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Addressing FinTech Regulatory Gap Through Regulatory Co-Opetition Theory: A Meta-Analysis Study

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Abstract:- Studies that have provided a comprehensive review of financial technology (fintech) regulation are minuscule. Aiming to fill this gap in the literature, this study builds up a strong theory as a foundation for intervening in fintech, both as a financial market disruptive phenomenon and a regulatory challenge. This meta-analysis study investigated select countries' current fintech regulatory strategies, establishing two major regulatory patterns: regulatory sandboxes/ innovation hubs on one hand and piecemeal approaches for those with no new fintech regulation, relying on existing traditional bank regulations on the other hand. Post analysis result shows the existing regulations are increasingly inadequate in achieving the expected goal of properly regulating a disruptive innovation. As a result, this study takes a look at technology-driven collaborative regulation, in the context of the theory of regulatory co-opetition as a possible approach to mitigating the fintech regulatory gap; thereby, opening further debates among the academia, regulators, industry audience and policymakers to significantly understand collaborative regulation as ideal for fintech regulation.

***Keywords*:-** *Collaborative Regulation, Co-Opetition, Cross-Border Regulation, Fintech Regulation, Regtech, Sandbox.*

I. INTRODUCTION

The current disruption in the financial ecosystem as a result of financial technological (Fintech, digital finance or internet finance) firms' entrance into the provision of financial services, transforming the financial industry, institutions, processes and products in the process, dramatically changing the way banking business is conducted remains unprecedented (Chorzempa & Huang 2022; Das, Verburg, Verbreck & Bonebakker, 2018). This market and value network disruption for efficient resource allocation and productive output by new channels are marked trend (Chiu, 2016), as the industry continue to witness massive product innovation, exceptional service delivery and seamless lending and payment system.

Along with this growth in the financial industry, ranging from cryptocurrency through P2P lending to robo-advisor (Ofir & Sadeh 2021), however, is an increasing concern over the threat the new entrants portend against banks and the entire financial ecosystem, especially competing in the core banking business of credit provision at the personal and household level. Pierrakis & Colins, (2013) concern is whether the emergence of fintech could trigger privacy, regulatory, and law enforcement challenges. Hill (2018) is weighing the chances of fintech activating systemic risk with multiple contagion effect that serve as a catalyst for wider losses. Pollman & Barry, (2017) argues that fintech start-ups with large clients' base are bound to draw regulatory scrutiny, particularly when they do not clearly fall within the existing financial regulatory space. This seeming ambiguous relationship between fintech and banks raises regulatory concerns looking at how fintechs as opposed to banks shape the regulatory level playing field (Anagnostopoulos, 2018), revealing that, contrary to our collective ability to grasp how financial institution should be regulated, fintech regulation understanding remains significantly limited.

Regulatory sandbox merged with innovative hub is considered the major fintech regulation deployed in United Kingdom (UK), Australia, Singapore (Bromberg, Godwin, & Ramsay 2018; Lim & Low 2019). It controls the testing of innovative financial products and services, allowing a safe space for fintech's and financial firms to offer real products to actual customers, with applicable regulation relaxed significantly. Its uniqueness falls on its ability to support consumer-benefitting financial innovation, facilitating financial inclusion, improving the efficiency and competitiveness of domestic financial institutions and advancing regulators' understanding of the emerging innovative technologies (Allen 2019a). Equally, the COVID-19 pandemic played a catalytic role in influencing many other countries without alternative fintech regulation to adopt sandbox due to rising risks related to fintech (cybersecurity 82%, operational risks 71%, consumer protection 47%) during the pandemic (CCAF, WEF, and World Bank (2020).

Other options receiving growing acceptance are thus: First, Regtech, is becoming a fashionable term denoting to the automation and streamlining of regulatory process, including data collection, and compliance monitoring (Enrique, 2018; Jung, 2019). Its proponents argues that digitising and automating regulatory and supervisory functions arguably improves the pace of financial transaction and reduce performance cost; even though, it irreversibly undermines regulator's overall ability to exercise meaningful oversight of the financial activities. Second, product approval regime, "a system of mandatory

pre-approval of financial products. It is considered to reduce and control the overall level of complexity and opacity of financial markets by inserting regulatory controls at the point of product development." (Omarova 2020:119). Third, countries that are yet to embrace any regime, learning-by-going (Kheir 2018) constitute many of their strategic regulatory package due to their cautious stand, as they try not to over-expose the already fragile financial system to untested risks. This call for precaution renders credence to the fact that ill-conceived regulations can ultimately decrease economic stability and inhibits growth (Lumpkin 2010); since any policy short of supporting fintech firms would see an increase in cases of circumventing regulations deemed restrictive to financial activities (Calomiris 2009).

With no universal acceptance for ideal fintech regulation, and many more myriad complex tech-driven changes in the financial system structure and dynamics, a dramatic increase in the scale and scope of financial activities, faster financial transactions and most critical the shift of financial activity into borderless cyberspace, beyond a territorial border, the core function of financial regulation and supervision in many countries have been completely reshaped and still reshaping. There is an urgent need for an immediate regulatory response, to curtail the excesses of the new fintech 3.0 players entering the industry without a financial compliance culture, and pre-existing interaction with financial regulators and supervisors (Arner, 2016). It is against this background that this study undertakes a meta-analysis of various regulatory positions for fintech innovation in countries with significant fintech presence, notably Australia, the UK, China, Singapore, India; and others with average fintech experiences like the US, Canada, Malaysia, Columbia and Brazil to establish the current standpoint of fintech regulations. From this analysis, our findings offer evidence of regulatory lacuna in fintech regulations and drawbacks in the existing sandbox, triggering the declining influence as most effective. This outcome opened an opportunity for new thinking, which this work through the theory of regulatory co-opetition construct highlights collaborative regulation strength, chiefly to bridge the gaps and enhance the regulatory harmony and experiences in countries with or without fintech regulation. This proposed regulation is billed to address border skirmishes or competing claims of jurisdictions.

In doing so, we respond to recent calls for a rethinking of the financial regulation objectives, structure and methods as regulators need to move away from the traditional regulatory approach to incorporating a more open-ended authority, flexible and effective tools, which enable faster response to fluid and diffused threats of systemic stability (Omarova 2020). Similarly, our work contributes to the growing societal conversation on remaking financial regulation that will accommodate fintech disruption, with emphasis on the types of regulatory action considered more appropriate and effective to address fintech-induced systemic changes. As more literature upholds the need for new regulation, the extant study confirms previous calls for multi-sectoral collaborative rule instead of sustaining fragmented regulation that makes fintech services cumbersome (Meifang, He, Zianrong & Xiabo, 2018); and cross-border regulation to accommodate fintech with business activities in multi-jurisdictions (Ahmed, 2019; Diwanji, 2019; Bromberg, Godwin & Ramsay, 2018; Deloitte, 2017).

The rest of this article is divided into 4 sections: the study methodology in 2, and analyses of applicable fintech regulation in select jurisdictions with its various drawbacks in 3. This forms the foundation for section 4, where the study deployed regulatory co-opetition theory to enhance the meaningfulness of collaborative regulation in addressing the growing difficulty of controlling the regulatory perimeter in the fintech era and the increasing complexity and opacity of fintech. Section 5 discusses the obstacles of collaborative regulation, while section 6 concludes the paper.

II. METHODOLOGY

This is a meta-analyse study that tries to speculate on the potential gains of collaborative regulation in addressing fintech regulatory challenge, to enhance resilience. The speculation draws context from Kuhn (1964) as the use of thought experiments to replace the foundation of a declining paradigm or a non-existing one until it leads to a new paradigm. This could be achieved through Lave and March (1993:19-20) summary: "step 1, observe some facts; step 2, look at facts as though they were the end result of some unknown model. Then speculate about processes that might have produced such result; step 3, then deduce other results (implication/consequences/predictions)) from the model; and finally step 4, ask yourself whether these other implications are true and produce new models if necessary". As we are all aware, literature on fintech regulation is little, with limited information to solve this difficult theoretical problem. To advance such scientific speculation on fintech regulation, Swedberg (2021) argues that it must be built on scientific data, which is in sync with Lave and March's observation; hence, the study relied on data obtained from an extensive literature review. While the intention of the author is not to develop or provide an operational blueprint for proposed collaborative regulation since it would likely raise legal, sovereignty, economic and political questions not covered in this study; the whole idea of this study is to push the discussion ahead and inspire future study in this direction that will eventually lead to important advances in collaborative regulation for fintech.

III. SELECT COUNTRIES FINTECH REGULATORY STRATEGIES

Some countries have set up specific legislation for fintech, some have taken a piecemeal approach to policy, while others have not made a significant move to distinguish between traditional banks and fintech firms, and so far, rely mostly on existing traditional banking regulations for fintech firms (Rostoy 2019; Havrylchyk, 2018). Among those that have set up a specific regulation based on the extant study review are Australia, Singapore, UK and Malaysia. In Australia, Australian Security and Investment Commission (ASIC) is responsible for assisting fintech firms to select the

right licenses and regulations applicable to their peculiarities (Davis, Maddock & Foo, 2017). ASIC ensure consumers' and investors' protection is at the forefront of the Australian fintech landscape, which the recent passing of the Consumer Data Right (CDR) Bill by the Australian Parliament cemented. Prior to this, ASIC introduced a regulatory sandbox designed to assist fintech test run products and services within 24 months without necessarily obtaining an Australian financial service or credit license (Treasury Laws Amendment, 2019).

Similarly, Singapore adopted a regulatory sandbox for fintech firms as a means to control the environment for new financial products experimentation without exposing them to risk-averse, which could lead to loss of fintech innovation. According to the Monetary Authority of Singapore (MAS) fintech regulator, the sandbox stages involve the application phase, which determines if established criteria regarding innovation is met before a license is issued. The evaluation phase allows the supervision department to make an input as it relates to determining the optimal safeguards to mitigate risk and limit the impact in the case of failure. Beside sandbox, MAS adopts a protection regulatory approach for P2P lending, like crowdfunding and payments services. Under this approach, individual investors are excluded from participating in lending services. Only corporations have the accessibility of securitised-based crowdfunding as an alternative source of funding (Lee, 2019). In equity crowdfunding, for instance, offers can be made only to accredited professional investors and institutional investors since they are likely to have more experience and resources investing in start-up companies and small-and-medium-sized enterprises (MAS, 2015 as cited by Lee, 2019).

Singapore's approach to targeting experienced and institutional investors is because of their less likelihood of causing systemic risk in the financial system due to their capital sizes and dominant role in the financial market, compared to individual investors, especially as it pertains potential weight of losses. Small individual investor losses are smaller compared to higher risk exposure of professional investors that invested in crowdfunding, with shareholders' funds. The regulatory process was further restructured with the introduction of a new payment service act 2019 (No. 2 of 2019) ('PSA') which streamlined the legislative regime of payment services by merging the payment system oversight act (PSOA) and the money-changing and remittance business act (MCRBA) to become one piece of legislation. This new legislation mandates payment service providers to hold a license reflecting their service area, i.e., domestic money transfer services, cross-border money transfer services, merchant acquisition services, electronic money (e-money) services, digital tokens and money changing services.

In the UK, the UK Financial Conduct Authority (FCA) initiated a consultation to understand the regulatory hurdles faced by fintech 3.0 companies and afterwards, created an innovation hub to support start-ups from the nascent stage (Wheatley 2014). This provision gave fintech firms a conducive environment by providing political and policy support, creating a favourable tax and investment regime for start-ups and also promoting the UK fintech industry globally through its network of embassies and trade delegations. Although the UK is considered one of the few countries that took the bold step in initiating the 'Innovative Hub', 'Advice Unit' and the 'Regulatory Sandbox', the FCA is not relenting as they launched 2019 the Global Financial Innovation Network (GFIN) – a safe space for businesses to test innovative financial products and services. This makes fintech regulation in the UK not limited to the adoption of a regulatory sandbox but includes innovative hubs and accelerators, and currently, the only country adopting both models. Firms that did not pass through the innovation hub but are desirous to engage in fintech-related businesses or activities in the UK are expected to obtain authorisation from either the FCA or the PRA, including a range of additional primary legislation as well as a detailed rulebook published by FCA and the PRA (Global Legal Insight [GLI] Report, 2019). This is because the UK regulators believe fintech and traditional financial institutions are in the same business and share the same risk and therefore same rules should apply (Davis, Maddock & Foo, 2017).

China's approach to regulating fintech follows a twin peak approach such that the People's Bank of China (PBOC) in conjunction with the China Banking and Insurance Regulatory Commission (CBIRC), and the China Securities Regulatory Commission (CSRC) with five other authorities issued Guiding Opinions on the promotion of rigorous development of internet finance. The new guiding opinions allocate different sectors to different government agencies. For instance, Internet Finance — Internet payment, online lending including P2P lending, micro-loans, crowdfunding and online wealth management funds are currently regulated by different government departments (Shaydullina, 2017). The contents of this opinion include the principle guiding fintech firms depending on their specific types of activities, thereby offering a flexible approach (see Zhou, Arner & Buckley, 2018). This has provided the impetus for various government agencies to contribute toward developing several aspects of fintech regulations through direct regulatory supervision. For instance, online payment services are regulated by PBOC; peer-2-peer lending falls under the purview of CBIRC; while equity crowdfunding and funding sales online are regulated by CSRC (Zhou, Arner & Buckley, 2018).

In India, the regulatory landscape governing fintech is largely fragmented, with no single set of regulations or guidelines set up to specifically govern fintech products. The government are scaling up gradually with the plan to introduce fintech innovations in India for p2p lending platforms, arising from the outcomes of the inter-regulatory working group set up by the Reserve Bank of India (RBI) in 2016 to study the entire gamut of regulatory issues relating to fintech innovation and digital banking system in its jurisdiction as stated earlier (GLI Report, 2019). In addition to RBI, the Security and Exchange Board of India (SEBI), Ministry of Electronics and Information Technology, Insurance Regulatory and Development Authority of India

(IRDAI) and the ministry of corporate affairs deploy their oversight depending on the nature of the activity sought to be regulated.

Similar to India is Colombia, where local and international fintech firms have continued to grow without a clear regulatory framework, with rising cases of contradiction with traditional financial regulations, and conflicts between traditional lending and equity crowdfunding (Mendez & Vasquez 2017). Likewise, Brazil is not impressive, even though there is a proposed regulation, modelled after the UK regulatory sandbox, where rules become stringent as fintech firms grow, it is currently without fintech regulation (Santos & Vargas, 2017).

Malaysia is different as they have a regulatory sandbox that is live and accepting applications for trial (Kunhibava & Muneeza 2020). Bank Negara Malaysia (BNM) and Securities Commission Malaysia (SC) regulate Malaysia's fintech as both on different occasions issued regulations to cater for its proliferation. The same cannot be said of Canada, with zero national regulatory sandboxes or a single oversight body for fintech firms. The non-bank financial institutions providing fintech services are subject to federal and provincial laws (Competition Bureau, 2017, p.6), while the office of the superintendent of financial institutions (OSFI) regulates traditional banks engaging in fintech services. The US as Clements (2019) reports is without a national sandbox regulatory process or single regulation for fintech. Rather, what determines the regulation applicable to fintech firms depends on the services provided, the nature of the firm and the jurisdiction. In most cases, they are subject to a complex, fragmented and potentially conflicting array of federal, state and self-regulatory rules and requirements.

Other countries with no clear-cut fintech regulation rely mostly on the piecemeal approach the most obvious observation from this section is that regulatory sandboxes have proven to be a very popular regulatory approach for countries. This viewpoint is well expressed in figure I, which shows countries that have adopted facilitative approaches in the form of 'regulatory Sandboxes' for fintech and accepting applications or conducting trials; and those on the verge of doing so after a regulatory body pronouncement. The question of whether they are the silver bullet that serves as an ideal fintech regulatory model has been subjected to considerable doubt in recent literature, even though over 50 jurisdictions have now established or announced the adoption of 'financial regulatory sandboxes' (Buckley et al., 2019).

Allen, (2019b) points out that it is perhaps too early to issue a strong conclusion that the merits of sandbox supplant its demerits; however, it is becoming apparent from current adopters that strong weaknesses abound. First, the model thrives in countries with good regulatory expertise and struggles in jurisdictions with weak proficiency in financial regulation, because a sandbox is not a substitute for robust regulation for customer protection and financial stability (Zetzsche et al., 2017). Another major drawback is the degree of success as Buckley, et al. (2019) posit it does not guarantee success as cases of firms previously in a sandbox in Australia are now either solvent or in liquidation. Similarly, "controlled testing of individual products doesn't yield reliable insight about the systemic impact of that product outside the sandbox" and "there is no clear-cut approach to sustain the monitoring post-testing" argued Omarova (2020:119).

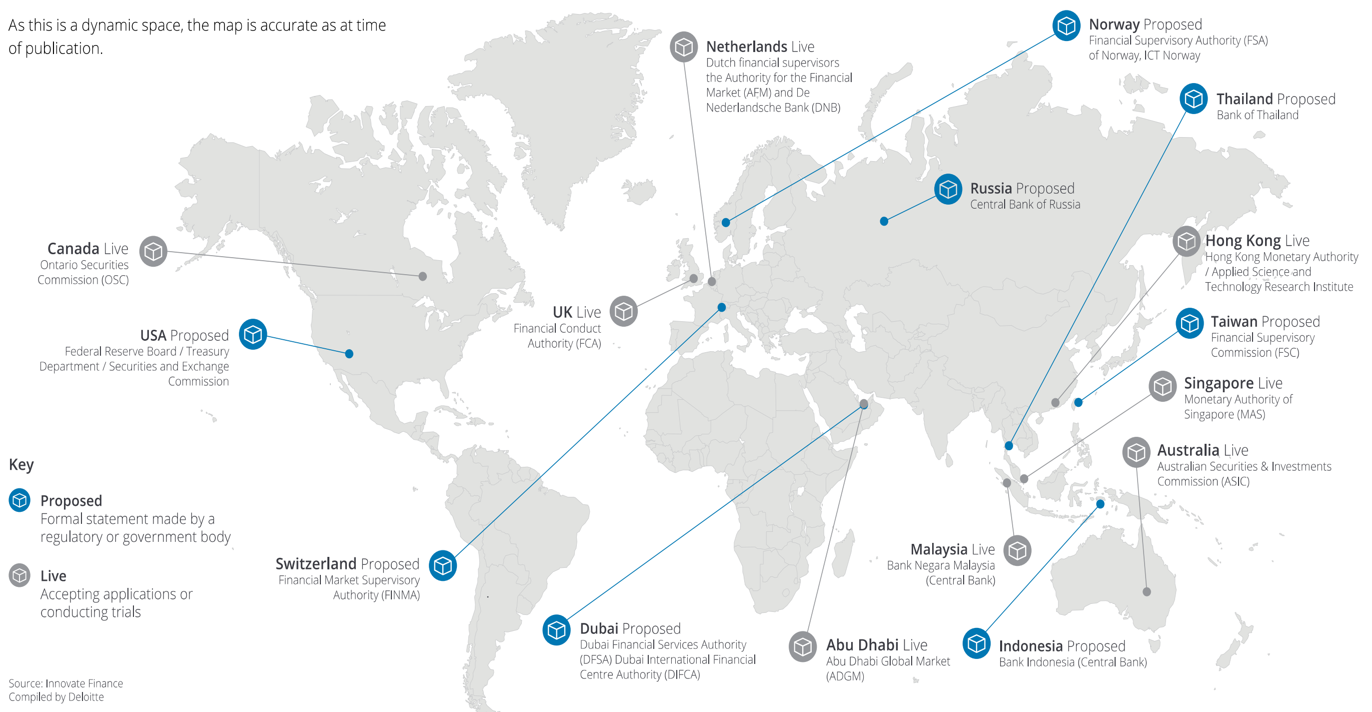

Fig 1 Regulatory Sandbox
Source Deloitte, (2017)

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More protest against sandbox is from Lim & Low (2019), arguing that difficulties arise during implementation, because of its multi-tiered regimes, where each class of participants enjoy a different regulatory regime, thereby promoting discriminatory regulation for firms providing similar services in the same market. Lim & Low speculated that established companies desirous of implementing fintech innovations are subject to full applicable regulations, while fintech firms selected by regulators to participate in sandboxes enjoy a lower level of regulatory compliance. Also, there are cases of pre-judging innovative value, which opens room for regulators with limited expertise on all products tested, to make decisions on products they have limited capacity to decide its success afterwards. Likewise, there is no concrete guarantee that what is successful on a small scale in a controlled environment may succeed in a large-scale setting with other competitors jostling for the same consumers, thereby questioning scalability. Lim & Low's last criticism is the – race to the bottom – factor, which questions the credibility of the sandbox, especially for regulators with limited fintech products experience. It does not take into consideration the concern of regulators unable to attract high-quality innovative fintech firms. Such lack of interest in a particular sandbox may trigger lowering the entry criteria, which in long run may lead to a drop in the degree of consumer protection and financial stability, snowballing into the erosion of confidence in such jurisdiction's regulatory sandbox, on grounds of risky or weak regulation.

Buckley, et al., (2019) identified cases of sectorial restrictions as some sandboxes restrict to only authorised financial institutions working with or without fintech; while others exclude Insurtech (insurance technology), focusing purely on consumer lending and money transfer. In Canada for instance, Sandbox is applicable for securities only (Canadian Securities Administrators 2018).

Jurisdictional restrictions are also a challenge as fintech firms in one jurisdiction are required again to register in another jurisdiction they desire to operate in and then comply with varying standards for fundamental concerns like privacy, security, and financial consumer protection.

Cases of internal fragmentation of fintech regulation in one jurisdiction between federal and state laws thrive in the US. This was the major reason Arizona is the only state in the US with a regulatory sandbox (Finextra 2018), due to overlapping jurisdiction in the US. Unlike in the UK, a US national sandbox is constitutionally uncertain (Reiners 2018). Hudson (1998) cautioned that under the provision of regulation in absence of central coordination could attract fintech firms with less quality to operate, resulting in a hotbed of manipulative financial services (Hudson, 1998).

This jurisdiction-focused fintech regulation is not only in regulatory sandboxes but other fintech regulations as further exemplified by the new proposed crowdfunding regulation by the security and exchange commission (SEC) in Nigeria, which requires a crowdfunding firm registered in another jurisdiction but targeting Nigerian investors to register and meet all registration requirements stipulated in section 5, (a), i-xv (SEC, 2020). Indeed, this fractured nature of fintech regulation is complex, stifling innovation and creating regulatory uncertainty since fintechs must navigate various regulations in different jurisdictions, especially for those seeking to operate in multiple jurisdictions (Clozel, 2016). Such jurisdictional restrictions on fintech entrench regulatory borders, and are counterproductive because they reduce economies of scale and the value of innovation.

Overall, our key critique is twofold: first, we argue that jurisdiction-based regulation created by simplistic regulation has failed in fintech with dual identity because they offer a limited mechanism for exerting real regulatory pressure and that some form of collaboration, vertical or horizontal, between and among jurisdictions is required to address fintech regulatory gap. Consequently, a pluralistic fintech regulation is required to meet the dynamism and connectivity of today's markets and the nature of fintech firms, especially their operations, which require an extraterritorial application of the law. The absence of such expansive regulation makes regulation burdensome in the sense that fintech firms in Australia after going through the process of sandbox would go through the same process in the UK or Singapore because Australia's variant of the sandbox has no commonalities with the UK or Singapore's variant and vice versa. It was against this backdrop that calls for a breakaway from regulatory sandboxes were made (Clozel, 2016) and the US Treasury Department (2018) sought a new regulation that could reduce fragmentation through 'Unified oversight structures,' greater 'regulatory cooperation (Allen, 2019b). And Omarova (2020) calls for new thinking for fintech regulation.

IV. COLLABORATIVE REGULATION: AN ALTERNATIVE MODEL

Collaborative regulation is a form of cross-jurisdictional regulatory coordination aimed at advancing expanded regulatory scrutiny (CCAF 2022). It is a form of regulatory ecosystem that manifests itself in several ways including integrated data gathering, exchange or protection verification standards, which opens up a cross-jurisdiction operation like payments and remittances, currently hindered as a result of each jurisdiction having individual requirements and policies. Accordingly, the collaboration idea this paper envisages could also occur in the form of a shared mechanism for arbitrage or other issue spotting, maintaining a strong compliance programme to manage risk, mutual recognition procedures, information and policy experience, harmonised standards of existing complexities, regulatory duplications, and inconsistencies in order to facilitate innovation and efficiency and to generate cost savings. Furthermore, we position it as a more practical ways of achieving optimal regulation in fintech across the globe through inter-governmental [e.g., across the US and the UK] and extra-governmental [e.g. between governmental and non-governmental actors] (Yami, Castaldo, Dagnino & le Roy 2010), instead of the prevailing jurisdiction-based, nationally fragmented, and contradictory regulations surging

in many fintech jurisdictions. This new regulation emphasises is on integration through regulation, providing some degree of regulatory coordination in regional, national and sub-national governance on how best to approach the intersection of data, finance and regulation.

Many benefits of collaborative regulation include the prevention of regulatory loopholes (Meifang, et al., (2018), the antidote to keeping abreast of new developments in fintech and associated regulatory challenges and approaches (Matthew (2017), assist fintech firms, optimised by mobility to seek cross-border market expansion seamlessly and reduce the degree fintech services are fragmented based on national borders (Ahmed (2019). Similarly, Matthews & Rusinko, (2002) contend that jurisdictions with limited capacity to develop a watertight regulation for fintech would gain from collaborative regulation without exploiting their regulatory role, either trying to control the firms with over-regulation or controlling through under-regulation.

To enhance the meaningfulness of collaborative regulation for fintech, the paper considered the argument from a regulatory co-opetition theoretical perspective, as the explanatory theory to further advance our argument. Co-opetition is a neologism that capitalises on the benefits of collaboration and competition between two or more actors (Brandbenburger & Nalebuff, 1996). Many studies discuss co-opetition as actors involved in the co-opetitive relationship (focal competing actors) with the underlying assumption that co-opetition is somehow planned albeit deliberately by the co-opeting actors due to the risk involved in co-operating with a competitor (Pellegrin-Boucher, Le Roy & Gurău, 2013). In contrast, recent development shows that in many real-world contexts, political, social, economic and technological (external factors) and policymakers and regulators (stakeholders) set the scene for how economic actors engage in co-opetitive interactions during the formation and the development stages of the strategy lifecycle (Mariani 2018). More specifically, a particular subset of external policymakers and regulatory agencies in an industry, can introduce new rules or modify existing ones, with the sole aim to collaborate to advance regulation to address financial problems. This reflects the context in which regulatory co-opetition theory by Esty & Geraldin (2000) is used in this study since it has the potential to drive harmonization of regulations among inter-governmental (horizontally and vertically allayed), intra-governmental (between departments and officials within government), and extra-governmental (driven by the simultaneous co-operative and competitive relations between government and non-governmental actors) in a fintech ecosystem characterised by higher risk and uncertainties as a result of various new products disrupting the financial industry.

Regulatory co-opetition theory recognises that the best way to address fintech regulatory issues is through harnessing of inter-governmental, intra-governmental, and extra-governmental competitive forces to facilitate cooperation among regulators (Steinwinder, 2007). According to Steinwinder (2007), collaboration trumps locational rights if policing inefficiency remains the goal. This is because a non-collaborative regulatory regime undermines market sanctity, hardly enhances market welfare or generates sufficient competitive pressure on territorial regulators. Furthermore, since global realities must be incorporated into efficient regulatory proposals, the framework of the new financial governance of fintech must reflect and address inherent imperfections. This means that the baseline consideration in new regulation should reflect the spread of fintech firms globally, the protection of both investors and clients, and the integration of best practices alternatives. As such, a rudimentary portable reciprocity agreement between the dominant first movers in fintech and others could set the template and outline an opt-in option, with provision to allow self-selection and migration for global application. Thus, since UK FCA is the dominant country for fintech regulation, it can be established as the de facto regulator, while allowing country disparities that would not affect standardised compliance issues or transaction costs for cross-border issues.

An example of collaborative regulation is the European union (EU) collaborative approach to regulatory sandbox. According to Ring and Rouf (2020), discussion is ongoing for the entire EU-wide approach that allows markets to develop, that allows innovation to flourish, that allows those companies that innovate to go across borders in a single market which being consistent with our framework. To give more credence to this discussion, European Commission's Consultation Document reveals that respondents from both the industry and government sides expressed the need for such collaborative measure.Another example of collaborative regulation emulating regulatory co-opetition theory in financial ecosystem occurred during the advent of credit cards, even though its embrace in fintech remains minimal. To buttress this using the smart card industry, where smart cards applications continue to be a major pre-occupation of the smart card industry. In M'Chigui (2005) study, it was observed that "international applications require world-wide collaboration on standard so that cards and terminals from various providers will work properly together first" (:470). In line with this, a dominant first mover in the credit card industry, Mastercard international in the year 2000 created a consortium of leading card and terminal vendors, solution integrators, and security providers to devise interoperable solutions for smart cards carrying digital IDs. The aim is to collaborate with other leaders in the industry to deploy on a world-wide basis, digital ID-based applications that will authenticate cardholders in mobile and electronic commerce transactions. According to Master card international, limiting this interoperable solution to industry leaders in one jurisdiction would not achieve expected results; hence 11 industry leaders world-wide collaborates in the form of aggregation of regulatory standard responses to enable progressive supervision.

It is worthy to note that collaborative regulation uniqueness lies on the provision of integrated solutions across nations to mitigate and control risks, monitor potential market abuse practices and improve the financial market integrity. For instance, credit score is a means of

providing credit evaluation for both individuals and non-entities, which determines the financial trustworthiness of the individual or nonindividual entity. This is very critical in fintech due to the gradual substitution of traditional bank lending with lending on digital platforms (Bofinger, 2018). As observed by Dawbrowski, (2017) and Hill (2018), this lending pattern grew beyond the boundaries of financial institutions as a result of the growth of fintech and threatened traditional banking business of lending in six areas: consumer lending, small business lending, leveraged lending (loans to noninvestment grade businesses), and student lending. While credit score is increasingly used in a number of countries and context, as the key determinant of one's credit worth in a credit system, as applicable in the US and the UK where such credit scores determine whether an individual's mortgage, credit card, home and automobile loan requests will be approved, or declined due to low credit score. In many other countries, especially in sub-Saharan Africa, this credit score model remains non-existing, as many relies on brick-and-mortar style, and other unscientific consumer behaviours to determine credit trustworthiness of customers. This undermines the market integrity and exposes fintech firms to risk, especially where loans are extended to an individual with poor credit score in another jurisdiction. However, with collaborative regulation, where credit score data from Experian, Equifax, Trans Union among others are harmonised and integrated, enabling other players in the industry globally to use a single platform to check credit score, an individual heavily indebted in the UK and defaulted in payment, would not obtain credit from a different jurisdiction because the poor credit score in the UK or US would reflect on the harmonised global credit check ecosystem. This would assist fintech firms in sub-Saharan Africa and other regions with sub-optimal credit rating platform make informed credit decision.

The deployment of collaborative regulation could well make use of regulatory technology (RegTech) (see Arner, Barberis & Buckley 2017; Nicholls, 2020; Anagnostopoulos, 2018; Becker, Merz and Buchkremer 2020) and supervisory technology (SupTech) (see Jung, 2019) as this enables adopting digitisation and automation of regulatory process to optimise compliance management thereby addressing dissimilar, fragmented regulation among markets, and allowing the monitoring of novel forms of market regulation and supervision processes previously impossible to monitor.

Insofar, the growing attribution of collaborative regulation is remarkable and led FCA to kickstart similar collaboration with 11 financial regulators to share experience of innovation in respective markets, including emerging technologies and business models, provide a forum for joint policy work and discussions, and to provide firms with an environment in which to trial cross-border solutions (Jung 2019). Added to this is the Global Financial Innovation Network (GFIN) as captured in figure II, emerged as an international effort for regulatory collaboration, where network of regulators collaborates and share experiences in three areas: promote accessible regulatory contact information for firms, provide a forum for joint RegTech work and collaborative knowledge sharing/lessons learned; and to provide firms with an environment in which to try cross-border regulatory solutions (GFIN 2019).

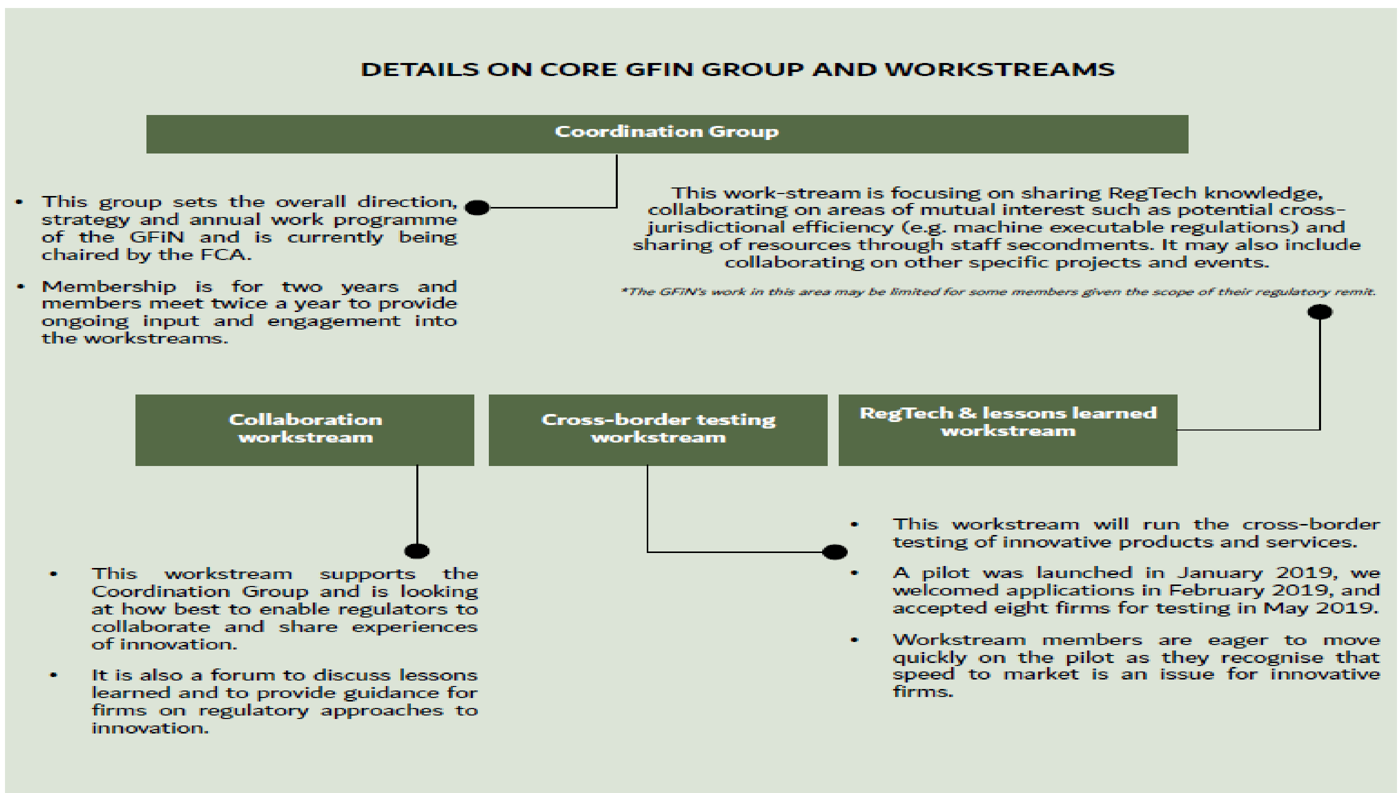

Fig 2 Details on Core GFIN Group and Workstreams
Source: GFIN One Year Report (2019)

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There is also a regulatory collaboration among those adopting sandbox regulation as can be seen in the cases of UK and Singapore, Australia, Japan, and other countries displayed in figure III, currently enjoying one form of regulatory collaboration and the other (Diwanji, 2019). While commitment to regulatory sandboxes collaboration by UK, Netherlands, Russia, Switzerland and Norway has reached a significant level, only UK, France and Switzerland signed fintech cooperation agreement with regulators outside the EU (Deloitte, 2017). For example, UK and Australia signed fintech regulatory collaboration on referral mechanism, where one regulator utilises it to refer a fintech firm established in its own jurisdiction to the other. Parties to the agreement are to enrich their understanding of fintech complexities and emerging issues in the regulation of innovative businesses in order to stay abreast of regulatory issues and developments in home country and overseas. Similar collaboration is being considered in the US after agreement between Commodities Futures Trading Commission (CFTC) and FCA was signed (Berry, 2018). Also in Canada, there exist fintech regulatory collaboration between Australia, France, Abu Dhabi, the UK and several Canadian securities regulators (Stikeman Elliot LLP, 2018). Even World Bank consultative forum and 11 global regulators in 2018 agreed to explore a network that would serve as international regulatory sandbox for multi-jurisdictional real-time product testing (Clements, 2019).

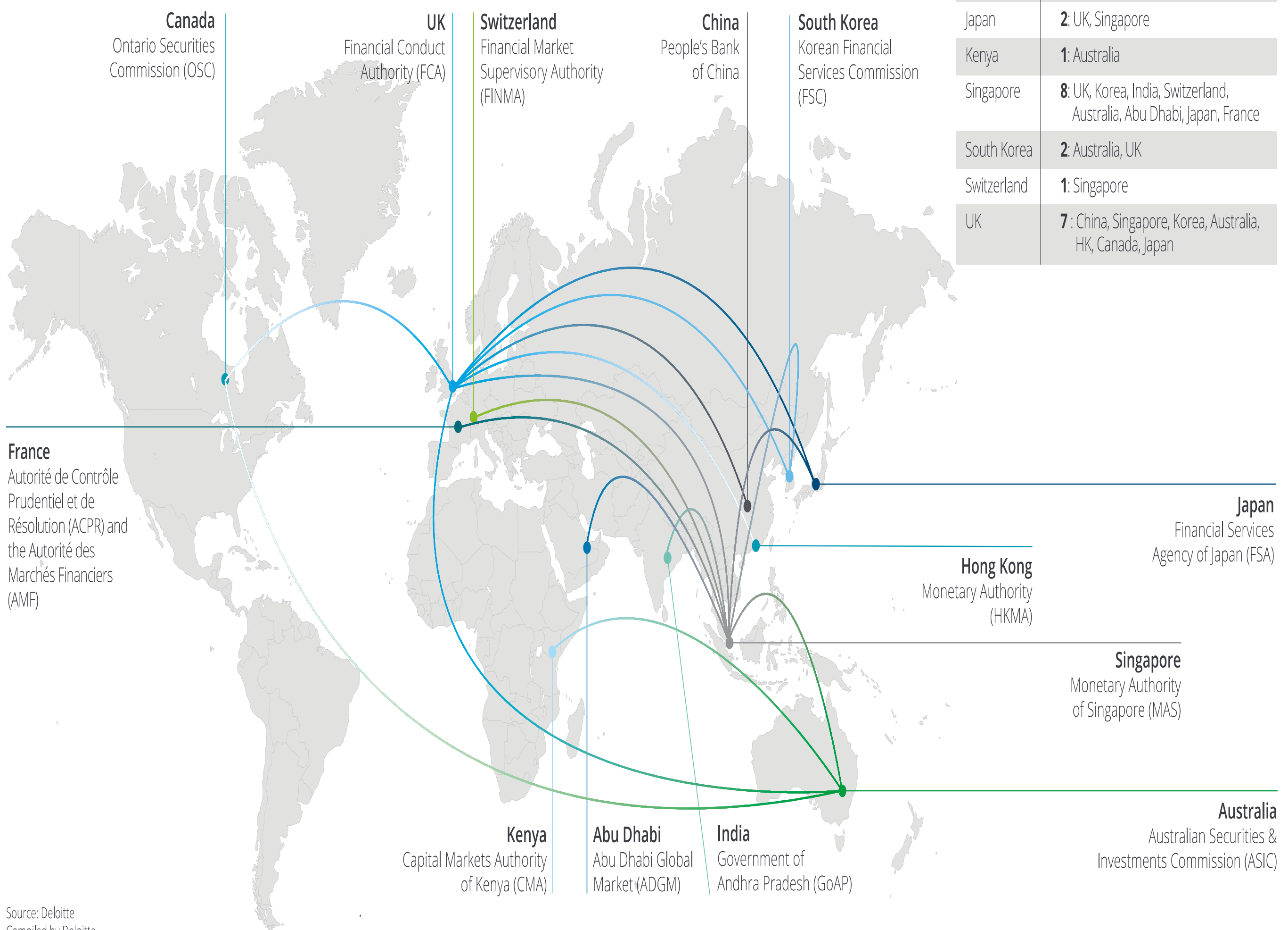

Fig 3 Regulatory Collaborations
Source Deloitte, (2017)

Taken together, these observations provide important insights on the growing suitability of collaborative regulation for fintech. Although a bit of caution should be exercised towards existing collaborative regulations as little is known if they mirror the co-opetition construct as our study advocates, which validate the ideas shared by Bromberg, Godwin & Ramsay, (2018) and Jeffreys (2019) that focus should shift from jurisdiction-specific regulation to World-wide regulatory collaboration as seen in the case of smart card industry because such collaboration assists regulators address territorial concerns that arise in an increasingly complex globalized market. Indeed, fintech requires expanded regulatory perimeter in form of cross-border regulatory cooperation because of the globalisation of markets and fintech disruptive nature. This would enable ease of entry for fintech developments in each other's jurisdiction, thereby facilitating broader adoption of fintech innovation and enhance economic integration within the region.

V. POTENTIAL CHALLENGES OF COLLABORATIVE REGULATION

Despite its growing attribution, collaborative regulation suffers from several major weaknesses which explains why it has been relatively slow to embrace or take off in many jurisdictions: in particular, issues like associated practicalities and operationalising such an approach remains hazy. The shortage of expertise appears to have led to a conservative approach to adoption (Frieder 2018). For example, operationalising collaborative regulation would require different jurisdictions to achieve a certain technological advancement to provide the same level playing field of risk management services and this is actually a point where asymmetry may actually be amplified and thus have an opposing effect. These differences in regulatory capacity (human and financial) and lack of centralized information centres in different jurisdictions (Oduor & Kebba, 2019), especially, in sub-Saharan Africa where mobile payments systems are becoming very popular across the continent, but regulators' understanding of the innovations and putting in place appropriate regulatory frameworks remain slow because of limited participation in fintech innovations. Thus, the current differences in regulatory capacity from jurisdiction to jurisdiction would not allow a smooth run of regulatory collaboration.

Other obstacles such as divergent administrations and regulatory capture remain an albatross. Primarily, countries and most domestic regulators, in reality, are reluctant in relinquishing control to international policymakers over fundamental concerns like privacy, security, and financial consumer protection, thereby removing regulatory independence even though they are accountable to their citizens and responsible for enacting domestic laws for their protection (Lenaerts, 2015). Lastly, regulatory capture by interest groups, which leads to a drop in government transparency and accountability is a major hindrance. Stronger states would not only dominate the weaker ones, they will determine the rules of the game. In some cases, the hegemon provides coercive leadership, where collaborative rules are enforced using negative and positive sanctions, and payments are extracted from smaller collaborating states to maintain the collaboration. There are also other angles to it as Haggard and Simons (1987) observed in regime theory: first, collaboration failure due to the inability to bind authoritatively and considered to be born weak. Opportunistic exploitation between states' behaviour and collaboration norms, where states agree to collaborate only to intentionally break it within or exploit it for a higher payoff, is another one. While this remains at the forefront of government reasons for showing weak appeal toward collaborative governance (Ahmed, 2019), Price (2017) is of the view that the consistent threat of new globalism by countries pulling out of single union and markets to be independent, as reflected in BREXIT is a critical obstacle. This reflects a move away from cross-border regulatory collaboration following jurisdiction turning inward to protect its interests.

VI. CONCLUSION

This study provided an important opportunity to advance the understanding of fintech development in the financial ecosystem, focusing more on prevailing fintech regulations. Excluding countries that continue to take a piecemeal or wait-and-see approach before strictly regulating fintech, the regulatory sandbox is the most popular approach for the majority of countries with fintech regulation. Further review on sandbox preparedness showed pockets of success within some jurisdictions; especially as it concerns assisting fintech firms to nurture their activities, in relaxed regulatory regimes and controlled environments for a given period. This approach the regulators contend presents a wonderful opportunity to monitor fintech firms' progress as a supervisory technique.

However, this approach alone as a fintech regulatory model is seemingly insufficient, as the disruptive nature of fintech with disintermediation potential for traditional financial institutions remains a challenge; providing a precursor for a more ambitious model of regulation. It is therefore considered in this paper, in complement of other related studies, that a broader regulatory model to achieving effective regulation is required, and considers a collaborative approach mirroring co-opetition regulatory theory as an approach worth exploring. This is because of its capacity to meet the dynamism and connectivity of today's markets and the nature of fintech firms, their operations, which sometimes involve cross-border services, require the integrated extraterritorial application of law or cross-border regulation.

The high point of the study is applying co-opetition regulatory theory for the first time in literature to discuss fintech collaborative regulation as well as identifying digitisation and automation of regulatory process through RegTech as an innovative option to deploy collaborative regulation, which would enable rapid optimisation of regulatory compliance, risk management, monitoring and data protection worldwide. Developing countries with limited expertise to set up an optimal fintech regulation will

hugely benefit from a technology collaborative model as it will enable broader opportunities for exploration offered by collaborative regulation to help keep up with the pace of innovation, risk mitigation and control that sustain market integrity.

The major limitation of this article is that it does not proffer definitive policy prescriptions or provide an operational blueprint for proposed collaborative regulation. This is beyond the scope of this study since it would likely raise legal, sovereignty, economic and more political questions not covered in this study. Instead, it discusses existing regulatory options and potential strategies that can address fintech regulatory challenges, especially the transboundary issues to address the cross-border challenges. It also looked at the effectiveness of this initiative on the dynamism and connectivity of fintech firms, and how developing countries can optimise their regulatory compliance, risk management, monitoring and data protection through cross-jurisdictional collaboration. Lastly, it created a foundation for an intellectual discussion for reassessing the strengths and weaknesses of existing fintech regulations, which are seemingly simplistic; and demand that attention should shift towards a pluralistic collaborative regulation. The study sees considerable promise in promoting well-coordinated and implemented regulatory collaboration through which different jurisdiction regulators and other actors coexist universally in a symbiotic relationship.

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