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Regulating for innovation

January 2018

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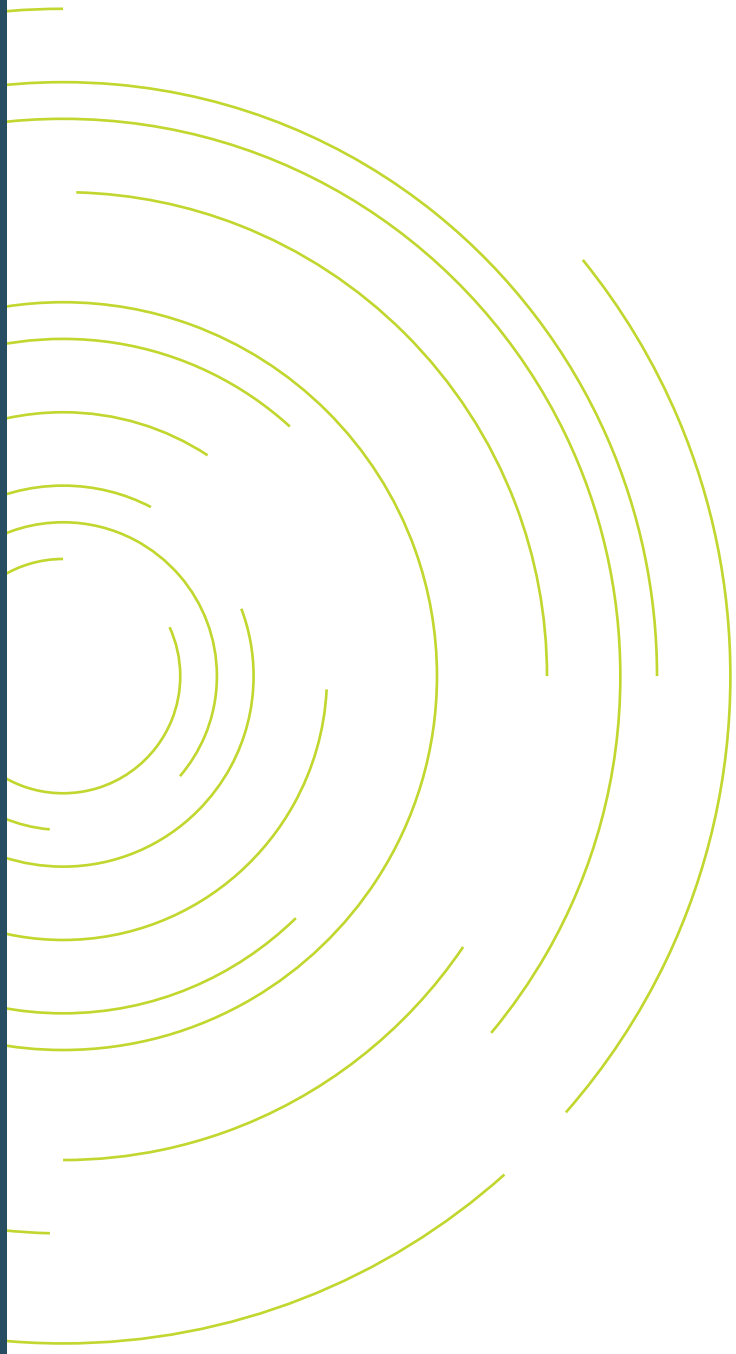

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Executive summary

Why regulate for innovation? Innovation entails the introduction of new methods, ideas or products that offer greater efficiency or value in existing processes or products or that entirely redesign the existing ways of doing business or offering products. New technologies mean that innovation in the financial sector is happening at a faster and more prevalent rate than ever before.

Innovation is fundamental to market development and enhancing value to consumers. However, it brings with it consumer and systemic risks and, due to its novel nature, is often not fully accommodated in current regulatory frameworks. Indeed, innovation may challenge the very nature of insurance and other financial services. This confronts regulators with the need to facilitate and promote innovation, while protecting consumers and adequately managing the risks that arise.

A form of test-and-learn. While regulatory frameworks can be adjusted to accommodate innovations, the pace and novelty of change mean that it may be best to test new ideas, and learn from it, before entrenching requirements in regulation. This test-and-learn approach gained prominence with the rise of mobile money and, in the insurance sector, m-insurance. More recently, the concept of a "regulatory sandbox" has come to the fore. Financial-sector sandboxes refer to an explicit approach adopted by the financial-sector regulator to allow innovators that do not comply with existing regulations to test their products within the market, but with regulatory safeguards applied to limit the extent of the risk to consumers and the market. Thus, the sandbox is underpinned by the test-and-learn principle. The test-and-learn approach encountered in many developing countries tends be ad hoc in nature, whereby regulatory treatment and conditions are set on a

case-by-case basis and are often not transparent to other market players. In contrast, the financial regulatory sandbox as applied to date is structured more formally, with structured application procedures and a clear set of eligibility criteria. Bespoke regulatory treatment is then usually provided to all those accepted into the sandbox[1]. Alternatively, or in addition, a range of support or advice tools may be used[2].

Fad or substance? More than 20 countries have already adopted a financial regulatory sandbox or are in the process of setting up a sandbox. Numerous others are considering a sandbox approach. The attractiveness of the concept stems from the fact that it is a tool to enable responsible entry into the market, via a transparent framework that creates a level playing field and reduces regulatory uncertainty. In so doing, it provides market players and regulators with a learning opportunity that can, over time, feed into changes in regulatory design.

But is a sandbox always desirable or feasible, especially given the capacity and coordination constraints faced by regulators in the developing world? And how does it fit within the broader regulatory architecture to facilitate innovation?

> The concept of a regulatory sandbox is gaining increasing prominence and does, indeed, add value in a financial-sector landscape increasingly transformed by innovation. However, the question of how regulators should be regulating for innovation cannot simply be answered with 'implement a sandbox'.

1 Temporary bespoke regulatory treatment reduces or waives existing regulatory requirements for innovators, usually on an impermanent basis, in the interest of testing and learning while concomitantly implementing tailored safeguards to limit the scale of the risk.

2 Communication/support tools open channels of direct interaction between regulators and innovative providers, with the aim to support innovative firms, whether implicitly or explicitly, to more easily navigate and comply with regulations.

Prerequisites. A regulatory sandbox approach is not appropriate or even possible in all jurisdictions. At least five prerequisites must be in place before a financial regulator can begin to consider a sandbox approach as viable:

1. **Mandate.** Regulators are usually created by acts of Parliament that define their mandate and scope of activities. The legal mandate of regulators determines the type of activities they can engage in, as well as which interventions they are able to make. Increasingly, the mandates of financial regulators extend beyond a narrow focus on regulation and supervision. However, where regulators' mandate limits their activities to purely regulating and supervising, a sandbox approach may not be legally defensible.
2. **Willingness.** A regulator that has the mandate to encourage innovation may not be motivated to do so. A regulator's willingness to foster innovation will be closely linked to the market context or level of market development, and whether the regulator is confronted with innovative developments to which it must respond in the first place.
3. **Presence of innovation.** The market context and level of market development will determine whether the regulator is confronted with the need to respond to innovative developments.
4. **Innovation not already accommodated.** If a new innovation can already be accommodated within the existing regulatory framework, then there is no requirement for a new approach to enable it to be implemented.
5. **Discretion.** The regulatory architecture will determine whether a regulator has the discretion to implement a sandbox approach within the existing regulatory framework. A principles-based regulatory framework typically provides regulators with appropriate discretion. Within a rules-based regulatory framework, a specific space would need to be carved out to enable the discretion required to implement a sandbox.

Implementation considerations. Even if a sandbox is a viable regulatory option, the nature and design of that sandbox will depend on the contextual realities – there is no one-size-fits-all approach. The three primary considerations identified across markets are coordination, regulatory capacity and the relevance of the sandbox to the actual regulatory challenges faced by firms:

- **Coordination.** Innovative developments often "cut across" or "fall between" the mandates of multiple regulators. As such, innovations may be subject to more than one set of regulatory requirements or may operate in regulatory "grey areas", which render them unregulated, if not illegal. In the absence of regulatory coordination, innovative firms incur significant costs in their attempts to navigate the regulatory environment and face considerable regulatory uncertainty, which may affect their perceived viability and their ability to attract investor funding.
- **Capacity.** Regulatory capacity determines which tools can be implemented to regulate and support innovation, as well as their effectiveness. Regulators need sufficient capacity to understand and manage the risks that are likely to arise from new technologies and innovative business models, to monitor a higher number of firms more intensively against

unique regulatory requirements and to provide advice to innovative firms. Although capacity constraints do not entirely limit a regulator's ability to implement all tools for regulating and supporting innovation, they may render the application of very resource-intensive tools unfeasible.

- **Relevance.** The tools implemented need to address the actual regulatory barriers faced by innovators in the market if they are to be effective. Regulators need to engage and consult with market players to understand their primary challenges in order to design interventions that effectively meet their actual challenges.

To build a sandbox or not? In summary: The concept of a regulatory sandbox is gaining increasing prominence and does, indeed, add value in a financial-sector landscape that is increasingly transformed by innovation. However, the question of how regulators should be regulating for innovation cannot simply be answered with "implement a sandbox". First, the relevant prerequisites must be in place for such an approach to be an option. And even then, capacity, coordination and relevance are key implementation considerations. Ultimately, a sandbox remains a testing ground and does not replace the need to adjust the overall regulatory architecture to proportionately regulate for responsible innovation. The question, then, is less about whether to build a sandbox than it is about assessing the market context, regulatory and supervisory realities in a systematic way and devising a context-relevant, fit-for-purpose strategy for dealing with an inherently unknown future based on testing and learning.

1 Introduction

Financial service innovation has been around since the first rudimentary forms of banking emerged in Assyria in 2,000 BC, but the pace of innovation in recent years is unsurpassed. In December 2016, Lemonade (a US-based insurance company) set a new world record by paying an insurance claim within three seconds of it being lodged. This is just one example of a raft of insurtech initiatives that leverage new types of technology and data to more efficiently offer insurance products with greater value to both new and existing consumers.

Innovation has been central to the development of the financial sector and to the value that it adds to society[3]. This creates a strong imperative to facilitate and promote innovation. However, innovation also brings risks and, given its novel, unpredictable nature, innovation challenges existing regulatory frameworks.

For regulators[4], the dual implications of innovation make it a critically important but also challenging topic to address. Regulators with a mandate to support market development and sectoral growth have a duty to encourage innovative ventures that help to drive market development and that enhance consumer value. However, financial-sector regulators also all have a mandate to limit systemic and consumer protection risks. As innovation is by its very nature new and unforeseen, it can be difficult or impossible for regulators to identify and deal with risks *a priori*, or to foresee in what way regulation would need to evolve to ensure that it continues to accommodate innovation.

The concept of a regulatory sandbox has come to the fore as a regulatory approach that can help regulators to tread this delicate balance by creating a "safe space" in which new ventures can be tested, thereby enabling market entry by innovative providers while limiting the associated risks.

Financial-sector regulatory sandboxes have been proposed and/or introduced in more than 20 different countries within the last few years. In practice, the design and nature of these sandboxes differ vastly across different contexts. Indeed, while sandboxing may be the new "buzzword", the underlying concept is similar to that employed by countries already implementing a test-and-learn approach. The principle behind a sandbox is to provide an overarching approach to regulating for innovation, rather than delving into how to regulate for specific innovations. Indeed, a core rationale for the regulatory sandbox is that it provides the regulator with the opportunity to learn about the new types of risks that emerge from an innovation, thereby enabling them to tailor subsequent regulation accordingly, based on past experience rather than hypothesised effect.

This note articulates the rationale for regulators to consider applying this sandbox approach within their markets, and it provides details on some of the specific regulatory tools that can be utilised to this end. However, this note also argues that a sandbox is not a silver bullet and is not a single, one-size-fits-all intervention. Thus, we discuss the prerequisites that need to be in place before any kind of sandbox approach can be considered, plus we explore what regulators need to consider in designing and implementing such a regulatory approach in a manner appropriate to their specific context.

3 For example: Suri & Jack (2016) estimate that M-Pesa, launched in 2007, has lifted 2% of Kenyan households out of extreme poverty.
4 The term "regulators" is used throughout to refer to regulators and supervisors.

The analysis is conducted primarily through the insurance market lens. However, the principle of sandboxing and the considerations outlined are more broadly applicable across financial-sector regulators. Examples and learnings are also drawn from beyond the insurance sector. The considerations and framework put forth here are based on desktop research and case studies, as well as 18 interviews with supervisors, other regulatory authorities and market players, legal experts and financial service providers (FSPs) across 10 jurisdictions[5].

This note is structured as follows:

- **Section 2** explores the dual nature of the concept of innovation and its relevance from the regulator's perspective.
- **Section 3** delves deeper into the approaches to innovation that regulators can take.
- **Section 4** discusses the different tools at regulators' disposal to implement the sandbox approach.
- **Section 5** discusses the prerequisites for a regulator to consider a sandbox, and it presents the decision path to follow when deciding whether the sandbox concept can, and should, be considered in a specific market.
- **Section 6** lays out the most important considerations for a regulator to keep in mind when designing a sandbox approach.

5 The jurisdictions considered are: CIMA, Ghana, Kenya, Malaysia, Namibia, Singapore, Tanzania, Uganda, UK and Zimbabwe.

2 What is innovation? Why is it relevant for regulators?

Innovative outcomes and processes. The term "innovation" represents both "a new idea" and "the process involved in the development of a new idea" (Riggs, 2015). It may be applied to products, processes, marketing methods, organisational methods in business practices, workplace organisation and external relations (OECD/Eurostat, 2005). Hence, "innovation" as we're applying it in this note is not just fintech[6] and/or insurtech[7] but also anything that confronts regulators with something that they are unfamiliar with or unsure how to treat.

Innovation creates opportunities for firms and consumers. Firms that innovate successfully differentiate themselves from their competitors in the hope of advancing their stake in the market (Riggs, 2015). Innovation may also improve value to consumers, enhance efficiency and resolve issues across the value chain, as the latest developments in insurtech illustrate. For example, one of the major challenges that insurers face in serving low-income markets is to respond to consumer needs that are "different and new" (Smit, et al., 2017). Innovative insurtech firms (like digital platforms and technology-enabled partnerships) are able to design bundled products that combine insurance cover with other services to better enable consumers to meet their financial and non-financial needs. Box 1 provides more information on Hello Doctor, an example of how technology is leveraged to offer a health solution for consumers that goes beyond basic insurance.

Box 1: Hello Doctor

Kenya's Hello Doctor, together with CBA and Cannon Assurance, offers a health solution package to Safaricom's M-Pesa customers called Sema Doc. It is a subscription service delivered via mobile phone, which aims to offer a comprehensive set of tools – not limited to insurance – to manage health risk remotely. A hospital cover underwritten by Cannon Assurance is complemented by 24-hour access to doctors via text or call (one-hour response time) to receive medicine prescriptions over the phone. Twice a day, customers receive health tips by text message. Through M-Pesa, a health account is opened when individuals subscribe to Sema Doc. The account is used for health-related savings to pay a monthly Sema Doc subscription fee and to make payments at health facilities. Furthermore, Sema Doc subscribers can apply for health loans, which have favourable repayment terms and which are paid to a health facility directly. The hospital cover is provided on a digital interface via mobile phones and includes the benefit information as well as the terms and conditions of the cover. As such, Sema Doc customers are better able to manage their health and health-related expenses on an ongoing basis.

Source: Smit, et al. (2017)

6 Fintech is short for "financial technology" and is used to describe "innovative financial solutions enabled by IT" (Puschmann, 2017).
7 Insurtech can be defined as "an insurance company, intermediary or insurance value chain segment specialist that utilises technology to either compete or provide valued-added benefits to the insurance industry" (Sia Partners, 2016).

Innovation risks concern firms, consumers and regulators. Innovations can also create new and unforeseen risks at both a consumer and market level (Wiedermaier-Pfister & Ncube, 2017). For instance, data protection risk can arise when data gathered from clients becomes available to unauthorised parties without clients' consent. Collection and storage of additional client data by providers increase the risk that cybercrime will compromise the integrity of the personal data (cyber risks). The risk of partnership failure is also heightened, given the fact that these innovative initiatives are often driven by technical service providers (TSPs) outside the regulated FSP sphere. Ultimately, however, the specific risk manifestations and the best way for regulators to curtail the impact thereof are context-specific and difficult to predict *ex ante*.

Moreover, as noted in Section 1, mitigating these new risks is challenging because innovation – by definition – is new and unpredictable. The example of EcoLife in Zimbabwe, in Box 2 below, highlights both:

- The potential to reach large numbers of new consumers by employing new innovations and technologies, and
- The risks that may arise and the extent to which consumer trust can be eroded when these risks manifest

Box 2: The experience of EcoLife Zimbabwe

EcoLife was a product that was sold and marketed as part of an airtime package, with free life cover as an additional benefit. By June 2011 (seven months after its launch), it reached approximately 20% of the Zimbabwean adult population. A tripartite partnership between EcoNet (a Zimbabwean MNO), First Mutual Life (FML) (a Zimbabwean insurer) and Trustco (a Namibian-based TSP) made the provision of EcoLife possible. Before launching EcoLife, EcoNet and FML sought IPEC's approval. The regulator required that EcoNet formally register as FML's agent and reviewed the agreement between EcoNet and FML, but it did not review the tripartite agreement. In June 2011, following a royalties-related dispute between Trustco and EcoNet that resulted in the suspension of the service, all EcoNet subscribers lost their EcoLife cover overnight. Upon cancellation, 62% of EcoLife customers were not notified about its cancellation. Demand-side research indicated that 63% of sampled consumers ruled out the use of similar products in future, and 42% were dissatisfied with insurance. This illustrates the significant reputational risk for the insurance sector associated with such a suspension.

Source: Leach & Ncube (2014)

Challenging the foundations of insurance.
Innovation is not just introducing incremental benefits and risks in the insurance market – as elsewhere. It is set to challenge the very foundation of insurance. For example, the shift from physically present salespeople to robo-advisors or algorithms challenges the traditional definitions of advice. Robo-advisors or algorithms advise on a potential consumer's risk profile and suggest an outcome that even the developers may not be able to predict or evaluate for appropriateness (given the client's context or needs). As no individual person can be held liable, the risk of mis-selling must be managed at an institutional level. Innovation may also challenge the bounds of national jurisdictions, the notion of underwriting or the definition of insurance. Online peer-to-peer platforms (like China's TongJuBao[8]) that bring together individuals to pool risks among themselves may challenge the need for obtaining an insurance licence in any particular jurisdiction.

“Innovation is not just introducing incremental benefits and risks in the insurance market – as elsewhere. It is set to challenge the very foundation of insurance.”

8 TongJuBao is a P2P platform in China formed by P2P Protect (a TSP) with no underlying insurance carrier. It is described as a collaborative insurance model that brings users together to share risks with the aim to result in fairer costs, fairer claims treatment, and with more transparency and user empowerment than in traditional insurance models (Denoon-Stevens, 2017).

3 Regulatory approaches to innovation

Balancing regulatory objectives. For regulators, the dual implications of innovation (as discussed in Section 2) make it a vital but also difficult issue to consider. Regulators whose mandate it is to promote market development and sectoral growth are obliged to encourage initiatives that foster such development and improve consumer value. Nevertheless, regulators have a primary duty to curtail systemic and consumer protection risk.

Regulation may limit market entry. Whether intended or not, regulation (such as licensing and prudential requirements) can be described as "building a wall" around the financial services markets. FSPs who are unable to meet the regulatory entry requirements are unable to scale this wall. Due to constrained resources, innovative firms (especially start-ups) may be even less able to comply with the regulatory requirements. As such, they may be barred from entry or may dedicate a considerable portion of their resources trying to navigate the regulatory environment and to avoid overstepping the boundaries set by regulators.

Proportionality "lowers the wall". The principle of proportionality has been implemented by financial regulators in numerous jurisdictions and is foundational within the justice system. Indeed, it is one of the G20 Principles for Innovative Financial Inclusion (AFI, 2011). Supervisors implementing this principle adapt specific supervisory requirements so that they align with "the nature, scale and complexity of risks posed" (IAIS, 2012). Thus, in the analogy of the regulatory wall, proportionality lowers the wall in line with the level of risk posed. As such, this principle often forms the basis for tiered regulatory requirements or licences. In Madagascar, for instance, there are three categories or levels of microfinance institutions (MFIs), which are subject to different prudential and reporting requirements, based on the activities in which they are permitted to engage (Ministère de l'économie, des finances et du budget, 2007). South Africa also has three categories of Authorised Dealers in foreign exchange with limited authority (ADLAs)[9] that are subject to different minimum unimpaired capital requirements and, as such, authorised to conduct different business activities and permissible transactions (SARB, 2017).

Proportionality widely applied to microinsurance. In the insurance market, prevailing and proposed microinsurance regulatory frameworks are usually based on the concept of proportionality (Wiedmaier-Pfister, et al., 2016). Microinsurance regulations introduce reduced entry and operating requirements for insurers that offer products that have been defined as "microinsurance". They have been implemented by at least six insurance supervisors in Africa, while at least another 11 African countries are in the process of developing a microinsurance regulatory framework (Wiedmaier-Pfister, et al., 2016). The "regulatory flexibilities" embodied in microinsurance frameworks create an opportunity for innovative developments in products and business models to arise, while decreasing the costs providers must incur to offer microinsurance, including those linked to compliance (Wiedmaier-Pfister, et al., 2016).

9 ADLAs are authorised by the South African Financial Surveillance Department to deal in foreign exchange transactions. The three categories are 1) Bureaux de Change; 2) Bureaux de Change who can also offer money remittance services in partnership with external money transfer operators and 3) independent money transfer operators (SARB, 2017).

Proportionality may not be sufficient. However, even the effective application of the proportionality principle may not in itself be adequate to accommodate all innovative developments. First, some innovative models may still contravene existing regulations, beyond just entry barriers. For instance, if the prevailing data protection laws prohibit the transmission of customers' data outside national borders, fintechs whose business models rely on cloud-based services may be unable to enter the market legally[10]. Second, barriers to entry may still be too high for some potential market entrants. Third, the proportionality principle does not necessarily provide the regulator with the tools required to regulate for the unknown.

The sandbox approach "creates a door in the wall". A test-and-learn or sandbox approach helps regulators to enable innovative ventures that meet specific criteria to "pass through a door in the wall", i.e. to legally gain entry to the market under certain conditions without complying with the standard set of regulatory entry requirements.

No two sandboxes are alike. The sandbox approach can manifest in different forms. The most well-known sandbox examples to date (such as the one implemented by the UK's FCA, discussed in Box 3) are typically structured almost like a competition, with eligibility criteria and applicants for entry to the sandbox. Each firm or venture that applies to enter the sandbox and meets the eligibility criteria is then assessed on its own merits, so that the regulator may tailor and implement safeguards accordingly.

10 See Section 6 for more detailed information on the regulations adopted by the Rwanda Utilities Regulatory Authority (RURA).

Box 3: Sandboxes across the world

There are at least 28 countries with proposed or existing regulatory sandboxes (Jenik & Lauer, 2017). Operational sandboxes can be found in Australia, Bahrain, Canada, Hong Kong, Malaysia, the Netherlands, Singapore, Thailand, the UAE (Abu Dhabi), the UK and the USA. Among countries in sub-Saharan Africa (SSA), only Mauritius and Kenya have established or officially announced an intended regulatory sandbox.

The UK's FCA coined the term "regulatory sandbox" in 2015 (Jenik & Lauer, 2017). The sandbox supports its mandate to improve competition. Applications are structured into cohorts, which are open to authorised and unauthorised firms alike. The FCA imposes limits on the duration of, and number of customers involved in, the sandbox tests and requires that firms report back on a regular basis. Restricted authorisation, individual guidance, waivers and no-enforcement-action letters are the tools at the FCA's disposal, although they are only applied if required and the FCA is allowed discretion (FCA, 2017a).

The sandbox proposed by Kenya's CMA is likely to also follow a cohort approach. Whereas the FCA's cohorts are open to all financial services firms, the CMA's intention at the time of writing was to limit applications to firms that want to test capital-markets-based fintech innovations.

Bank Negara Malaysia's sandbox is also targeted at specific firms – innovative fintechs – but it accepts ongoing applications (i.e. it does not follow the cohort structure).

A form of test-and-learn. While sandboxing may be a new term in financial regulation, the underlying concept and principle apply more broadly. In fact, sandboxing can be considered as a form of the test-and-learn approach frequently observed in financial-sector regulation, which in essence signals an openness to engage with new ideas and to set safeguards to manage the risks arising. Box 4 provides some examples of test-and-learn that we encountered during our research.

Different applications of the same principle. Like sandboxes, the test-and-learn approach may allow products and services that are new or adapted to the market's needs, as well as untried business models, to be introduced into the market – ideally "under carefully controlled conditions" (AFI, 2011). Regulators thus have the opportunity to learn about the market practices and risks related to an innovation, enabling them to tailor subsequent regulation accordingly.

The manner in which the test-and-learn approach tends to be applied in the countries considered in this study usually differs from existing sandboxes in three key ways:

1. In practice, test-and-learn is often used as an alternative way of allowing players that do not fall within the current regulatory framework into the market on a permanent or semi-permanent basis. The letter of no objection issued by the regulator thus becomes the permanent regulatory dispensation of these players. In contrast, the sandboxes considered within this study all specify the concessions as temporary or specify that the sandbox applies to pilots only, before the fully fledged launch.
2. While sandboxes are more formally structured, with rounds of applications and uniform criteria across all applications, a test-and-learn

Box 4: What is test-and-learn?

The test-and-learn approach allows regulators to observe the impact of an innovation or product adaptation ("test") and to adjust their regulatory response to it, based on their improved knowledge of its effect ("learn"). Globally, financial regulators have applied test-and-learn approaches for several years. The Philippines Central Bank (Bangko Sentral ng Pilipinas) began applying a test-and-learn approach to regulating mobile money in the Philippines in 2001 (GSMA, 2012). The Central Banks of Kenya and Tanzania similarly employed a test-and-learn approach to enable innovation in retail electronic payment systems to allow telecommunication operators to launch mobile money services more than a decade ago (Di Castri & Plaitakis, 2017).

The test-and-learn approach has since been incorporated into the G20 Principles for Innovative Financial Inclusion (AFI, 2011). Nevertheless, official guidance on the manner in which regulators should adopt this approach is limited. For example, Ghana's NIC follows a flexible test-and-learn approach, utilising microinsurance regulation to regulate and supervise m-insurance initiatives and, specifically, technical service providers (TSPs) as microinsurance agents. Tanzania's TIRA engages with product providers (TSPs and MNOs) during the product approval process, as well as with the telecommunications regulatory authority.

approach usually does not have a transparent and/or consistent set of eligibility criteria or entry rules for all applicants. The test-and-learn approaches implemented by Kenya's Insurance Regulatory Authority (IRA) and Ghana's NIC, for example, do not have explicit and cross-cutting eligibility criteria. Yet, in both instances, the way in which the product approval process provides room for the regulators to exercise discretion allows for the conditional piloting and launching of innovative ventures.

3. The publicity surrounding the implementation of a sandbox may serve to canvass applications proactively and signal to providers that the regulator is willing to encourage innovation. Test-and-learn, in contrast, is a reactive measure applied when somebody "knocks on the regulator's door".

Why a sandbox? A test-and-learn or sandbox approach ("opening a door in the wall") is not a substitute to the "lowering of the wall" as part of a proportionate approach. Rather, a sandbox approach forms part of the building of a proportionate regulatory architecture over time. As such, it has three primary benefits:

- **Enables safe market entry.** A sandbox creates a regulatory safe space for innovators to test their products, as regulatory requirements are temporarily reduced or waived, either explicitly or implicitly, subject to safeguards designed to limit the scope of risk that is introduced to the market. For example, the sandbox implemented by Bank Negara Malaysia (BNM, the Malaysian Central Bank) limits the size and number of transactions, as well as the number of customers for pilot initiatives that form part of the sandbox. Furthermore, entrants into the sandbox are required to disclose the nature of the test to customers. The UK's Financial Conduct Authority (FCA) collaborates with firms in the sandbox to put in place bespoke safeguards for each test. Examples of bespoke safeguards implemented during the first two cohorts include additional capital requirements and the requirement that certified financial advisors review robo-advice (FCA, 2017b).
- **Reduces regulatory uncertainty.** Another advantage is that a sandbox reduces or even removes the regulatory uncertainty for innovative providers. For those who cannot be accommodated in the existing regulatory framework, the alternative to operating in a sandbox is either not to operate at all or to operate informally – either in a regulatory grey space or illegally. Operating outside the regulated space reduces these firms' ability

to access finance as well as their incentive to invest long-term, as they have no certainty on whether and how the regulator will choose to regulate them in future. Feedback provided to the UK's FCA by sandbox firms indicates that their understanding of the manner in which the regulatory framework is applicable to them improved due to the regulatory expertise that they are able to draw on as part of the sandbox (FCA, 2017b). It also reduces their need for external regulatory consultants and thus the size of the compliance-related costs incurred. The FCA (2017b) furthermore identified increased access to finance as a primary indicator of success from their first cohort, with at least 40% of firms that completed testing in the first cohort receiving investment during or following their sandbox tests.

- **A learning opportunity.** The implementation of a sandbox – as a form of test-and-learn – provides regulators with the opportunity to learn about an innovative product or technology and the risks arising from its introduction, before crafting appropriate regulation. Learnings from the sandbox test can then be translated into well-informed regulatory amendments applied to all market players.

“The implementation of a sandbox – as a form of test-and-learn – provides regulators with the opportunity to learn about an innovative product or technology and the risks arising from its introduction, before crafting appropriate regulation.”

4 Tools for implementing a sandbox approach

No single "ideal" tool. The sandbox approach is implemented through regulatory and supervisory tools. Regulators have a host of tools at their disposal. They need to choose a set of tools to strike a context-appropriate balance: to create a safe space for providers to develop their ideas and solve problems, while allowing the regulator to learn about the new development and its risks in a responsible, sustainable way. Whether it is feasible or desirable to implement a particular tool is a pragmatic question without a one-size-fits-all answer. This section unpacks the categories of tools available.

Two main categories. Irrespective of the exact manifestation of the sandbox approach or of what it is called, the tools at regulators' disposal remain the same: regulators can (i) implement a bespoke regulatory treatment, or (ii) encourage innovation through communication and support tools, or (iii) implement a combination of both types[11]. The limitations and flexibility of a regulator's mandate, the extent to which a tool enhances the transparency of a regulator's actions and the signal that the choice of tool(s) sends to potential and current market participants and investors are significant considerations in deciding which set of tools to adopt. The demands placed on firms' resources (in terms of time or funds allocated to complying with the regulator's requirements), as well as the potential consumer and/or systemic risks that could arise due to the application of a particular tool, are also important factors to consider in determining which tools are most relevant and appropriate.

The rest of this section unpacks the most prominent tools that regulators have employed, whether in isolation or in combination with one another.

11 This categorisation is based on what we observed across the 10 countries that we considered.

4.1.

Temporary bespoke regulatory treatment

Temporary bespoke regulatory treatment entails a reduction in regulatory requirements specifically for innovators, usually on an impermanent basis[12], in the interest of testing and learning. The types of tools most commonly observed include:

Restricted authorisation or reduced licensing requirements. Under restricted authorisation, firms are only permitted to test the ideas that they have agreed on beforehand with the regulator. The sandbox implemented by Malaysia's BNM, for instance, carves out a space for reduced licensing requirements for innovative providers. As such, firms must only meet requirements that are proportionate to the testing activities that they will be engaging in. Once firms can meet the full set of regulatory requirements; however, the restrictions may be lifted and firms may start engaging in fully fledged commercial activity. Of the firms that finished testing within the first cohort of the sandbox implemented by the UK's FCA, about 90% are progressing towards a wider market launch (FCA, 2017b).

One of the main benefits of restricted authorisation is that its requirements may be easier for innovators to meet. As such, the level of resources to be invested – in terms of time and cost – may be lower. Moreover, any form of authorisation has the potential to encourage external investors to provide funding for an innovative development. However, the creation of bespoke authorisation requirements may be resource-intensive for the regulator. Another potential drawback is that a regulator's flexibility to determine authorisation requirements may be significantly restricted by national, regional and/or international legislative requirements. As such, the innovation-encouraging impact that this tool has could face hard limits.

Waivers and exemptions. Waivers and exemptions allow firms to engage in activities that would otherwise constitute an infringement of the rules. They may be applied to rules that are considered to be "unduly burdensome" or onerous to meet for firms that seek to test an innovation (FCA, 2017a). One of the main advantages of implementing these tools is that it enhances regulators' flexibility to respond to innovative developments. Moreover, regulatory uncertainty faced by individual firms may decrease since they have an agreement with the regulator that stipulates that, as long as their activities remain within the predetermined testing confines, they will not face the usual consequences of breaching a particular regulatory requirement.

However, regulators may not have the authority or statutory powers required to implement these tools. In some cases, national or international law or codes of practice may impose hard limits on the feasibility of applying waivers and exemptions. BNM's sandbox, for example, features exemptions only for innovators that fall exclusively within its mandate.

No-enforcement-action letters (NALs) or letters of no objection. NALs or letters of no objection constitute a commitment by the regulator not to initiate disciplinary proceedings against a firm for engaging in an activity that does not fall within the current regulatory framework, subject to specific restrictions outlined within the letter. These tools may make it possible for regulators to deal with innovative developments that they have never encountered before, while providing individual firms with more clarity regarding a regulator's expectations and reducing the regulatory uncertainty that individual firms face.

Although regulatory uncertainty may decline for an individual firm when a regulator applies

12 While the conditions and permissions within explicit sandboxes are temporary, the way that test-and-learn is applied in SSA often renders it a way to provide permanent entry into the market. This is because the bespoke regulatory treatment is not only applied to pilots, and there is often no graduation to stricter regulatory requirements after a set period.

these tools, overall regulatory transparency in the market may decrease. Moreover, the likelihood of an unlevel playing field being created is also heightened. NALs or letters of no objection may also be resource-intensive and complex for a regulator to issue. Kenya's CMA, for instance, has applied letters of no objection and directional letters to enable innovative providers – such as a crowdfunding platform whose planned activity involves sourcing funds from outside Kenya to finance Kenyan small and medium enterprises (SMEs) (CMA, 2017a). The CMA plans to build on this accommodative stance by applying an additional policy tool (termed a Policy Guidance Note or PGN) to be more explicit in regulating individual innovators. It has already issued a number of PGNs; recently, to enable Exchange Traded Funds to be rolled out, "resulting in the first listing of such a product in Kenya" (CMA, 2017b).

Explicit reduction in barriers. Temporary bespoke regulatory treatment can explicitly reduce entry and operating barriers for new providers and products. To enhance the likelihood that the desired effect will be achieved, regulators can actively engage with providers (for example, in the mobile insurance sector, with TSPs, MNOs and insurers) and with other supervisory authorities with whom they have an overlapping mandate. Zimbabwe's Insurance and Pension Commission (IPEC), for instance, encourages all providers with innovative products that will grow the market to approach the regulator and, together, determine relevant regulatory requirements on a temporary basis, before turning these into permanent regulations. Stakeholder input into the design of the temporary bespoke regulatory treatment is not the only factor for regulators to consider; however, in all the sandbox or test-and-learn initiatives considered, specific safeguards were designed to deal with the possible risks arising.

Regulators' flexibility may face hard limits. As is clear from the discussion above, this category of tools can only be implemented by regulators that have sufficient flexibility. In Ghana, for example, the National Insurance Commission has the flexibility to regulate TSPs within the microinsurance agent category. Nevertheless, there will be limits to what concessions regulators can make as part of a bespoke regulatory dispensation. The exact bespoke treatment and extent of reduction in requirements will be specific to the regulatory framework in any country. In some cases, international law, principles, standards and guidance may also impose hard limits on the feasibility of applying this category of tools, thereby rendering them ineffective.

Helping to improve the regulatory framework. Bespoke regulatory treatment is usually not considered a permanent or even long-term solution to the question of how regulators should approach and encourage innovation. Ideally, the sandbox approach should be implemented with the intention to amend regulation, if required, upon completion of a successful sandbox pilot – so that all market participants can compete under the same rules. In practice, however (as discussed in Section 3), such treatment often becomes the de facto state of affairs for a specific firm, which may create an unlevel playing field and be detrimental to the extent of competition in the market.

4.2.

Communication/support tools

Even if no bespoke regulatory requirements apply, regulators can still support innovative initiatives by applying communication or support tools, such as open channels of direct interaction between themselves and innovative providers. Communication and support activities may be initiated by regulators or by the private sector and supported by the public sector[13] (De Beer, et al., 2017). The main activities observed include:

- **Advice:** Regulators may explicitly encourage dialogue with innovators, with a dual purpose: to aid firms in understanding how to navigate the prevailing regulatory framework and to help the regulator to identify where the regulatory framework requires adjustments to better foster innovation. For instance, the Direct Support Team within the FCA's Innovation Hub offers "a dedicated team and contact" and "assistance in preparing and making an application for authorisation" to innovative firms that meet the eligibility criteria (FCA, 2017). Regulators may also allow innovators to approach them for advice via an implicit "open-door policy". Kenya's Communications Authority (CA), for example, has been approached by numerous established and potential market players to provide clarification and advice.
- **Funding support:** Regulators may provide direct financial support (in the form of, for example, grants) and/or indirect or non-financial support (such as ICT infrastructure or operating space) with the aim of bolstering innovation in their markets. For instance, the Startup SG Founder grant, offered by Singapore's MAS, gives innovative, first-time entrepreneurs a start-up capital grant[14], as well as mentorship support (MAS, 2017).
- **Facilitating collaboration:** Regulators may play an important role in bringing relevant stakeholders together so that they can cooperate and collaborate on finding innovative solutions to existing problems. For instance, the UK's FCA requested an industry consultation (which took place between July 2016 and April 2017) to examine the viability of an industry-led sandbox for off-market testing of financial innovations. An industry sandbox creates a space "for fintechs and industry players to collaborate on new products and proofs of concepts in an 'off-market' environment without consumers" (Innovate Finance, 2017).
- **Training:** Regulators may support or fund activities aimed at building the capacity of stakeholders to engage in, and successfully manage, innovative activities. For instance, the Australian Competition and Consumer Commission (ACCC) offers an online course aimed at the education of small-business owners on their rights and obligations under the Competition and Consumer Act 2010 (Department of Industry, Innovation and Science, 2017). Insurance regulators in Zambia and Tanzania attended and supported industry innovation workshops hosted by the Technical Advisory Group (TAG) and Technical Working Group (TWG) platforms, respectively.
- **Signalling:** Regulators, such as the UK's FCA, who regularly organise, facilitate and/or attend innovation-themed events (such as conferences, panel sessions, roadshows, roundtables and workshops) signal to stakeholders that they are supportive of innovation. This signalling effect may encourage innovators to engage the regulator in other communication/support-related activities.

13 Explicit support and/or endorsement by the regulator for a private-sector initiative acts as a powerful signal to market players.
14 The scheme matches $3 to every $1 raised by the entrepreneur, up to a maximum of $30 000.

Direct interaction beneficial but not costless. Communication and support tools implicitly reduce entry and operating barriers for new providers and products. This type of direct engagement can reduce regulatory uncertainty and risk for providers that are developing and offering a new product. If implemented in a manner that is sufficiently transparent, these tools have the potential to aid and encourage not only emerging innovators but also potential market players, provided the regulator creates a clear set of criteria according to which firms qualify for aid via these tools. Moreover, ongoing interaction enables the regulator to learn from the innovative business models it encounters, to inform the adjustment of existing regulation as may be required.

“If implemented in a manner that is sufficiently transparent, these tools have the potential to aid and encourage not only emerging innovators but also potential market players, provided the regulator creates a clear set of criteria according to which firms qualify for aid via these tools.”

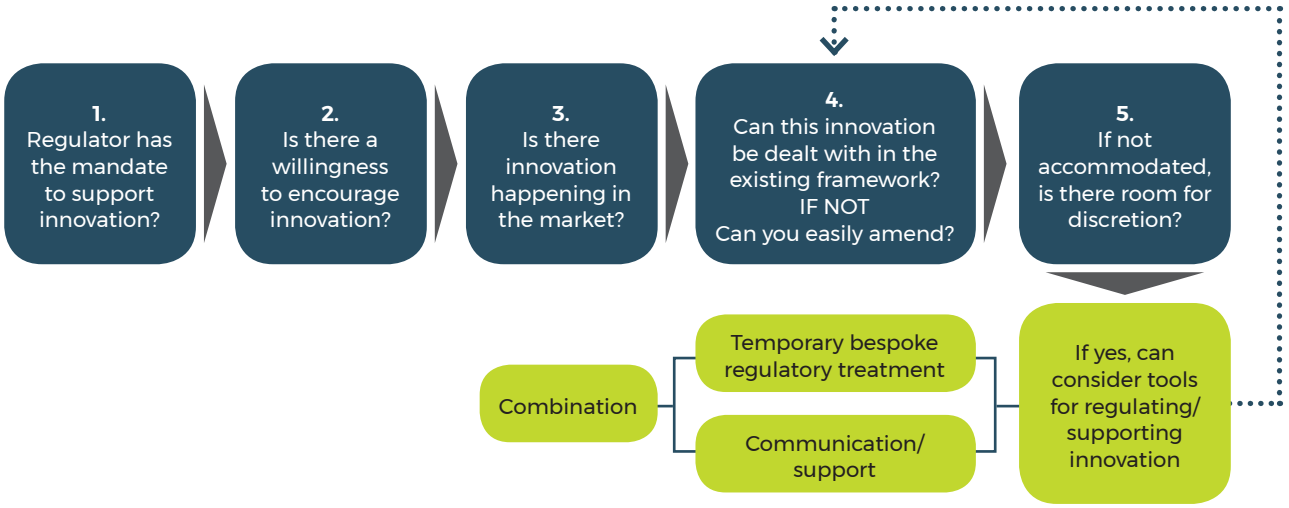
5 When to apply a sandbox approach?

Decision path maps preconditions. There are a few preconditions that need to be in place for a sandbox to be viably implemented. The first question to ask is whether a regulator can implement the sandbox approach. The second is whether a regulator should implement it. The steps displayed in Figure 1 represent the most important factors to consider in determining whether the sandbox approach is appropriate and viable within the context of a particular financial market. Understanding these steps is not only important for regulators, but also for development partners who are seeking to support regulators in their market development efforts, as the decision path helps to determine the viability of a sandbox. The rest of this section explains each of the steps in more detail.

Step 1: Consider whether encouraging innovation falls within the regulator's mandate.

Regulators are usually created by acts of Parliament that also define their mandate and scope of activities. The legal mandate of regulators determines the type of activities they can engage in, as well as which interventions they are able to make. Increasingly, the mandates of financial regulators extend beyond a narrow focus on regulation and supervision. For instance, the three operational objectives of the UK's FCA are: the protection of consumers, the protection of financial markets and the promotion of competition (FCA, 2017a). Market development is another "broader" mandate that is increasingly observed – the insurance regulator in India, for example, is even officially called the Insurance

Figure 1: The regulator's decision path



Source: Authors' own

Regulatory and Development Authority (IRDA). Although regulators never lose sight of their responsibility to regulate the market and ensure its stability, the activities of regulatory authorities with an explicit market development mandate would include supporting innovation and the development of innovative providers. For instance, the focus of Kenya's Capital Markets Authority (CMA) is split between market development and market regulation: two of its main objectives are "the development of all aspects of the capital markets" and "the creation, maintenance and regulation of a market in which securities can be issued and traded in an orderly, fair and efficient manner"[15].

Some regulators claim an implicit mandate. In legal jurisdictions where the regulator is not granted an explicit market development mandate, some regulators have taken the view that their mandate to protect customers implies a mandate to support market development and the creation of consumer value. The Inter-African Conference on Insurance Markets (CIMA)[16] is an example of such a regulator[17]. In 2016, for instance, it hosted a workshop on mobile insurance regulation, in partnership with the Access to Insurance Initiative (A2ii). The functions and duties of Tanzania's Insurance Regulatory Authority (TIRA) is established in the Insurance Act (2009) as "to promote and maintain an efficient, fair, safe and stable insurance market for the benefit and protection of policy holders" (The government of the United Republic of Tanzania, 2009). Under the broad interpretation of this mandate, TIRA has taken an accommodative stance to innovation, microinsurance and financial inclusion.

Some mandates preclude innovation support. Many regulators have a narrow mandate that does not include market development. The Namibia Financial Institutions Supervisory Authority (NAMFISA), for example, has a supervision, advice and AML/CFT supervision function (NAMFISA, 2017). As such, it does not have the legal mandate to encourage or support innovation or market development. The implication is that applying a sandbox or similar approach is simply beyond the legal scope of the regulator.

Step 2: Consider the willingness to encourage innovation.

Even a regulator that has the mandate to encourage innovation may not be motivated to do so. As discussed in Section 2, innovation entails benefits and risks. Some regulators will focus more on managing the risks than facilitating the benefits[18]. Thus, a precondition for the implementation of a sandbox approach is that the regulator be committed to facilitating innovation. Often, this commitment derives from one or more champions within the authority who advocate for the need to encourage innovation.

15 For the CMA's full mandate, see the Capital Markets Act, Chapter 485A, available from: https://www.sbgsecurities.co.ke/standimg/Kenya/sgbsecurities/downloads/CapitalMarketsAct.pdf.

16 Conférence Interafricaine des Marchés d'Assurances (CIMA)

17 CIMA's mandate emphasises harmonisation and unification. For a complete version of CIMA's mandate (in French), see: http://www.cima-afrique.org/pg.php?caller=cima#OBJECTIF%20DE%20LA%20CIMA

18 Even though other stakeholders external to a country's organs of state (such as development partners) cannot change the regulator's mandate, they may be able to influence the regulator's willingness to encourage innovative developments.

Step 3: Consider the market context and its influence on innovation.

The market context and level of market development will determine whether the regulator is confronted with the need to respond to innovative developments. In a completely underdeveloped insurance market[19], the insurance regulator may be less likely to prioritise the fostering of innovation. Instead, as discussed in Chamberlain, Camargo & Coetzee (2016), such a regulator may have to prioritise the development of foundational regulatory and supervisory frameworks with an emphasis on prudential regulation. In countries where there is significant market innovation, on the other hand, there will be a strong imperative for a regulatory response.

Step 4: Consider whether innovation can be accommodated within the existing regulatory framework.

The next consideration for a regulator with the mandate and willingness to encourage innovation is whether the current regulatory framework already accommodates the innovation. In South Africa, for example, m-insurance is accommodated in the broader regulatory framework, which means that the creation of a dedicated m-insurance framework is not necessary (Denoon-Stevens & Hougaard, 2017). However, innovative developments rarely fit neatly within the confines of the prevailing regulatory framework.

If an innovative development is not currently accommodated (such as peer-to-peer insurance models in the South African regulatory framework), the question is whether it would be relatively easy or quick to amend the regulatory framework to do so. If so, it may not be necessary to implement a sandbox approach. If the legislative process takes considerable time, however, amendments may not necessarily be able to "keep up" with innovative developments. In such cases, a sandbox approach may add value. For instance, Kenya's constitutional framework requires that, at the national level, any policy framework "be proposed or sponsored by the respective Cabinet Secretary, approved by the Cabinet, passed by Parliament, adopted as a Sessional Paper and finally assented to by the President" (Kenya Law Reform Commission, 2015). As such, this process can be lengthy, especially since one of the main stages involves stakeholder participation in debating and negotiating the substance of a draft framework. This protracted policy formulation process plays a significant role in driving the formulation of the CMA's proposed regulatory sandbox (Stakeholder interviews, 2017).

Step 5: Consider whether the regulator has the discretion to address innovation.

For regulators with the mandate and willingness to facilitate innovation and who are confronted by innovative developments that do not fall within the current regulatory framework, the next question is whether they have the legal discretion to address innovation by means of the implementation of a sandbox approach. The distinction between a principles-based and rules-based regulatory architecture is relevant in determining the extent of regulatory discretion (see Black [2008] and Dill [2017]):

- The term "principles-based regulation" refers to a broad set of standards that, while clear, do not specify every single embodiment of the outcomes relating to the principles (as such, they point in the direction of desired outcomes). These standards may be accompanied by

19 See Chamberlain, Camargo & Coetzee (2016) for the stages of insurance market development.

guidelines on how to achieve outcomes. The focus under principles-based regulation is not on compliance with exact stipulations; instead, emphasis is placed on whether the internal processes and systems of firms can produce the outcomes sought. Thus principles-based regulation, by its very nature, tends to afford regulators discretion. Common law systems (generally encountered in former British colonies or protectorates, including the US) tend to be principles-based (World Bank, 2006).

- Rules-based regulation signifies a set of detailed directives that govern the behaviour of firms. Rules enable firms to "tick the box" to guarantee compliance with the law. A regulator operating under a rules-based regime may still be given discretion, but for that to be the case, such discretion needs to be explicitly articulated in the law. Civil law systems (usually regions that were former French, Dutch, German, Spanish or Portuguese colonies or protectorates) tend to be rules-based (World Bank, 2016).

Regulators that (i) have the mandate and (ii) the willingness to encourage innovation in a market where (iii) innovation does exist, (iv) but which cannot be accommodated within the existing regulatory framework, and that have (v) the discretion to address innovation, are in a position to consider implementing a sandbox-type approach. It is important to note, however, that there are some considerations that span jurisdictions (such as the impact of major techfins[20] such as Alibaba and Amazon) and, as such, will be challenging for a regulator in a single country to effectively regulate.

Box 5: Forbearance: an alternative, "shadow" approach

Regulators sometimes simply turn a blind eye in response to innovative developments in the market that do not fit neatly within current regulation. A regulator that excludes a specific activity from its supervisory mandate may be described as practising forbearance. Forbearance may be based on a lack of supervisory capacity, lack of clarity among regulators about whether supervising the innovative development falls within its mandate or even a lack of awareness of the existence of the innovation. In some instances where an innovative development has been successful, the regulator's approach has retroactively been branded as "applying a type of sandbox" when, in reality, the regulator simply practised forbearance. Indeed, while forbearance regarding developments that a regulator has recognised as innovative and/or low-risk has the potential to serve the development of the market, its likely outcome cannot be predicted ex ante. Forbearance is a highly risky approach, as no safeguards are put in place. As such, it has the potential to give rise to consumer-protection and systemic risks, to create an unlevel playing field and to undermine the credibility of the regulator. Moreover, it is suboptimal because the innovators face regulatory uncertainty, as they have no clarity about when, if or how they may be regulated in future. This increases their risk and limits their incentive for long-term investment.

20 Entrants into the financial sector that have "large pre-existing non-financial services customer bases" and the "capacity to leverage the data gathered in their primary business into financial services" (Zetzsche et al., 2017).

6 Implementation considerations

6.1. Coordination

Reality check. It is important to note that regulators, especially in developing countries, may already find it challenging to efficiently address the foundational elements of setting up and enforcing regulatory and supervisory frameworks (such as prudential regulation). In addition to such fundamental challenges, in deciding on the tools (discussed in Section 4, above) that would suit their context, there are three main considerations for regulators: the mechanisms for coordination, the capacity implications and the relevance to actual market challenges. These considerations provide a "reality check" on the innovation support approach and tools chosen, and they help regulators to design and implement the sandbox approach appropriately. The most commonly observed and critical considerations for regulators to keep in mind when applying innovation support tools are discussed in the rest of this section.

Key barrier for firms and regulators. Innovative developments often cut across or fall between the mandates of multiple regulators. As such, innovations may be subject to more than one set of regulatory requirements, or they may operate in regulatory "grey areas", which renders them unregulated, if not illegal. Coordination among regulatory bodies is hence crucial to effectively regulate for responsible innovation. In the absence of regulatory coordination, innovative firms incur significant costs in their attempts to navigate the regulatory environment and face considerable regulatory uncertainty, which may affect their perceived viability and their ability to attract investor funding. In Kenya (for example), coordination challenges among the five regulatory bodies that regulate FSPs[21], plus the Kenya Revenue Authority (KRA), the Communications Authority (CA) and the Financial Reporting Centre (FRC), have been reported to slow down the implementation of innovative distribution mechanisms by at least one of the established insurance providers in the market. Box 6 illustrates this.

> "In the absence of regulatory coordination, innovative firms incur significant costs in their attempts to navigate the regulatory environment and face considerable regulatory uncertainty."

21 These are: the Capital Markets Authority (CMA), the Central Bank of Kenya (CBK), the Insurance Regulatory Authority (IRA), the Retirement Benefits Authority (RBA) and the SACCOs Societies Regulatory Authority (SASRA).

Box 6: Navigating the regulatory environment across different authorities: The case of CIC Kenya

In 2011, CIC Insurance Group launched its first product (Jijenge Savings Plan) on M-Bima, its mobile technology platform (Matul et al., 2014). It was hoped that, via M-Bima, CIC could "strengthen the scale and efficiency of its microinsurance operations" by eventually digitising the entire insurance value chain (Matul et al., 2014). With 10,000 subscriptions to the Jijenge Savings Plan within three months, it initially seemed as if CIC's objectives would be achieved. However, the collection of premiums via mobile money and airtime deductions soon proved to be problematic.

Despite initial sign-off from the insurance regulatory authority on the product, the Central Bank of Kenya (CBK) expressed concerns over the use of airtime as medium of exchange. Moreover, the value-added tax (VAT) of 16% on airtime, imposed by the Kenya Revenue Authority (KRA), contributed to elevated costs.

CIC considered switching to M-Pesa, but it was thwarted by the CBK's decision to prohibit the use of M-Pesa for standing orders (the effect of which is that customers have to actively decide, each month, to pay their premium). In an effort to ameliorate high lapse rates, CIC sent customers SMS reminders to pay their premiums.

In addition, CIC faced challenges in incentivising individuals to claim. Their attempts to inform deceased individuals' next of kin via SMS and/or phone calls that they qualified for an insurance pay-out proved unsuccessful. To overcome the fact that, due to the manner in which the product was being sold, no physical policy documents were generated, CIC created policy cards for insured individuals to carry with them. It was hoped that this strategy would allow their customers' next of kin to find the card and lodge a claim. However, the KRA required that CIC pay stamp duty[22] on the card. This requirement created unresolved uncertainty – CIC was paying the stamp duty but did not have the physical stamp. Furthermore, the IRA required that insurers provide consumers with physical policy documents, since it is not clear at the time whether insurance providers are legally able to accept digital signatures.

The complexity of navigating regulatory requirements across different regulatory authorities, without explicit coordination, and the associated uncertainty were identified as core challenges to the success of the product. While the IRA approved CIC's proposed product design at various life stages of the product, requirements from other regulatory folds required the insurer to change course and navigate additional regulatory hurdles. Communication and transparency were also experienced as challenges through the lifetime of the product.

Sources: Matul et al. (2014) and stakeholder interviews (2017)

22 Stamp duty is a tax that is levied on the legal recognition of certain documents.

Coordination challenges among regulatory bodies do not constitute an absolute barrier to the introduction of a sandbox approach, but they have significant implications for the implementation thereof. Our research and consultations have identified three ways in which regulators attempt to address the matter of coordination:

- **MoUs:** A memorandum of understanding (MoU) between regulators may overcome some of the issues created by regulatory overlap. In Zambia, for example, The Competition and Consumer Protection Commission has individual MoUs with each of the financial-sector regulators to facilitate information sharing and coordination of activities (Cooper et al., forthcoming). The Bank of Zambia also has an MoU with the Zambian Information and Communications Technology Authority (ZICTA), which outlines how the two regulators cooperate in regulating and supervising "areas of common interest" (Zambia Daily Mail Limited, 2014), including the joint instruction of service providers that are under the regulation of both institutions (Cooper et al., forthcoming).

  This process presents challenges, however, since:

  - Financial-sector regulators may have different and competing objectives.
  - Financial-sector regulators may need to coordinate with non-financial regulators, such as with the telecommunications authority.
  - An MoU might not necessarily be legally binding, which may make it hard to enforce.

- **Mandate-limited application of tools:** Alternatively, the regulator may need to limit the application of innovation support tools to developments that fall entirely within its mandate. The sandbox proposed by Kenya's Capital Markets Authority (CMA) implements this solution in that it will not be open to firms whose proposed innovation does not fall squarely within the confines of the CMA's mandate to regulate. A few jurisdictions (like South Africa and the UK) have restructured their financial-sector regulatory approach away from a sectoral approach to a twin-peaks approach. The twin-peaks approach creates two financial-sector regulators that regulate the prudential requirements and market conduct requirements, respectively, across the entire financial sector. Under this regulatory structure, a sandbox approach will encompass all financial players but will only pertain to the functional mandate of the particular regulatory authority. The UK's sandbox is structured on this basis, led by the Financial Conduct Authority (FCA).

- **Innovation coordination body or overarching innovation framework:** Another potential means by which coordination issues may be ameliorated is through the establishment of inter-governmental committees on innovation or even a separate, cross-cutting entity that serves as an independent "innovation coordinating body". The sandbox established by Malaysia's BNM provides an illustrative application of this principle of a specific unit established for this function, albeit within a single regulator, to coordinate between the different departments within BNM, rather than across regulators. Mexico has gone a step further by publishing a draft bill of the Financial Technology law in March 2017. The Law will regulate the organisation, operation, functioning and authorisation of companies that offer alternative means of access to finance and investment, the issuance and management of electronic payment funds and the exchange of virtual assets or cryptocurrency. The law includes a provision for a regulatory sandbox (Hogan-Lovells, 2017). Context-specific realities may, however, adversely affect the viability of implementing a similar coordination body.

"Another potential means by which coordination issues may be ameliorated is through the establishment of inter-governmental committees on innovation or even a separate, cross-cutting entity that serves as an independent 'innovation coordinating body'."

6.2.

Capacity

Capacity determines feasible tools. Regulatory capacity determines which tools can be implemented to regulate and support innovation, as well as the effectiveness of such tools. The following all require significant regulatory capacity: understanding the risks entailed by new technologies and innovative business models, creating bespoke regulatory requirements, determining the relevant tool(s) to implement on a case-by-case basis, and monitoring new ventures against such bespoke requirements. The implementation of communication or support tools – whether it requires physical or virtual infrastructure – also necessitates investment and capacity on the part of the regulator. Thus, capacity constraints may render the application of very resource-intensive tools unfeasible. Even the UK's FCA is challenged by capacity constraints. It is one of the primary reasons cited for creating a sandbox with a cohort structure (as opposed to a sandbox that accepts ongoing applications).

New skills required. Many regulators already lack the core skills required to regulate efficiently, such as actuarial skills for insurance-sector regulators. The fact that innovations are most commonly based on new technologies place additional skills requirements on regulators. Regulators who do not understand the implications of new technologies (like distributed ledger technology, cryptocurrencies, artificial intelligence [AI] and chatbots) and big data may not be able to craft an appropriate response. The Monetary Authority of Singapore (MAS), for instance, has a particular focus on recruiting for data scientists, and it seconds staff to industry players, foreign regulatory bodies and supranational organisations to help them keep up to date with the latest innovations.

More people required. The implementation of a sandbox requires more supervisory staff, since more people are needed to individually monitor the sandbox firms. For example, the sandboxes implemented by the UK's FCA and the MAS assign dedicated case officers to successful applicants.

More resources required. Regulators require additional resources to employ more people, but even interventions that do not require as much human capacity (such as innovation hubs) may need additional resources to implement. For instance, MAS assigned $225 million over a period of five years "to provide support for the creation of a vibrant ecosystem for innovation" via the Financial Sector Technology and Innovation (FSTI) scheme (MAS, 2017). Similarly, regulators supporting advice units, like FCA's Innovation Hub, supporting training initiatives or facilitating collaboration would require additional funding.

Regulators are increasingly looking to technological innovation to help overcome capacity constraints (see Box 7).

Box 7: Technology in regulation

Apart from leading to new or improved product offerings and business models, innovation can also support providers' ability to comply with regulation and regulators' ability to monitor market players. Technology may therefore play an increasingly important role in enabling regulators to do more with fewer resources, potentially helping to alleviate capacity constraints.

Regtech is typically defined as the use of new technologies to solve regulatory and compliance requirements more effectively and efficiently (IIF, 2015). Regtech could lead to efficiency gains for FSPs (thereby reducing the costs and barriers of compliance) and more effective compliance by financial institutions, easing the burden on regulators (IIF, 2016). The FCA has been particularly proactive in supporting the development of regtech (FCA, 2017).

A second role for technology in regulation is technology employed by the regulators themselves to more efficiently and effectively monitor the firms and markets under their authority. The Bangko Sentral ng Pilipinas (BSP), for example, has partnered with R²A[23] to develop an Application Programming Interface (API), and back-office reporting and visualisation application to:

- Allow financial institutions to submit data digitally and automatically to the financial authority
- Increase the volume, granularity and frequency – and improve the quality – of data submitted to the central bank
- Enable BSP staff to improve data validation and analysis, and generate customised reports for supervisory and policy development purposes

Improving data quality and access, and developing new tools for data visualisation and analysis, will help the BSP to implement a risk-based supervisory approach that reduces compliance costs and promotes financial inclusion while ensuring financial stability and integrity. Moreover, the BSP will be able to capture crisper insights on the Filipino financial sector that will be used to develop policies such as the financial inclusion strategy (R²A, 2017).

23 The RegTech for Regulators Accelerator (R²A) partners with leading financial sector authorities to pioneer the next generation of tools and techniques for market supervision and policy analysis.

6.3.

Relevance to actual market challenges

To achieve the objectives of a sandbox approach, the tools implemented need to address the actual regulatory barriers faced by innovators. This means that if the primary regulatory challenges fall beyond the mandate of the financial regulator in question, a sandbox will be less effective in encouraging innovation. Data protection laws, for instance, rarely fall within the mandate of financial services regulators yet are often among the most significant barriers to start-ups and fintechs. For example, Article 16 ("Protection of Subscribers Privacy") of the Regulations Governing Telecom Network Security in Rwanda[24], stipulates that "any licensee shall ensure that… subscriber's information [is] not transferred, stored or processed outside of the Republic of Rwanda". This prohibition of the transmission of subscribers' information creates a substantial challenge for all financial providers that want to use cloud-based services to store and analyse their consumer data. Yet, this provision falls entirely within the mandate of the Rwanda Utilities Regulatory Authority (RURA) and hence beyond the scope of any financial regulator to waive or reduce for innovators.

Consultation with providers is key to understanding barriers. To design interventions that meet actual challenges, regulators need to engage and consult with market players to understand their primary challenges. Opening the channels of communication between regulators and providers (current and potential) has the added benefit of reducing firms' regulatory uncertainty, even in the absence of extensive regulatory coordination.

> "To design interventions that meet actual challenges, regulators need to engage and consult with market players to understand their primary challenges."

24 Regulations No 001/R/TD-ICS/RURA/016 OF 06/05/2016 Governing Telecom Network Security in Rwanda (Available at: http://www.rura.rw/fileadmin/board_decision/Regulations_Governing__Telecom_Network_Security.pdf).

7 Conclusion

From grain loans in Mesopotamia to insurance provision based on artificial intelligence (AI), innovative developments in the financial sector continue to influence the lives of people across the world. All indications are that the pace of innovation will increase exponentially, challenging conventional regulatory concepts, frameworks and systems. How do regulators respond?

Sandbox has merit, but is not a silver bullet. This note outlined the sandbox approach as an example of an overarching approach to regulating for innovation, the design and nature of which differ across different contexts. Based on a desktop review and 18 interviews across 10 jurisdictions, it is clear that the sandbox approach has considerable merit. As discussed in Section 3, it allows innovators to enter the market safely, reduces regulatory uncertainty and enables regulators to learn how to regulate new innovations. Yet, the question of how regulators should be regulating for innovation cannot simply be answered with "implement a sandbox". The decision path in Section 5 indicates that only regulators that have the mandate and willingness to encourage innovative developments not already accommodated within the existing regulatory framework, and that have the discretion to address innovation are in a position to consider implementing a sandbox approach. Moreover, capacity, coordination and relevance to the regulatory barriers faced by firms in the market are all key determinants of the viability of a sandbox or similar approach.

A decision tool. The purpose of this note is not to advocate for a sandbox in all instances or to provide a step-by-step guide on how to regulate specific innovations. Rather, it is to highlight the preconditions, considerations and tools that are relevant in the face of innovation. Navigating the steps of the decision path in a deliberate way, while being clear about the objectives and contextual realities, allows regulators to choose a pathway to effectively regulate for responsible innovation, given their unique context.

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About Cenfri

The Centre for Financial Regulation & Inclusion (Cenfri) is a global think tank and non-profit enterprise that bridges the gap between insights and impact in the financial sector. Cenfri's people are driven by a vision of a world where all people live their financial lives optimally to enhance welfare and grow the economy. Its core focus is on generating insights that can inform policymakers, market players and donors seeking to unlock development outcomes through inclusive financial services and the financial sector more broadly.

About FSD Africa

FSD Africa is a non-profit company that aims to increase prosperity, create jobs and reduce poverty by bringing about a transformation in financial markets in sub-Saharan Africa (SSA) and in the economies they serve. It provides know-how and capital to champions of change whose ideas, influence and actions will make finance more useful to African businesses and households. It is funded by the UK Aid from the UK Government. FSD Africa also provides technical and operational support to a family of 10 financial market development agencies or "FSDs" across SSA called the FSD Network.