, https://rbi.org.in/scripts/PublicationReportDetails.aspx?UrlPage=&ID=920#:~:text=A%20regulatory%20sandbox%20%28RS%29%20usually%20refers%20to%20live,relaxations%20for%20the%20limited%20purpose%20of%20the%20testing.

Annex II

Declaration and Undertaking by Promoter/Director
(with enclosures as appropriate on)

I.	**Personal details of promoter/director**		
	a.	Full name	
	b.	Date of Birth	
	c.	Educational Qualifications	
	d.	Relevant Background and Experience	
	e.	Permanent Address	
	f.	Present Address	
	g.	E-mail Address/Telephone Number	
	h.	Permanent Account Number under the Income Tax Act, 1961	
	i.	Director Identification Number	

Comparative study- Singapore model and Indian proposed model

As far as the operation of the regulatory sandboxes are concerned, the much needed comparison that needs to be drawn on this regard is the line of operation with Singapore. Undoubtedly, innovation is given prime importance, as a result of which the said entities have been already present in the line of operation in the Singaporean economy. These entities have been performing effectively with respect to their line of action. In India, where the same continues to prevail as a draft as an enabling regulatory framework since 2019, even after the receipt of public consultations which brought it in the verge of execution by the legislature at the apex level, post verified operative efficiency. [11]Hence, in India the adaptation of the strict regulatory measures and mechanisms continue to prevail as a live testing in the controlled and test regulatory interface environment with respect to the aspect regulators.[12]

In India, the highest regulator with respect to Regulatory Sandbox is the Reserve Bank of India (RBI) whereas in Singapore its Monetary Authority of Singapore (MAS). In India, the draft regulations post public opinion came in 2019,[13] with all the suggestions and operations that divided the sandbox operation into two categories which is one and the same as that of Singapore, namely sandbox express and sandbox plus.[14] Though by 2024, RBI had tested 4 cohorts in the form of 'Retail Payments', 'Cross-Border Payments', 'MSME Lending', and 'Prevention of Financial Frauds', there came about no regulatory framework following such testing. Moreover, the steps that are undergone in the regulatory regime of Singapore is on a case-to-case basis and the same is proposed in the Indian model as well. The operation in India, however not only requires the intervention from RBI but also that of the Securities Exchange Board of India (SEBI) and statutory back up from provisions under the Companies Act, 2013 and associated regulations.[15]

There have been multiple start-ups in Singapore that has been a product of a successful operation due to the opportunity that they received in order to verify the operation of the line of products and services that are recognized as startups such as ADDX and BondEvalue wherein innovation in their line of business with respect to the success factors which are held within precise parameters without fail. The

[11] Ducas, Evangeline, and Alex Wilner. "The Security and Financial Implications of Blockchain Technologies: Regulating Emerging Technologies in Canada." *International Journal* 72, no. 4 (2017): 538–62. Accessed June 5, 2024. https://www.jstor.org/stable/26414135

[12] Walker, George. "Financial Technology Law – A New Beginning and a New Future." *The International Lawyer* 50, no. 1 (2017): 137–216. Accessed June 5, 2024. https://www.jstor.org/stable/26415633.

[13] Dekker, Brigitte, et al. "Fintech Disrupting the Financial Industry." In *The Geopolitics of Digital Financial Technologies: A Chance for Europe?*, 4–5. Clingendael Institute, 2022. Accessed June 5, 2024. http://www.jstor.org/stable/resrep40265.5.

[14] Hsu, Sara, and Jianjun Li. "Overview of China's Fintech Industry." In *China's Fintech Explosion: Disruption, Innovation, and Survival*, 1–42. Columbia University Press, 2020. Accessed June 5, 2024. http://www.jstor.org/stable/10.7312/hsu-19656.5.

[15] David Livingston et al., *Applying Blockchain Technology to Electric Power Systems* (Council on Foreign Relations, 2018), available at http://www.jstor.org/stable/resrep21340 (accessed May 10, 2024).

regulatory sandbox is helping in the overall FinTech operation and acceleration of the industry by creating a great leap in the role and impact in the industry by a matter of time alongside overall operations and assisted interference. As far as progressive regulator like Monetary Authority of Singapore (MAS) is concerned, there are multiple ways in which the associated acts of 'regulatory innovations' can be undertaken, called so because of the fact that regulatory sandbox in itself as a concept is an innovation in the regulatory legislative field wherein there are multiple ease of operations by way of strict but steady relaxations that are to be made in the impactful line of operations.

The vitality of regulatory sandbox is to be considerate to the fact that the financial as proposed by the FinTech entities are highly relevant to the extent of impacts the same can cause ion the economy, irrespective of the factors or individuals who are impacted or affected by the scale of operations. This could be positive or negative in nature, however the impact caused inevitable and hence has to undergo the process of operative skill set. The innovations hence, being a responsible and progressive regulator, Monetary Authority of Singapore (MAS) hence regulates the venturing into those territories of operation wherein the unexplored territories. [16]

The working of Monetary Authority of Singapore (MAS) in Regulatory Sandbox functioning

The Monetary Authority of Singapore (MAS)'s regulatory sandbox that has been created and established in to functionality has been operating in three different variants for the purpose of companies to operate as they ease and please in order to formulate their innovative tools in to operation in the respective markets. [17]

A live environment is provided by the regulatory sandboxes as approved and regulated by the MAS to the Singaporean FinTech corporations that are hence with effective and operative guardrails ensuring non-dysfunctionality, depending on the type of consumers with the transactions valued at maximum, such that there is free commotion of innovation with no worries whatsoever in the overall regulatory interface as specified during the period in which the sandbox is in operation.

The companies hence can harbour their respective interfaces for the safe testing of the impact and operative tendencies of their product or line of services in their robust environment based on viability, with no worries whatsoever in the percept of regulatory compliances and applications of due requirement wherein no restrictions are imposed for the testing interface for the interested FinTech corporations. Meanwhile, the testing interface operates, the Singaporean corporations work in such a way that there could be a safe test that can take place with the services and products of FinTech interfaces wherein there is involvement of actual money and licensing and if at all there is a failure of operative skill set of these products, MAS provides the corporations with assistance to come up with alternative mechanisms so as to get licensed by the monetary authority. Post this, irrespective of the mechanisms used or applied for testing, there is a forum for receipt of useful feedback from the market conditions by way of usage of data in the live market setting by the parties involved in the said transaction. [18]

Secondly, the task involved is the progress to be made within the safeguards wherein the geographical limitations and scope of the products and the line of services are experimented on a cosmopolitan basis

[16] EDB Singapore, How Singapore's FinTech Regulatory Sandbox is helping fintech innovators accelerate time to market, Singapore Government Agency, https://www.edb.gov.sg/en/business-insights/insights/how-singapore-s-fintech-regulatory-sandbox-is-helping-fintech-innovators-accelerate-time-to-market.html (Last accessed on 20 April 2023).
[17] Yiping Huang and Xun Wang, "Digital Connectivity in China and Asia: The Case of Mobile Payments," in *New Dimensions of Connectivity in the Asia-Pacific* (Christopher Findlay & Somkiat Tangkitvanich eds., 1st ed., ANU Press, 2021) 203–24, available at http://www.jstor.org/stable/j.ctv23hcdsw.14 (accessed May 10, 2024).
[18] Lin, Lin, and Christopher Chen, "The Promise and Perils of Insurtech," *Singapore J. Legal Stud.* (2020) 115–42, available at https://www.jstor.org/stable/27032603 (accessed May 10, 2024).

with the assistance of a global regulator who shall undertake special supervision on the nature of products involved, that shall provide evaluative feedback on what can support to provide the best innovation and thereafter provides the most detailed analysis of the risks that are posed by the product in the market in general and what needs to be done as a coping mechanism to override the risks. [19]

The third and last operative step in a regulatory sandbox as acknowledged and followed in Singapore, post the aforementioned steps is to see whether there is enough confidence for the interested entity to stand on their own as a financial entity in the market involving other competent products wherein the licensing journey of the entity can be fastened to a great extent even after the regulatory barriers are eased and the relaxations are taken away in the light of provision of license or the rejection of application thereafter. Once the process of licensing is undertaken, post the experiments involved, there could be scaling effectuated with assurance for the innovation in the FinTech market as for user interface and acceptance.[20]

Harmonising with the regulations of MAS

The entire theme of operation that comes under the MAS with the regulatory sandbox is to harmonise the innovation is by eased and flexible regulations. The finance companies that are fledging in the industry move ahead with innovative and technologically far-headed operations by proposing a viable route in order to receive the concerned licensing requirements and thereby activities that are duly regulated by the monetary authority by the line of regulatory sandbox. Now how is this undertaken in Singapore, based on the requirements of regulatory easiness are by way of a three fold mechanism and operative skill set. First and foremost, there is the deal of testing wherein there is conduction of real time assessments by involvement of first hand empirical studies and surveys involving those experiments whose results shall approve whether the said line of products or services are compatible enough to run and operate in the market.

Private entities and start-ups taking up the position in Singapore

As far as the home grown markets of private nature are concerned there has been several platforms that have approached MAS to be classified as regulatory sandbox entity ever since the inception in 2017,[21] wherein start-ups like ADDX came up with the innovative approach involving the financially underprivileged, by way of providing access directly from their own convenience to the private markets for the purpose of undertaking transactions. Without any barriers of entry to the market based on their financial inability. As far as the regulatory sandbox innovation, being a seven year old concept is concerned, ADDX became one of the pioneer who made effective use of the innovative tool that turned out to be a milestone in the FinTech industry. The control undertaken in the regulatory mechanism was such that ADDX was provided with permits to undertake so that could live test their technological innovation in their infancy stage alongside the positive approach towards mitigation of the possible risks that could be present in the industry. [22]

ADDX, with its technologically advanced approach had a three-step operation in Regulatory Sandbox before entering the market. That is, in the primary step, there has been attempt to discover alternative measures to get licensed wherein the boundaries of the Regulatory Sandbox was tried in operation in order to understand the risks of the model by adopting the novel products by ensured compliance and statutory diligence and risk allocation. Secondly, there has been a rigid loop for feedback sessions post the first trial run wherein the regulatory boundaries operated with utmost risk allocation and

[19] Hsu, Sara, and Jianjun Li. "Risks of Fintech and Regulatory Technology." In *China's Fintech Explosion: Disruption, Innovation, and Survival*, 202–20. Columbia University Press, 2020. Accessed June 5, 2024. http://www.jstor.org/stable/10.7312/hsu-19656.12.

[20] Jeffrey Luther, "Twenty-First Century Financial Regulation: P2P Lending, Fintech, and the Argument for a Special Purpose Fintech Charter Approach," *U. Pa. L. Rev.* 168, no. 4 (2020): 1013–59, available at http://www.jstor.org/stable/45467516 (accessed May 10, 2024).

[21] *supra* note at 14, pg. 12.

[22] *supra* note at 5, pg. 4.

completed their first issue with help of the block chain technology as provided in the integrated platforms. As a last step in the operation, wherein there has been building of success of ADDX as signed the securing of the relevant licenses wherein the MoU was signed by ADDX. Hence, they entered into an agreement with Chongqing, then recognized financial regulator post acquiring of the license, keeping a goal of transaction value of US $1B within a time span of 2023. [23]

The key investors ADDX identified post the successful installation by way of Singapore Exchange (SGX) and Heliconia and legal partnerships for the purpose professional services as from Allen & Overy and Allen & Gledhill and PwC Singapore. Hence, ADDX stands as the first example of the product and their services such as engineering and tech functions wherein Singapore evolved as global finance centre.[24] Other innovative products in FinTech industry that made their entries into the market via regulatory sandbox include BondEvalue that democratised bond markets as veterans in 2016 ever since operation. Now with respect to BondValue's operation, the three step verification and operation involved co-creation of innovations wherein Sandbox express was made use of wherein an assistance was provided to co-develop BondBlox, secondly fast validation was received and thereby entry to the market was enabled, and in finality the growth rate of BondBlox was far above and beyond the pioneer ADDX in both the Singapore market and overseas.[25]

Background of Regulatory Sandbox in India

Fintech industry has seeped into the daily life in the society. Payments are carried out through payment Gateways and Payment Aggregators, digital lending has become the norm. Considering the boom in this industry, it necessitates the need for a regulatory sandbox system. In order to create a more conducive environment for these technologies, it is important to promote innovations and create opportunities for the same. The best way to go, as evidenced by the Singapore model is creating a Regulatory Sandbox. The concept of regulatory sandbox in India dates back to the Reserve Bank of India (RBI) that had set up the requirement to look into the granular aspects involving the financial technology as an industry in the country. Back in 2016, an inter regulatory working group was set up. This was undertaken with the aim to look into the present implications concerning FinTech in the country as a whole. The report as issued was provided for public opinion two years after the release and among the numerous recommendations taken, one among the key recommendations as provided from the public outset was that, in response to the dynamic nature that a regulatory sandbox can necessarily offer, included the need to create a well defined non-dubious framework for a regulatory sandbox such that there is appropriate duration in order to provide with appropriate guidelines with lowered risk, improved customer satisfaction and improved efficiency. [26]

Thereafter, a well structured proposal was put forth that specified on what could be the possible role of a regulatory sandbox in the country, if at all the same was in operation. The first hand usage of the empirical data is used by the users, by considering all the potential risks that are posed by the business models and units as caused by the incumbency of the financial service providers including banking institutions and the attendant risks, wherein all the involved stakeholders will come into a conclusion as to what is that needs to be done to improve the overall situation and what needs to be placed as to

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[23] Huang, Yiping, and Xun Wang. "Digital Connectivity in China and Asia: The Case of Mobile Payments." In *New Dimensions of Connectivity in the Asia-Pacific*, edited by Christopher Findlay and Somkiat Tangkitvanich, 1st ed., 203–24. ANU Press, 2021. Accessed June 5, 2024. http://www.jstor.org/stable/j.ctv23hcdsw.14.
[24] Kati Suominen et al., "What Should U.S. Blockchain Policy Be?" in *Harnessing Blockchain for American Business and Prosperity: 10 Use Cases, 10 Big Questions, 5 Solutions* (Center for Strategic and Int'l Studies (CSIS), 2018) 23–32, available at http://www.jstor.org/stable/resrep22491.7 (accessed May 10, 2024).
[25] Kati Suominen et al., "What Should U.S. Blockchain Policy Be?" in *Harnessing Blockchain for American Business and Prosperity: 10 Use Cases, 10 Big Questions, 5 Solutions* (Center for Strategic and Int'l Studies (CSIS), 2018) 23–32, available at http://www.jstor.org/stable/resrep22491.7 (accessed May 10, 2024).
[26] *supra* note at 14, pg. 12.

be integrated with the newest technological advancements as required and provided by the involved individuals based on their expenditure and viability. The business models and the services and products introduced by the FinTech companies or the concerned people who pitch in the ideas that are categorised as innovation can now decide as what modulates their line of operations with the help of the created regulatory sandbox. And in finality, based on what that is received as the opinions and feedback of the consumers, there could be references drawn by the aforementioned stakeholders.[27]

Now as the second set of advantages that are positively raised from the experiments or range of tests is that without spending much of an expenditure or a heavy roll out in the payments to be made the regulatory sandboxes will be able to evaluate the viability of the offered line of products. Hence, if the authorization of the products is received, this will help in the overall betterment and usage and receives the green flag for operation without being posed much of a difficulty. The introduction to the market hence, will be much more easier, that is something that will be taking place right after the running of regulatory sandbox and in case if concerns are raised by the stakeholders during the course of Regulatory Sandbox any required rectifications and modifications can be undertaken without much of a difficulty and even greater ease.

Thirdly, on the face of Regulatory Sandbox, is the financial inclusion. The regulatory sandbox provides the FinTech companies with the most appropriate option resolve the non-inclusion of certain financial products due to the posed difficulties out of risks. Hence there is a plethora of opportunities that can be explored from all of this such as, products of micro financing, remittance and digital payments, online banking and also savings and funding in a small scale level. Moreover, there is a well recognised and structured institutional environment that gets created without hesitation due to a system that is credible and evidence based and that the due tot he self run investigation technique, the dependence posed on the remaining stakeholders is relaxed and thereby pacified. In finality, considering the fact that as the innovations are being practically promoted and approved by the what that is termed as a Regulatory Sandbox, the product innovators are given their opportunity to bring in more creative innovations and line of products or business models to the market without the fear of creating major mistakes with respect to the quality of the line of products and their compatibility, since they undertake a pre-run before entering the market. [28]

Now, if the above positive impacts of the Regulatory Sandbox stand out as a market productivity, the next immediate question that comes to our mind is with regard to what are the negative impacts or risks or challenges posed[29] by the initiation of regulatory sandbox in the FinTech. There is a risk of time and flexibility by making use of a Regulatory Sandbox as the success of the business model is equal to the possibility of loss by testing the products. The Regulatory Sandbox process can probably take a cut on the overall flexibility and the time incurred in their working model. Both the Reserve Bank of India (RBI) or the regulatory sandbox need not necessarily provide the FinTech companies need not necessarily be provided with any of the specified waivers and therefore, the risks posed due to the cases-by-case testing via authorizations and thereby relaxations based judgements on time and discretion are also possible risks and limitations. [30]

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[27] Evangeline Ducas and Alex Wilner, "The Security and Financial Implications of Blockchain Technologies: Regulating Emerging Technologies in Canada," *Int'l J.* 72, no. 4 (2017): 538–62, available at https://www.jstor.org/stable/26414135 (accessed May 10, 2024).
[28] G. A. Walker, "Bigtech, Stabletech, and Libra Coin – New Dawn, New Challenges, New Solutions," *Int'l Lawyer* 53, no. 3 (2020): 303–82, available at https://www.jstor.org/stable/27009692 (accessed May 10, 2024).
[29] Robert Savoie and Philip (PJ) Hoffman, "The Evolving Regulatory Response to Innovation: Special Purpose National Bank Charters, Regulatory Sandboxes, and No-Action Letters," *Bus. Law.* 74, no. 2 (2019): 527–36, available at https://www.jstor.org/stable/27170988 (accessed May 10, 2024).
[30] Lawrence G. Baxter, "Adaptive Financial Regulation and Regtech: A Concept Article on Realistic Protection for Victims of Bank Failures," *Duke L.J.* 66, no. 3 (2016): 567–604, available at http://www.jstor.org/stable/44155324 (accessed May 10, 2024).

Now, after the period of sandbox testing, even if a business model passes with flying colors wilfully moving forward towards usage or line of product distribution in the market, there is a requirement of receipt of regulatory approvals from the concerned government departments or authorities for the active usage and application of the said products in the market without compromising, for the purpose for the purpose of wider geographical outreach and usage. There are potential chances of legal issues and challenges that could be faced by the FinTech companies post regulatory sandbox out of the impacts and losses of rejection or from the customers who might not have received the level of outcome that was expected out of the products or the line of services that passed the test or experiments as from the competitors outside the regulatory sandbox. [31]

This potential legal battles can be avoided to a greater extent, of the regulatory sandbox is of such transparent and effective nature wherein all the involved parties get efficient access to the information about the working of such a regulatory sandbox.[32] There is a clarity right at the upfront with regard to what that needs to be done with respect to the products or the services or the technology that has been newly incorporated by the stakeholders as a matter of innovation. There has to be severe importance that has to be provided to both the customers and innovators with respect to the identified risks of management and operation post the clearance of the regulatory sandbox. [33]

Eligibility and the line of products in usage

The identification of the line of products that will be benefitting out of a regulatory sandbox in reality are FinTech companies as discussed above. These are also such that in India, they have to meet the eligibility criteria that is required by start ups and the requirements under the Companies Act, 2013, in order to receive the benefits that are offered by the Indian Government. The conditions to which the companies that are willing to run a regulatory sandbox, that is by the targeted applicants are, encouragement of innovations due to ease of operation and lack of regulatory operations secondly the fact that up gaming of the regulatory restrictions over the scientific innovation need to be eased and relaxed and finally the proposed innovation, is helpful to the consumers and the business by way of successful delivery of the finished products or the line of services due to the relaxations enabled by the concerned regulatory authorities as a part of the regulatory sandbox.

Now the design aspect of the regulatory functioning is the next and immediate concern of the Reserve Bank. The regulatory sandbox as a part of their operation during the stipulated period of time, may run cohorts that are technically encrypted sandbox processing which are based on themes.[34]

Conclusion and Suggestions

Singapore's financial and progressive mind-set definitely stands out from several other nations wherein the mere purpose of operation was such that this approach being open minded and flexible in nature lays down latest updates in the existing tools in the market or new tools that freshly introduced helping the customers in better performance and improved eco system wherein the foundation has been laid on this behalf. Ever since 2016, Singapore has been the hub for numerous FinTech products and services that could enter the market because of the effective mechanisms as approached and thereby to thrive in the utmost useful outcome of benefits as expected. The innovations have definitely played a vital role in the rise of the total number of companies to 1400 in the country and thereby seeing a

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[31] Rainer Kulms, "Blockchains: Private Lawmatters," *Singapore J. Legal Stud.* (2020) 63–89, available at https://www.jstor.org/stable/27032601 (accessed May 10, 2024).
[32] *supra* note at 27, pg. 17.
[33] Scopsi, Martina. *The Expansion of Big Data Companies in the Financial Services Industry, and EU Regulation.* Istituto Affari Internazionali (IAI), 2019. Accessed June 5, 2024. http://www.jstor.org/stable/resrep19656.
[34] Atje, Raymond, et al. "Framing the Analysis: An Overview of Recent Financial Developments in Indonesia." In *Disruptive Technology in Indonesia's Banking Sector*, 8–17. Centre for Strategic and International Studies, 2020. Accessed June 5, 2024. http://www.jstor.org/stable/resrep26664.8.

multiplication of the investments in and by FinTech corporations to $5.3 Billion.[35] Therefore, in conclusion, hubs like that of Singaporean models help in bringing about the best and most creative output so as to open the fora to global innovators as well. Comparing the scenario in Singapore with that of India, the understanding is by the line that, once such a regulatory mechanism is enabled, India will mostly witness the quintupling of the number of FinTech entities and the investments, both internally and overseas. The fact that there has been specific duration of these regulatory sandboxes, for instance, 10-12 weeks cap over the time line through which such line of experiments can take place making sure that everything is under check and hence the attitude of the nation is make use of it the most, and in manner to uplift their businesses in an effective manner.[36]

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[36] Atje, Raymond, et al. "Framing the Analysis: An Overview of Recent Financial Developments in Indonesia." In Disruptive Technology in Indonesia's Banking Sector, 8–17. Centre for Strategic and International Studies, 2020. Accessed June 5, 2024. http://www.jstor.org/stable/resrep26664.8.

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