The Use of Innovation Facilitators in Growth and Emerging Markets

Final Report

The Growth and Emerging Markets Committee
OF THE
INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS

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Executive Summary

In recent years, financial regulators have adopted various initiatives to facilitate financial innovation. The emergence of Financial Technologies (FinTech) has the potential to improve outcomes for investors and consumers of financial services by, amongst others, expanding choice and lowering prices, fees, and commissions, reducing transaction costs, improving transparency in products and markets, and increasing financial inclusion. The use of financial technology can also help to solve complex regulatory problems, including using Regulatory Technology (RegTech) and Supervisory Technology (SupTech) for enhancing risk management, compliance, and supervision. However, FinTech also creates new challenges for financial regulators.

Indeed, many new and emerging participants in the innovation of the financial services landscape are non-financial, non-regulated persons (individuals or entities), thus opening a debate on whether their products and services should be brought under regulatory scrutiny or whether those products and services could be regulated under the current legal and regulatory framework. Hence, regulators need to be innovative and review the perimeter of regulation or adapt the existing regulations and supervisory tools for those products and services. New ways of cooperation should also be forged among a wider range of authorities (including with non-financial authorities, such as telecommunications agencies, cyber-security public agencies, data protection public agencies, etc.) in addition to cross-border cooperation for proper oversight of those products and services.

The International Organization of Securities Commissions (IOSCO) has been working on different angles of financial technologies, including through the *Research Report on Financial Technologies*[1] (the "IOSCO FinTech Report") as well as other reports and statements covering initial coin offerings, crypto assets, crypto assets trading platforms, stablecoins, and artificial intelligence and machine learning.[2]

Notably, the IOSCO FinTech Report, to which the Growth and Emerging Markets Committee (GEMC) contributed, highlights the increasingly important synergy between FinTech and securities market regulation and describes the impact FinTech has on investors and financial services. It also highlights the possibility that FinTech may have a greater impact on emerging markets due to their lack of legacy systems, combined with the potential to bring about greater financial inclusion. The report notes that innovation hubs and regulatory sandboxes may provide regulators with additional market intelligence and can constitute a source for understanding potential risks and their mitigating elements. At the same time, innovation hubs

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1 Published in February 2017, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD554.pdf

2 *IOSCO Board Communication on Concerns Related to Initial Coin Offerings (ICOs)*, January 2018, https://www.iosco.org/news/pdf/IOSCONEWS485.pdf; the *Statement on IOSCO study of emerging global stablecoin proposals*, November 2019, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD643.pdf; the report on *Issues, Risks and Regulatory Considerations Relating to Crypto-Asset Trading Platforms*, February 2020, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD649.pdf; the report on *Investor Education on Crypto-Assets*, December 2020, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD668.pdf; the report on *The use of artificial intelligence and machine learning by market intermediaries and asset managers*, September 2021, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD684.pdf; the report on *Global Stablecoin Initiatives*, March 2020, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD650.pdf; and the CPMI-IOSCO *Consultation Report on the Application of the Principles for Financial Market Infrastructures to Stablecoin Arrangements*, October 2021, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD685.pdf.

and regulatory sandboxes provide a channel for the industry and innovators to establish fruitful relationships with regulators, thus facilitating a context for a mutual understanding.

In 2019, the GEMC has identified FinTech and financial innovation as key priorities for emerging markets. The GEMC has established a FinTech Working Group (FINWG) to analyse the use of innovation facilitators (IFs) in these markets. The FINWG is chaired by CNBV Mexico, and its members include AFSA International Financial Centre (AIFC, Kazakhstan), FRA Egypt, CMA Kuwait, SEC Philippines, PFSA Poland, CMA Saudi Arabia, SEC Thailand, and SCA United Arab Emirates (UAE), with the support of the IOSCO General Secretariat.

The FINWG has prepared this Report based on a fact-finding exercise conducted among GEMC members through a survey (the "GEMC IFs Survey"). Forty-nine GEMC member jurisdictions (the "Participating Jurisdictions"), from all four IOSCO Regional Committees,[3] responded to the GEMC IFs Survey (see the list of Participating Jurisdictions in Annex 2), thus providing a global perspective of IFs in emerging markets.

The Report was prepared during the COVID-19 pandemic, which reinforced the use of technology around the globe, notably due to social distancing restrictions. The World Bank in its report of April 2021 has also observed that "*The COVID-19 pandemic has further accelerated the widespread transition of consumers to digital financial services and fintech, highlighting their significant benefits while also demonstrating how risks to consumers can increase in times of crisis and economic stress*."[4] This Report also discusses the impact of COVID-19 on IFs in Chapter 2.

The Report contains five chapters and covers three types of IFs: innovation hubs, regulatory sandboxes, and regulatory accelerators. Chapter 1 covers definitions and the risks and opportunities posed by IFs. Chapter 2 presents the global trends in relation to IFs and an overview of emerging markets' regulatory initiatives, while Chapter 3 presents some examples of the current practices in advanced markets. Chapter 4 discusses the role of conducting a policy assessment in developing IFs. Finally, Chapter 5 sets out four key recommendations to assist emerging markets in developing initiatives related to IFs in their jurisdictions.

The Report found that a regulatory response to financial innovation requires a balanced approach between the potential opportunities of innovation against the risks for investors, the integrity of markets and the stability of the financial system. The main challenge for the relevant authorities[5] refers to the development of new methods of identifying, monitoring, and addressing the emerging risks in the financial system. The use of technologies presents new risks and alters traditional risks inherent to the financial sector. To respond to this technological innovation, the relevant authorities should consider innovative regulatory approaches, notably by setting up IFs, which is one way to facilitate the understanding of market trends, assess the

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3 Africa / Middle East Regional Committee (AMERC), Asia-Pacific Regional Committee (APRC), European Regional Committee (ERC), and Inter-American Regional Committee (IARC).

4 https://openknowledge.worldbank.org/bitstream/handle/10986/35699/Consumer-Risks-in-Fintech-New-Manifestations-of-Consumer-Risks-and-Emerging-Regulatory-Approaches-Policy-Research-Paper.pdf?sequence=1&isAllowed=y

5 Securities regulators, in cooperation with other financial and non-financial sector authorities, as appropriate

need for regulatory changes or adaptation, and set a strategy for the sound development of the market, with due regard to investor protection and financial stability.

In doing so, the relevant authorities need to clearly set out the objectives of the IFs which cover, amongst others, learning about market developments and solutions, addressing regulatory barriers to beneficial innovation, and promoting competition and/or innovation. These objectives should be set in a manner that serves the public interest and does not bypass any legal and regulatory requirements, while ensuring investor protection, market integrity and the stability of the financial system. The proposed innovation must bring new or emerging technologies or use existing technology in an innovative fashion. Test scenarios, expected outcomes, and target audience should be properly defined without jeopardizing the soundness of the industry and protecting the interests of investors. Any perceived risk should be properly understood and mitigated accordingly. The relevant authorities should engage with key stakeholders, industry associations and other relevant authorities to keep track of their progress and take any policy measures, as necessary.

A jurisdiction's environment and characteristics remain among the most important considerations when assessing the establisment of an IF. Before a jurisdiction decides to set up one or another type of IF, policy makers and securities regulators should objectively review the existing legal and regulatory framework, the stakeholder ecosystem, including the private sector and other regulatory or supervisory bodies, the capacity and resources available, as well as the market conditions, including the competition frameworks and the overall maturity of the FinTech industry in their jurisdiction. This assessment will help policy makers and securities regulators recognise the key objectives and priorities, the feasibility of setting up certain types of IFs and the suitability of these decisions given the overall policy objectives and the jurisdiction's environment and characteristics.

Relevant authorities should consider the steps laid out in the decision tree presented in Chapter 4 before setting up any IFs. In doing so, the relevant authorities should consider their objectives, scope of regulatory options and available resources, as well as the characteristics of the ecosystem in which financial innovation is taking place. A summary of the key recommendations set out in Chapter 5 is presented below:

- **Recommendation 1**. The relevant authorities should develop effective frameworks to support financial innovation, including IFs. Prior to the establishment of IFs, the relevant authorities should undertake a comprehensive analysis and assessment to ensure that the functions, scope, and operational structure of the IFs are designed in view of the local market conditions and are in accordance with the overall policy objectives. The relevant authorities should consider the potential impact IFs could have on investor protection, market integrity and financial stability.
- **Recommendation 2.** The objectives and functions of IFs should be clearly defined and should be made public. The relevant authorities should have in place innovation support functions with adequate resources according to the scope and objectives of the IFs. Good governance and accountability should be part of the design of the innovation facilitator.
- **Recommendation 3**. The scope of eligible entities and the criteria for application and selection should be clearly defined, transparent, and made public.
- **Recommendation 4**. The relevant authorities should have in place mechanisms for cooperation and exchange of information with both local and foreign relevant authorities to facilitate a holistic approach and knowledge regarding issues of a cross-cutting nature or issues that may fall outside their statutory responsibility.

Chapter 1: Definition, Risks, and Opportunities

1.1 Definition of innovation facilitators

Currently, there is not a globally accepted definition of IFs. Hence, the development of an agreed terminology and taxonomy for IFs becomes necessary to achieve some degree of convergence in relation to regulatory approaches, supervisory tools and/or cooperation arrangements.

For example, the Cambridge Centre for Alternative Finance (CCAF), the World Bank and the World Economic Forum (WEF) have proposed a "working taxonomy" which "*brings together a coherent conceptualization of FinTech activities, whilst appreciating the sectors diversity and differentiated business models. The working taxonomy includes thirteen discrete primary FinTech verticals and 103 sub-verticals*."[6]

A different taxonomy has been proposed by the Financial Stability Institute (FSI), based on a "Fintech tree" that "*distinguishes three categories: fintech activities, enabling technologies and policy enablers. Fintech activities (e.g., digital banking or robo-advice) can take various forms and may be performed in different sectors of the financial industry. Enabling technologies (e.g., cloud computing or artificial intelligence) are those that make innovation possible in the provision of financial services and, as such, form the backbone of fintech activities. Policy enablers refer to public policy measures and initiatives (e.g., digital ID systems [or innovation hubs, regulatory sandboxes, and innovation accelerators] that support the development of fintech activities and the use of enabling technologies.*" [7]

For the purposes of this Report, "innovation facilitators" (IFs) refers to innovation hubs, regulatory sandboxes, and regulatory accelerators. Also, the following definitions are used in this Report:

Financial Technologies or "FinTech" refer to a variety of innovative business models and emerging technologies that have the potential to transform the financial services industry. FinTech could also be defined as technology-enabled innovation in financial services that could result in new business models, applications, processes, or products with an associated material effect on the provision of financial services.

Innovation Hubs (IH) refer to places where FinTech innovators can effectively engage in discussions and experience information sharing with each other and with the financial regulatory authority. Notably, innovation hubs provide a dedicated point of contact for firms to raise enquiries with regulators on FinTech-related issues and to seek non-binding guidance on the conformity of innovative financial products, financial services or business models with licensing or registration requirements and regulatory and supervisory expectations.

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6 See CCAF, World Bank and WEF, The Global Covid-19 FinTech Market Rapid Assessment Report, 2020, https://www3.weforum.org/docs/WEF_The_Global_Covid19_FinTech_Market_Rapid_Assessment_Study_2020.pdf

7 See FSI, *Policy responses to fintech: a cross-country overview*, FSI Insights on policy implementation No. 23, January 2020, page 41, https://www.bis.org/fsi/publ/insights23.pdf

Regulatory Sandboxes (RS) are frameworks set up by a financial sector regulator to allow small scale, live testing of innovations by private firms in a controlled environment (operating under a special exemption, allowance, or other limited, time-bound exception) under the regulator's supervision. Regulatory sandboxes may also apply the use of certain, limited (in time and scope) regulatory exceptions or derogations provided by the regulator.

Regulatory Accelerators (RA) are programmes enabling partnership arrangements between innovators or FinTech firms and government authorities to speed up development and innovation. The RA experience is a process of intense, rapid, and immersive education aimed at accelerating the life cycle of young innovative companies, compressing years' worth of learning-by-doing into just a few months. RA commonly function by developing specific "use cases" that are characteristic of challenges faced by the authority, and the private sector is invited to address these use cases through the use of innovative and emerging technologies.

In this context, IFs involve a deeper and specialised contact between the regulator and the industry as well as a specific form of supervision of the entities and their activities. As explained by the European Supervisory Authorities (ESAs), "*as a matter of routine, competent authorities respond to queries relating to licensing and other regulatory requirements or supervisory expectations whereas innovation hubs establish a clear point of contact to raise the visibility of the enquiry function to firms that may not have a high degree of familiarity with the competent authorities. Innovation hubs are also supported by specialist resources relating to innovative propositions that create efficiencies in responding to enquiries. Similarly, competent authorities can adopt more intensive supervision to scrutinise particular activities of a firm in order to gain a closer insight into the opportunities and risks presented and to develop an appropriate regulatory or supervisory response through the proportionate application of supervisory powers and tools. However, within the schemes of regulatory sandboxes, again, specialist resources are made available enabling the relevant competent authorities to devise specific testing parameters, scrutinise the test and develop lessons learned from the test outcome from a specialist perspective. These lessons learned may be applied for the benefit of the competent authorities and industry*."[8]

1.2 Risks and Opportunities

IFs, as any innovative disruption, come with both opportunities and risks generated by their design and operational parameters. However, at this point in time there are no decisive conclusions on whether, and to what extent, such opportunities and risks would materialise, notably due to the relatively short time span in which those initiatives have been operational.

In terms of opportunities, IFs provide a structured environment for engagement and exchange of knowledge between regulators and innovative companies, foster a better understanding of emerging technologies, enhance regulatory certainty by providing guidance to the innovative companies on the applicable regulatory requirements, as well as a safe space for testing innovative products, services or business models in a controlled environment, while preserving investor protection and the integrity of the market.

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8 See European Supervisory Authorities, *FinTech: Regulatory sandboxes and innovation hubs*, January 2019, https://www.esma.europa.eu/sites/default/files/library/jc_2018_74_joint_report_on_regulatory_sandboxes_and_innovation_hubs.pdf

IFs can also lower barriers for new participants to enter the market, stimulate competition between different providers of products and services, foster financial inclusion and expand the products and services available to consumers and investors.

The European Commission has pointed out some of the main opportunities brought by IFs both for firms and supervisors: "*For firms, innovation facilitators can enable access to dedicated supervisory resources with specialist expertise in innovative use of technology and support them in navigating the licencing/wider regulatory framework. For supervisors, innovation facilitators can enhance visibility of technology-related developments. This enhanced knowledge can translate into a better understanding of opportunities and risks presented by innovations, which is helpful in addressing the inadvertent practical barriers to the goal of technological neutrality.*"[9]

An overview of the potential benefits to regulators, innovators and consumers deriving from IFs is presented in Figure 1 below.

Figure 1 - Potential benefits - Overview

Regulator	Innovators	Consumers
• Inform long term policy making through learning and experimentation. • Signal commitment to innovation and learning. • Promote communication and engagement with market participants. • Update regulations that may prohibit beneficial innovation.	• Reduce time-to-market by streamlining the authorisation process. • Reduce regulatory uncertainty, such as that new technologies and business models will be prohibited. • Gather feedback on regulatory requirements and risks. • Improve access to capital.	• Promote introduction of new and potentially safer products. • Increase access to financial products and services.

Source: European Parliament (Committee on Economic and Monetary Affairs).[10]

There are also some risks associated with IFs, such as potential regulatory arbitrage in those cases in which a regulator, in its attempt to embrace new innovative entities or business models, may relax its regulatory and supervisory expectations. In this sense, the Committee on Economic and Monetary Affairs (ECON) has pointed out that a "*concern about the use of innovation facilitators is the potential for regulatory arbitrage. As jurisdictions compete for a share in the "FinTech pie" and the potential overall economic benefits it can bring, the concern is that some regulators are opting for a 'race-to-the bottom' in a bid to attract start-*

[9] See European Commission (Expert Group on Regulatory Obstacles to Financial Innovation, ROFIEG), *30 Recommendations on Regulation, innovation and finance*, December 2019, available at: https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/191113-report-expert-group-regulatory-obstacles-financial-innovation_en.pdf

[10] *Regulatory Sandboxes and Innovation Hubs for FinTech. Impact on innovation, financial stability and supervisory convergence*, September 2020, page 24, available at: https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652752/IPOL_STU(2020)652752_EN.pdf

ups and investors. A 'race-to-the bottom' style competition between regulators, in the longer run, could lead to compromises on consumer protection and financial stability."[11]

Likewise, there is a risk of a negative impact on the level playing field for potential participants in the IFs, by having vague eligibility criteria or a lack of transparency in the selection processes of applicants. On this potential risk, the ECON has pointed out that "*Equal access opportunities to innovation facilitators are important to preserve the level playing field. Selection-based procedures for access to an innovation facilitator hold risks of a negative impact on the level playing field, raise competition concerns, and create potential for sub-optimal selection outcomes. Therefore, if eligibility criteria are part of the design of an innovation facilitator, they should be clearly defined and transparent. Moreover, having a robust framework to ensure that the eligibility criteria are applied consistently and after a thorough vetting process is essential in the context of avoiding regulatory arbitrage and maintaining a level playing field."*[12]

Legal risk may also be a factor to consider, given that "*firms could potentially mistake indicative guidance [provided through an innovation facilitator] from the competent authorities as being binding or final, resulting in the risk of legal challenges against the competent authority if the authority were to shift its view (e.g., in the period prior to a firm submitting an application for authorisation and in the context of the consideration of an application for authorisation).*"[13] Moreover, the need to design adequate and suitable rules or regulations for the IFs in a short period of time could put additional pressure to regulators.

There could also be risks to investor protection where innovation is prioritised without the proper safeguards to investors. In some cases, investors may perceive participation in a regulatory sandbox, for example, as a quality label given to the product or service by the regulator. There is also a potential reputational risk for regulators in case an innovative product or service would eventually create prejudice to investors or to the integrity of the markets.

For some integrated markets, but potentially also for the global markets, there is a risk of market fragmentation: "*In the context of the [EU] Single Market, innovation facilitators bear a risk of market fragmentation. For example, if the operational parameters for testing in a regulatory sandbox (i.e. eligibility criteria, regulatory relief and testing parameters) diverge significantly in different countries, products successfully developed and rolled-out in one Member State will face challenges to scale up across borders. Similarly, guidance provided within the innovation hub in one Member State might diverge in other Member States, which can create hurdles to the rolling out of products or business models developed in one Member State across borders. Moreover, given the important role that innovation facilitators play in enhancing supervisory knowledge, which informs the need to update and adjust existing supervisory practices, on the longer run, this could lead to the development of diverging supervisory practices within the Single Market*." [14]

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[11] ECON, *Regulatory Sandboxes and Innovation Hubs for FinTech. Impact on innovation, financial stability and supervisory convergence,* Op. cit., page 24.

[12] ECON, *Regulatory Sandboxes and Innovation Hubs for FinTech. Impact on innovation, financial stability and supervisory convergence,* Op. cit., page 9.

[13] European Supervisory Authorities, *FinTech: Regulatory sandboxes and innovation hubs*, Op. cit. page 35.

[14] ECON, *Regulatory Sandboxes and Innovation Hubs for FinTech. Impact on innovation, financial stability and supervisory convergence,* Op. cit., page 25.

The International Monetary Fund (IMF) has also indicated, in a report published in July 2020,[15] that technology is changing the landscape of the financial sector and is increasing access to financial services in profound ways. However, the IMF report also suggests that policy makers should consider cybersecurity risks which could jeopardize trust. Policymakers also need to consider novel approaches to ensure high-quality supervision and regulation, support the safe use of innovative technologies, while ensuring that regulation remain proportionate to the risks.

Regulators should therefore prepare themselves and take the necessary measures to mitigate the potential risks brought by IFs while taking advantage of their potential benefits and opportunities.

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15 IMF, *The Promise of Fintech: Financial Inclusion in the Post COVID-19 Era*, July 2020, page 39, https://www.imf.org/-/media/Files/Publications/DP/2020/English/PFFIEA.ashx

Chapter 2: Global trends and regulatory initiatives in emerging markets

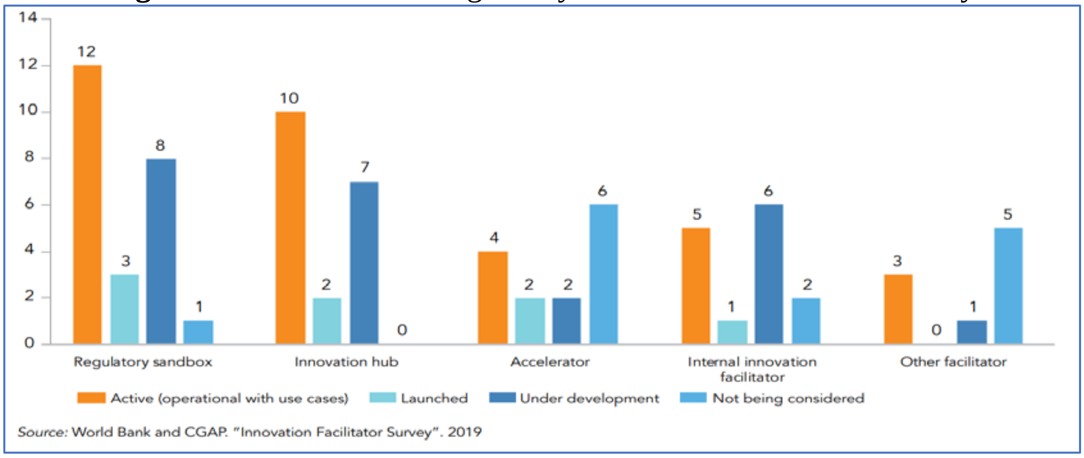
2.1 Global trends and Impact of COVID-19

In recent years, regulators have put in place different initiatives to develop IFs in their jurisdictions. According to a World Bank report on *How Regulators Respond to Fintech. Evaluating the Different Approaches - Sandboxes and Beyond*, regulatory sandboxes and innovation hubs are the two forms of IFs most used by regulators, followed by accelerators.[16]

In another report, the World Bank also observes that "*Regulatory sandboxes have become increasingly popular with policymakers around the world, with just under a quarter of respondents highlighting that they have one in place. Furthermore, one in ten regulators are planning to launch a sandbox in the next 12 months, with a further 14% currently considering whether to do the same.*"[17]

Figure 2 below presents an overview of the IFs globally.

Figure 2 - Prevalence of Regulatory Innovation Initiatives Globally



The Inter-American Development Bank (IADB) refers that the development of IFs is relatively recent. For example, in 2007 the Dutch Authority for the Financial Markets was the first to launch an innovation hub (called "innovation room"), followed by the Commission de Surveillance du Secteur Financier (CSSF) of Luxembourg in 2014. The first regulatory sandbox (referred to as "project catalyst") was created in 2012 by the United States Consumer Financial Protection Bureau. In 2014, the Financial Conduct Authority (FCA) of the United Kingdom launched a project innovate with an innovation hub and in 2016, the FCA introduced a new modality called regulatory sandbox.[18]

Regulators from both developed and emerging markets are promoting those initiatives despite the challenges posed by the COVID-19 pandemic. In particular, financial inclusion has gained

16 http://documents1.worldbank.org/curated/en/579101587660589857/pdf/How-Regulators-Respond-To-FinTech-Evaluating-the-Different-Approaches-Sandboxes-and-Beyond.pdf

17 Regulating Alternative Finance: Results from a Global Regulator Survey, 2019, page 67, https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2019-11-ccaf-regulating-alternative-finance-report.pdf

18 https://publications.iadb.org/publications/spanish/document/Sandboxes-regulatorios-hubs-de-innovacion-y-mas-innovaciones-regulatorias-en-America-Latina-y-el-Caribe-Una-aproximacion.pdf

significant importance in emerging markets through the global pandemic and FinTech has played a key role for small and medium-sized enterprises (SMEs). Indeed, according to the International Financial Corporation (IFC), "*Before COVID-19, less than 15 percent of SMEs in emerging economies had access to the resources they needed to grow and create wealth. The unmet financing need of SMEs in developing countries is estimated at $5.2 trillion every year. But during the pandemic, access to financing from traditional banks has dried up even more, which has contributed to slowing economic growth. In response, SMEs have turned to financial technology, or "fintech," as one way to meet their financing needs. The term originally referred to the back-end systems of established financial institutions, but now includes a myriad of sectors that seek to improve the delivery and use of online financial services.*" [19]

A study published in 2020 by the World Bank and CCAF indicates that during the COVID-19 pandemic "*The majority of respondent regulators have either accelerated existing regulatory innovation initiatives or introduced new initiatives. For example, 72% of respondents have either accelerated or introduced initiatives on digital infrastructure, 58% have either accelerated or introduced initiatives regarding RegTech/SupTech, and 56% did so in regard to innovation offices. Regulators from emerging market and developing economies are more likely to have developed new initiatives or accelerated planned initiatives. […] in light of Covid-19.*" [20] In the case of innovation hubs, the accelerated planned initiatives were concentrated in the sub-Saharan regions, followed by Middle East and North Africa, Latin America and the Caribbean, and no cancellation of an innovation initiative during the pandemic has been observed.[21]

Notwithstanding the above, developed jurisdictions also continued to make progress in this area. For example, the FCA has opened the Cohort 7 of its Regulatory Sandbox and a new Digital Sandbox initiative during the pandemic with the aim of supporting products and solutions that will assist consumers and firms impacted by the COVID-19 pandemic.[22] Moreover, no significant changes on the functioning of IFs have been observed during the pandemic. For example, the European Forum for Innovation Facilitators (EFIF) reported at its April 2020 meeting that "*despite the impact of the COVID-19 crisis, the innovation hubs remain active and open to engagement with the FinTech sector. As it is still difficult to have physical meetings to discuss enquiries received via innovation hubs, some members noted that they are facilitating virtual meetings instead*."[23]
Likewise, emerging markets managed to continue the operation of their IFs during the pandemic. For example, the Securities and Exchange Commission (SEC) Pakistan extended

[19] See IFC Insights, *Need financing because of the pandemic? SMEs turn to fintech companies*, https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/insights/fintech-financing-smes

[20] World Bank, CCAF and WEF, *The Global Covid-19 FinTech Regulatory Rapid Assessment Report*, Op. cit., pages 15 and 55-56, https://www.jbs.cam.ac.uk/wp-content/uploads/2020/10/2020-ccaf-report-fintech-regulatory-rapid-assessment.pdf

[21] World Bank, CCAF and WEF, *The Global Covid-19 FinTech Regulatory Rapid Assessment Report*, Op. cit., page 53.

[22] https://www.fca.org.uk/firms/regulatory-sandbox/regulatory-sandbox-cohort-7

[23] EFIF, *Summary of the July 2020 meeting*, https://esas-joint-committee.europa.eu/Publications/efif/EFIF%20meeting%20(July%202020)%20-%20minutes.pdf

the timeline for applicants to submit applications to the IF. The Brunei Darussalam Central Bank (BDCB) extended the testing period for the sandbox participants in the regulatory sandbox. However, the Central Bank of Bahrain (CBB) explained that although its regulatory sandbox has been operating as normal despite the COVID-19 pandemic, some participants undergoing the testing period have slightly been affected given that some of them have not been able to reach out to volunteers to test their products, or banks that they wanted to partner with had shifted their priorities to combatting the effects of the COVID-19.

Notably, notwithstanding the pandemic, some emerging markets have managed to launch new IFs. For example, the Securities and Exchange Board of India (SEBI) launched a regulatory sandbox during the lockdown period in June 2020, with no issues encountered in terms of its operations. Other IFs were launched in Malta, Nigeria, Pakistan, Qatar, and South Africa in 2020, and in Panama and Zambia in 2021.

In this context, it would be reasonable to expect that IFs, in both developed and emerging jurisdictions, continue to develop and expand in number post-COVID-19.

41 out of the 49 Participating Jurisdictions have established some form of IFs. Most of these initiatives have been set up in the past five years, including 2020 and 2021, as presented in Figure 3 below.

Figure 3 – Launch of the IFs in Participating Jurisdictions

IOSCO Region	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
AMERC	Mauritius	Bahrain, DIFC (Dubai), Saudi Arabia	Iran, UAE	Angola, Egypt	Nigeria, Qatar, South Africa	Zambia
APRC		Brunei, China, Thailand	Chinese Taipei, Indonesia	Korea	India, Pakistan	
ERC	Estonia, Lithuania	Poland	Astana, Cyprus, Hungary, Russia	Croatia, Slovak Republic	Malta	
IARC	Brazil		Colombia, Mexico	Argentina	Uruguay	Panama

Source: GEMC IFs Survey.

The Participating Jurisdictions that have established an IF have reported that in most of the cases (71.4 percent) the securities regulator has led these initiatives. In other cases, the initiative to establish an IF has come from either the national government, or jointly with the regulator. In some limited cases, IFs have been set up by a joint effort between the regulator, government, and the private sector. Notably, in 21 Participating Jurisdictions, there are more than one type of IF. Figure 4 below provides a quick mapping of the IFs established in emerging markets.

Figure 4 - IFs established in Participating Jurisdictions
Innovation hubs (IH); Regulatory sandboxes (RS); Regulatory Accelerators (RA); Other.

AMERC		APRC		ERC		IARC	
Angola	RS	Bangladesh	No	AIFC (Kazakhstan)	IH, RS, RA	Argentina	IH, Other
Bahrain	IH, RS, RA	Brunei	IH, RS	Croatia	IH	Bermuda	IH, RS
DIFC, Dubai	RS	China	IH	Cyprus	IH	Brazil	IH, RS, RA
Egypt	IH, RS, Other	Chinese Taipei	IH, RS, RA	Czech Republic	No	Colombia	IH, RS, RA
Ghana	Other	India	RS, Other	Estonia	IH	Dominican Republic	IH
Iran	RS, Other	Indonesia	IH, RS, RA	Hungary	IH, RS	Mexico	RS
Jordan	Other	Korea	IH, RS, RA	Lithuania	IH, RS, RA	Panama	IH
Kuwait	No	Nepal	RA	Malta	IH, RS	Paraguay	IH
Mauritius	RS	Pakistan	IH, RS	Poland	IH	Peru	RS
Morocco	No	Thailand	RS	Russia	RS	Uruguay	IH, Other
Nigeria	Other			Serbia	No		
Qatar	IH, RS, RA			Slovak Republic	IH		
Saudi Arabia	IH, RS, RA						
South Africa	IH, RS, RA						
Tunisia	No						
United Arab Emirates	RS						
Zambia	RS						

Source: GEMC IFs Survey.

As illustrated in Figure 5 and Figure 6 below, IH and RS are the two forms of IFs which are most used by the Participation Jurisdictions, followed by RA. Figure 6, which maps the IFs by region, indicates that IH are most common in Europe and the Inter-American regions, while RS are most common in the Africa/Middle East and Asia Pacific regions. A non-exhaustive list of the IFs established in Participating Jurisdictions is provided in Annex 4.

Figure 5 - Innovation Facilitators in the 49 Participating Jurisdictions

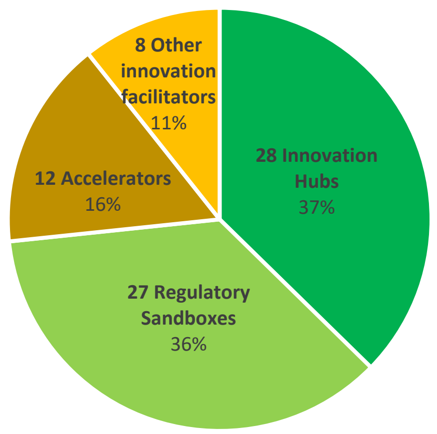
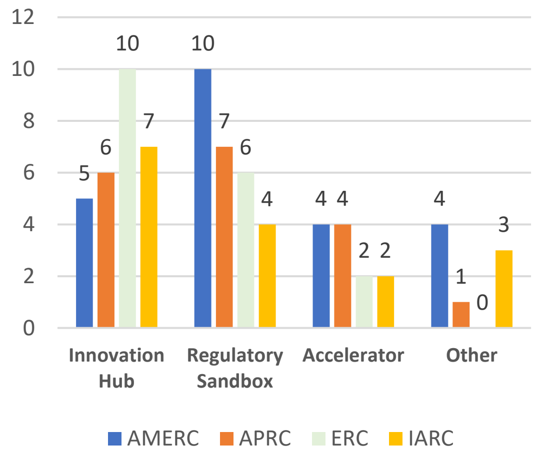


Figure 6 - Innovation facilitators of Participating Jurisdictions by region



Source: GEMC IFs Survey.

2.2 Policy considerations

Irrespective of the type of IFs established by the Participating Jurisdictions, the main policy objectives for adopting the IFs are to enable an ecosystem that supports the introduction of novel, more efficient, less costly products, and services, as well as to incentivise competition and, in many cases, enhance financial inclusion.

Figure 7 below provides an overview of the policy objectives which have been considered by the Participating Jurisdictions when establishing an IF.[24]

Figure 7 - Regulators' Policy objectives in setting up IFs
• Avoiding regulatory arbitrage, reduce market concentration and foster increased competition. • Engaging in a dialogue with innovative companies, learn more about their processes, and test new products and services in the market. • Keeping pace with the development and application of novel technologies in capital markets, while balancing innovation, investor protection, and financial stability. • Understanding better and managing potential risks deriving from financial innovation. • Facilitating the introduction, in a controlled environment, of innovative projects for which there is no regulatory framework so as to lessen regulatory uncertainty. • Improving the efficiency of the market by reducing costs and time for supervised entities. • Helping reduce the time needed for new products and services to enter the market. • Supporting financial inclusion, financial education and FinTech literacy for companies, investors, and other economic stakeholders.

Source: GEMC IFs Survey

In addition to the overall policy objectives, the examples below describe the various practical considerations taken by Participating Jurisdictions when setting up an IF.

24 According to ECON, "*Clear and transparent objectives not only help manage market participants' expectations, but also provide a basis for an internal review of the effectiveness of the facilitator and serve for the purposes of accountability*." See ECON, *Regulatory Sandboxes and Innovation Hubs for FinTech. Impact on innovation, financial stability and supervisory convergence*, Op. cit., page 29.

2.2.1 Scope of innovation facilitators

The scope of the IFs may be shaped and influenced by the mandate of the regulator as well as by the legal and institutional framework of the financial authorities within a jurisdiction. Notably, the Participating Jurisdictions comprise authorities with different scope of competence and mandates. Some of these jurisdictions only regulate and supervise capital markets, while others are integrated supervisors for the entire financial sector or are general departments in Central Banks.

Following discussions by the GEMC, some members have provided additional information indicating that they have established (or are about to establish) some form of IFs. **For example**, in 2020, the Central Bank of Uruguay established an IF ("*Observatorio de Innovacion*");[25] the SEC Philippines established the *PhiliFintech Innovation Office* on 30 July 2021; and in the Dominican Republic, an Innovation Hub was launched on 11 February 2022.[26]

In those jurisdictions with separate sectoral regulators, the scope of the IF would most likely be focused or restricted to the respective sector.

For example, the World Bank refers that "*In Thailand, three different regulators launched regulatory sandboxes: the Bank of Thailand (BOT), the Securities and Exchange Commission (SEC), and the Office of Insurance Commission (OIC). Each sandbox covers a different aspect of the financial system: payments, remote identity verification, and insurance, respectively. The sandboxes, however, differ in approach, eligibility, and mandate. The BOT sandbox focuses on new, "never before-seen" innovations and thus far has focused on quick-response (QR) codes and cross-border payments.*" The SEC Thailand has explained that "*The SEC sandbox allows fintechs to conduct testing of primary market, secondary market and post-trade activities (end to end process) using digital infrastructure with regard to digital system development of securities/derivatives businesses activities*", thus complementing the World Bank report which says that "*the OIC sandbox has enabled insurers, agents, and InsurTech firms to test InsurTech innovations. The sandboxes also complement Thailand's fintech hub, F13 (launched by the Thai fintech association), working together to develop a fintech ecosystem. […] As a result of these multiple initiatives, new regulations and initiatives were introduced for robo-advisory, peer-to-peer (P2P) lending, eKYC, and QR payments.*"[27]

However, there have been cases where the sectoral regulators agree to coordinate in setting up a common cross-sectoral IF or to share information in relation to an IF that has been established

25 https://www.bcu.gub.uy/Acerca-de-BCU/Resoluciones%20de%20Directorio/RD_286_2020.pdf

26 In Tunisia, although the securities regulator (the *Conseil du Marché Financier*) has not launched an IF so far, the Central Bank of Tunisia (BCT) launched, in the first quarter of 2020, a regulatory sandbox aimed at simplifying the development of the FinTech industry in a supervised way and providing a test environment to accompany the experiment of small-scale innovative solutions with real voluntary clients.

27 World Bank, *Global Experiences from Regulatory Sandboxes*, Fintech Note No. 8, November 2020, pages 12-13, https://openknowledge.worldbank.org/bitstream/handle/10986/34789/Global-Experiences-from-Regulatory-Sandboxes.pdf?sequence=1&isAllowed=y

for a specific sector, in view of the cross-sectoral nature of technology-driven financial innovation.

For example, in South Africa, the financial authorities have developed a coordinated effort and have taken a “multi-regulator approach” to IFs by setting up an *Intergovernmental Fintech Working Group* comprising the Financial Sector Conduct Authority (FSCA), the South African Reserve Bank, the Prudential Authority, the Financial Intelligence Centre the National Treasury, the South African Revenue Service, and the National Credit Regulator, thereby reducing opportunities for regulatory arbitrage across the different sectors of the financial system and eliminating the need for potential applicants to contact multiple regulators.

In Angola, after the adoption of a new Financial Law that established the Supervisory Council (integrated by the Central Bank, the Capital Market Commission and the Insurance and Pension Funds Supervision Authority) the authorities are developing studies and policies to coordinate in setting up a common cross-sectoral innovation facilitator.

In deciding to establish an IF, the Participating Jurisdictions have considered various scopes that the prospective IFs could have. Notably, irrespective of the type of IF to be adopted by a regulator, IFs are a means to an end, rather than an end in itself. Indeed, other regulatory tools remain available to promote or support financial innovation, such as public consultation, engagement with academia and stakeholders, and cooperation and collaboration with other local and foreign authorities. Depending on the specific needs of a particular jurisdiction, the regulator could therefore consider the use of various tools that are already available within the existing legal, regulatory, and institutional framework, or make use of new means, such as IFs.

2.2.2 Costs and other resources

For example, in Brunei, the regulator has set up an innovation hub and a regulatory sandbox, but not an accelerator, as in this case the regulator considers that an accelerator would require more resources that the other forms of IFs.

In Cyprus, the regulator decided to establish an innovation hub instead of a regulatory sandbox, as for them a regulatory sandbox would require more resources. However, given the interest that FinTech has gained and the emergence of additional sectors, such as RegTech and SupTech, the establishment of a regulatory sandbox is currently under consideration.

The World Bank has also noted in its report on *Regulating Alternative Finance: Results from a Global Regulator Survey* that “*The largest regulatory sandboxes have been known to require as many as 25 full-time employees, and the operational costs of running a regulatory sandbox can be over one million US dollars*.”[28] Another World Bank report has estimated that “*the resources required to develop and operate a sandbox [vary] considerably, from $25,000 to $1 million ($25,000 to $100,000 in EMDEs)*.”[29]

28 World Bank, *Regulating Alternative Finance: Results from a Global Regulator Survey*, 2019, at https://openknowledge.worldbank.org/bitstream/handle/10986/32592/142764.pdf?sequence=1&isAllowed=y

29 World Bank, *Global Experiences from Regulatory Sandboxes*, op. cit., page 20.

2.2.3 *Characteristics and specific needs of the local market*

For example, in Hungary, the regulator conducted a comprehensive study covering consumers, FinTech start-ups, banks, insurance companies, financial intermediaries, pension funds and investors, whereby it identified a strong demand for an innovation hub and a regulatory sandbox. Therefore, the regulator adopted both forms of IFs.

In Croatia the decision was to establish an innovation hub, considering this option as the more appropriate after taking into account the characteristics of the financial innovation in the jurisdiction.

In Estonia, due the small size of its market, the regulator considered as a best option setting up an individual contact point rather than a regulatory sandbox. However, the regulator is open to other forms of IFs as the local market evolves.

2.2.4 *An incremental approach based on lessons learned*

Some jurisdictions have first set up an innovation hub and afterwards a regulatory sandbox. This is because innovation hubs are easier to establish in some jurisdictions, as they do not require legislative or regulatory change and can be set up under the existing supervisory mandates,[30] while a regulatory sandbox might require a more complex arrangement. Also, the innovation hub could be a first step for some regulators to gain experience and understanding of the trends and developments in the area of technology-driven financial innovation before getting ready to provide a controlled testing environment through a regulatory sandbox. However, the other way around may also be applied by other jurisdictions.

For example, in Poland the regulator started with an innovation development team and gradually built knowledge in the field of financial innovation. The next step was to establish an innovation hub programme through which the regulator is gaining knowledge on FinTech-related issues as well as supporting the establishment of virtual sandboxes in different areas of its financial market.

In Pakistan the regulator has decided to set up a regulatory sandbox as a first step to engage with the market, and as it gains experience the regulator would take a second step to establish a dedicated innovation office.

2.3 Design, operation, and monitoring of innovation facilitators

Most of the Participating Jurisdictions noted that prior to the establishment of IFs, a rigorous feasibility analysis should be carried out to identify the required powers, procedures, and expertise. In carrying out this analysis, the regulators should ensure that IFs are designed appropriately in accordance with local market conditions, including FinTech and innovation developments and that these initiatives take into account the resources available. This analysis may include engaging with stakeholders such as start-up and incumbent firms, industry associations and other authorities.

Should the conclusion of such analysis be the establishment of an IF, this information will support the main decisions about the design and operation of the respective facilitator. For

30 FSI, *Policy responses to fintech: a cross-country overview*, Op. cit., pages 20 and 41.

example, the regulators may consider appropriate to establish a dedicated team or department to manage and monitor the IF, or to rely on existing teams or departments and draw on already available expertise.

Additionally, regulators may consider appropriate to establish various cooperation arrangements with other domestic authorities which will provide a holistic approach about issues of a cross-cutting nature or issues falling outside their regulatory perimeter. For example, in its 2020 report, the World Bank proposed that authorities could consider to "Include certain types of innovations within the regulatory perimeter, as a direct consequence of assessment of risk posed".[31] At the same time, regulators may also consider the need for cooperation arrangements with overseas regulators considering the cross-border nature and implications of FinTech activities.

Participating Jurisdictions have also noted the need for clear and transparent eligibility criteria to allow for all eligible firms to have access to the established IFs. In general, the scope would be broad, including both new firms and firms which are already operating in the market.

The following sections of this Report provide further details regarding these aspects.

2.3.1 Establishing dedicated teams or departments

To design and monitor IFs, the Participating Jurisdictions have set up dedicated teams or departments. The core mandates of those teams mostly refer to developing the FinTech industry and financial innovation ecosystem; engaging and enhancing the dialogue with the industry; developing new regulations and/or guidance; and monitoring and supervising the IFs.

The objectives of the IFs teams or departments also include the following:

- setting requirements and eligibility criteria for participation in the IFs, as well as the rules for the organization and work of the IFs and their participants;
- receiving and assessing applications for participation in the IFs;
- providing guidance to applicants and participants and analyse the feedback received from those innovative companies;
- supervising the IFs;
- ensuring intra- and inter-agency coordination and cooperate to foster a sound financial innovation ecosystem;
- engaging with foreign regulators and global organizations on financial innovation-related matters, and also engage with the industry (local and international);
- conducting research and studies in the area of FinTech and financial innovation and develop appropriate policy recommendations; and
- creating awareness and develop financial and investor education materials on financial innovation-related matters.

[31] See World Bank, *Global Experiences from Regulatory Sandboxes*, op. cit., page 45.

The characteristics of the teams or departments responsible for IFs vary across jurisdictions. The *number of staff* varies from less than 10 members to up to 46 members. Some Participating Jurisdictions mentioned that in practice the number of staff could however be increased by additional staff from other departments on a case-by-case basis and as necessary. Usually, the established teams or departments are led by a Head of the team or a Director who usually reports to the Executive Management or the Board or the President of the regulatory body in the Participating Jurisdiction.

For example, in CBB Bahrain, the Director of the FinTech and Innovation Unit is the Chairman of the Regulatory Sandbox committee. The Director of the Licensing Directorate is the Vice-Chairman of such committee. All sandbox admissions and graduation are subject to the CBB's approval.

In the Croatian Financial Services Supervisory Agency (HANFA), the team members report to the Coordinator and to their respective Heads of Departments, while the Coordinators report to the Head of the Policy and International Cooperation Department and to HANFA's management Board directly. A report on the activities of the Innovation Hub is regularly submitted to the management Board and presented also to the Head of the organisational units in HANFA.

In the Financial Supervisory Service (FSS) of Korea, the senior management is fully aware of the work of the IFs. In addition, the First Senior Deputy Governor of the FSS is an *ex-officio* member of the Innovative Finance Review Committee, which reviews and designates innovative financial services.

In terms of the *budget allocated* for the IFs team or department, in most cases the team depends on other departments' budget (such as the Policy Department or the International Cooperation Department). In a few cases it is allocated with a specific or exclusive budget.

For example, in the Bermuda Monetary Authority (BMA), the team has its own budget, and it can decide on how to use it, i.e., for Information Technology (IT) equipment, training or hiring new staff.

In the Superintendencia Financiera de Colombia *(*SFC Colombia), the Innova-SFC is allocated with a yearly budget and additional support to develop internal capabilities.

In terms of the *human resources allocated* to the IFs team or department, in some Participating Jurisdictions the staff is fully dedicated to the work on IFs, but in many cases the staff also carries out other responsibilities not related to the IFs.

For example, in the Brunei Darussalam Central Bank (BDCB), the staff allocated to the team responsible for IFs comprises a mix of permanently dedicated staff and partly dedicated staff. In the Superintendencia del Mercado de Valores (SMV) Peru, the staff of the Department of Economic Studies is partially dedicated to functions related to innovation. However, the regulator is considering hiring some fully dedicated staff to the innovation function.

In most of the cases, the staff of the IFs team or department have been recruited internally, from the existing departments of the regulator. In a few cases the staff are a mixed of internally and externally recruited personnel or just externally recruited personnel.

For example, in SFC Colombia, the team leader was recruited internally and the rest of the team externally.

In the Malta Financial Services Authority (MFSA), the senior manager or the team is from the internal staff while the analysts were hired externally.

In relation to the *expertise and academic background* of the staff working in the IFs team or department, the majority has securities regulation and supervision experience and has an accounting, business administration, economics, finance, or legal academic background. In a few cases, the staff's qualifications also cover computer science, cyber risk and cyber security, data science, or software engineering.

For example, in the Financial Services Commission (FSC) of Mauritius, the Fintech and Innovation Cluster has been revamped in June 2022 and is headed by a Senior Manager who has more than 20 years of regulatory experience in different fields (including global business, capital markets, investment funds, non-bank financial services and fintech). The Cluster is also composed of an assistant manager with more than ten years' legal and regulatory experience and a group of well-qualified analysts in the fields of finance and/or information technology.

In the Comisión Nacional Bancaria y de Valores (CNBV) Mexico, the members of the team have at least 4 years of experience in the financial system and a strong knowledge of the regulatory framework.

2.3.2 Establishing cooperation arrangements with market participants and other authorities

Given the cross-sectoral and cross-border nature of technology-driven financial innovation, Participating Jurisdictions have identified the need to develop cooperation tools and arrangements both domestically and internationally. These would involve cooperation with other domestic authorities, cooperation with market participants, and cross-border cooperation.

Cooperation with other domestic authorities

In terms of coordination or collaboration with other domestic authorities, Participating Jurisdictions noted different levels of cooperation.

For example, the Central Bank of Bahrain is responsible for the Regulatory Sandbox, but coordination with other authorities is limited to the process of registration of the applicant with the Ministry of Industry, Commerce & Tourism.

In Croatia no formal cooperation agreements with other domestic authorities has been established about the IFs, although in practice there is some degree of cooperation.

Since mid-2021, the Central Bank of the Dominican Republic, hand in hand with the regulatory and supervisory entities of the financial sector, and with the support of the Inter-American Development Bank (IADB), was working on the creation of an Innovation Hub at the national level. As a result of this joint endeavour, on 11 February 2022, the Innovation Hub was launched and is aimed at providing coordinated services (guidance, one to one meetings and consultation) to the innovators by the financial regulators and supervisors authorities, specifically, the Central Bank of the Dominican Republic and the Superintendencies of the Securities Market, Banks, Pensions and Insurance.

Where cooperation arrangements are in place, they involve other financial authorities but also non-financial authorities that might be relevant for the development of the local innovation facilitator.

For example, the Dubai International Financial Centre (DIFC) coordinates with the Central Bank, the Securities and Commodities Authority, and the Insurance Authority.

In Egypt, the coordination involves the Financial Regulatory Authority, the Central Bank, the Anti-Money Laundering Authority, and the National Telecommunications Regulatory Authority.

In Iran, the collaboration involves the Securities and Exchange Organization, the Ministry of Economic Affairs and Finance, the Ministry of Information and Communications Technology, the Iranian National Tax Administration; the Iran Audit Organization, the Vice-presidency for Science and Technology; and the Financial Technology and Intellectual Economic Development Center.

Figure 8 below presents other examples of coordination or collaboration between the securities regulator and both financial and non-financial authorities in relation to IFs.

Figure 8 - Examples of coordination/collaboration with other authorities in the Participating Jurisdictions

Brazil	All four financial market regulators were involved in drafting guidelines for creating regulatory sandboxes in Brazil: • the CVM (capital market regulator), • the BCB (prudential and financial institutions regulator), • Susep (insurance regulator) and • Previc (private pensions regulator). This coordinated effort also included representatives of the Ministry of Economy, the Ministry of Planning and the National Development Bank (BNDES), among other authorities.
China	• Financial Stability and Development Committee under the State Council, People's Bank of China, and other financial regulators. • Cyberspace Administration of China, Ministry of Industry and Information Technology. • Ministry of Public Security.
Mexico	• The Financial Innovation Group which is an instance of consultation, advice and coordination that aims to establishing a space for the exchange of opinions, ideas, and knowledge between the public and private sectors to learn about innovations in financial technology and plan their development and orderly regulation. The financial authorities that participate in this group are the Ministry of Finance (SHCP), the Central Bank (BANXICO), CNBV and other financial supervisory authorities. The SHCP presides the Group and it selects & invites members of the private sector, who are representatives of FinTech firms & other financial entities.
Russia	• Ministry of Finance, • Ministry of Economic Development, • Federal Security Bureau,

	• Federal Service of Financial Monitoring, • Ministry of Digital Development, Communications and Mass Media, • the Federation Council, • the State Duma.
Chinese Taipei	• Central Bank, Ministry of Finance, Ministry of Economic Affairs, • Department of Consumer Protection, • Ministry of Science and Technology, National Communication Commission. • Ministry of Justice

Source: GEMC IFs Survey

Cooperation with market participants

Considering the characteristics of the IFs, close communication and cooperation with market participants is essential. Participating Jurisdictions have noted their collaboration with market participants, although the role or degree of involvement of market participants, industry representatives or members of the private sector in the design and operation of the innovation facilitator differs among jurisdictions.

For example, in China, there is a broad dialogue with the regulator and active participation of stock and futures exchanges, depository and clearing institutions, securities companies, futures companies, funds companies, and relevant technology companies.

In Russia, the Bank of Russia and the largest financial market participants established, in 2016, the FinTech Association, which supports the development of financial technologies and national digital financial infrastructure. In 2018, the Bank of Russia approved the Guidelines for Financial Technology Development for 2018-2020 that defined the goals of innovations development in the Russian financial market including promotion of financial inclusion and market competition, improvement of quality and security of financial services, reduction of risks and costs in the financial market. The Guidelines also stipulate the creation of legal conditions for the development of innovations in the financial market and establishment of national digital infrastructure with equal access for all market participants. To achieve the objectives of the Guidelines, the Bank of Russia cooperates with financial market participants, FinTech companies and other government agencies. In April 2018, the Bank of Russia launched its regulatory sandbox, which allows to pilot innovative financial services in an isolated environment. In addition, market participants take part in an Expert Council, which discusses applications for piloting in the regulatory sandbox and gives recommendations for improving innovative services to initiators. Also, in 2020, the Bank of Russia established a FinTech Hub, which implements regular educational activities for students with market participants providing their experts and use cases for study.[32]

FinTech associations also work closely with the regulators in the Dominican Republic, Hungary, Indonesia, Iran, Nigeria, Poland, Qatar, and Thailand, among other jurisdictions.

Amongst other things, continued stakeholder engagement following the establishment of an IF has been noted as critically important for providing useful inputs for the review of the functioning of the facilitators and, as appropriate, to inform modifications. Notably, there are a number of cases where market participants are involved in the operation of IFs.

32 https://www.cbr.ru/eng/fintech/

For example, in Brazil, there is no involvement of market participants or industry representatives in the operation of the Fintech Hub. However, in the case of the FinTech Lab, the coordination of the work is jointly conducted by the regulator (*Comissão de Valores Mobiliários* (CVM)), the Inter-American Development Bank, the ABDE (an association of Brazilian state-owned banks, development banks and development agencies) and GIZ (the German Agency for International Cooperation). On the other hand, it is planned that the new regulatory sandbox would include a high degree of involvement of market participants in the design of this innovation facilitator, although the CVM would be in charge of operating the sandbox.

The Dubai Financial Services Authority (DFSA) has indicated that its aim for the Innovation Programme is to support and facilitate innovation in the Dubai International Financial Centre and support the United Arab Emirates National Innovation Strategy. Hence, the regulator regularly meets with market participants, members of government, and other stakeholders to discuss the work and receive feedback.

In India, the innovation sandbox is run by a committee of seven market infrastructure institutions (including Stock Exchanges, Clearing Corporations, Depositories), but the regulatory sandbox is run by the regulator (and market participants do not have any role in the administration of the sandbox).

The Financial Supervisory Commission, Chinese Taipei has held several events, including symposiums and public hearings to discuss and communicate with market participants, industry representatives, or members of the private sector during the design and operation of the innovation facilitator.

Cross-border cooperation

The analysis of international experiences and the use of cross-border collaboration for the development of local IFs is a common practice in many Participating Jurisdictions. In fact, bilateral and multilateral cooperation is a key tool for regulators to have access to lessons learned and experiences in other jurisdictions.

In some cases, regulators conduct coordinated initiatives with foreign counterparts to develop capabilities or enhance their knowledge regarding developments taking place in the area of IFs. In other cases, regulators organise and participate in international or regional conferences or summits to facilitate the sharing of experiences.

For example, the Central Bank of Hungary (*Magyar Nemzeti Bank* – MNB) organises the World FinTech Festival in Budapest, in cooperation with the Singapore FinTech Festival, which has taken place for the second time in 2021.

The Indonesian Financial Services Authority (OJK) has an innovation center called the OJK Innovation Center for Digital Financial Technology (OJK INFINITY), which is a major FinTech hub that collaborates internationally with a number of financial regulators to develop better interaction and facilitation with the Fintech industry and the investment community. OJK sees the innovation hub as an accelerator, facilitator and incubator of Fintech in Indonesia, with five main initiatives:

1. Policy and Regulatory Framework: Research, Policy, Regulation;

2. Regulatory Sandbox: Review of business models and business governance, Prototypes;
3. Capacity Building: Workshops and Seminars, Fintech Summits;
4. Facilitation: Co-working space, Consultations; and
5. Collaboration: Other Regulators, Fintech Hub, International Organisations. OJK understands the importance of its balancing role to provide an enabling regulatory framework to support innovation in the Fintech sector, while also ensuring the safety and soundness of the financial sector and the protection of consumers.

Some regulators have signed bilateral or multilateral Memoranda of Understanding (MoUs) or have put in place other types of cooperative arrangements to facilitate or support the development of IFs. The following are examples of bilateral or multilateral MoUs in the area of IFs:

- The Abu Dhabi Global Market (ADGM) and Central Bank of Bahrain (CBB) signed an MoU to promote and facilitate innovation in financial services across the United Arab Emirates and the Kingdom of Bahrain.[33]

- The Astana Financial Services Authority (AFSA) of the Astana International Financial Centre (AIFC), Kazakhstan, has entered into MoUs with the Financial Services Regulatory Authority (FSRA) of the Abu Dhabi Global Market[34] and with the Monetary Authority of Singapore (MAS).[35]

- The CSRC China has signed an MoU with the Australian Securities and Investments Commission (ASIC) Australia[36] and the Autorité des Marchés Financiers (AMF) of France.[37]

- In December 2020, the Central Bank of Hungary (MNB) signed a MoU with the Monetary Authority of Singapore (MAS) to strengthen cooperation in FinTech innovation between Singapore and Hungary and help FinTech firms access each other's markets. MAS and MNB have also committed to exchange views on emerging market trends and developments in FinTech, as well as regulatory issues on financial services innovation.[38]

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33 https://www.adgm.com/media/announcements/adgm-signs-mou-with-central-bank-of-bahrain-to-promote-innovation-in-financial-sector

34 https://afsa.aifc.kz/bilateral-cooperation/

35 https://www.mas.gov.sg/news/media-releases/2018/afsa-aifca-and-mas-sign-cooperation-agreement-to-boost-fintech-ties

36 https://asic.gov.au/media/4536062/asic-csrc-fintech-cooperation-agreement-2017.pdf

37 https://www.amf-france.org/sites/default/files/2020-01/2019-mou-regarding-cooperation-on-innovation-in-the-financial-sector-between-the-autorite-des-marches-financiers-amf-and-the-china-securities-regulatory-commission-csrc.pdf

38 https://www.mnb.hu/en/pressroom/press-releases/press-releases-2020/singapore-and-hungary-strengthen-cooperation-in-fintech

- The Capital Markets Authority of Kenya (CMA) and the Australian Securities and Investments Commission (ASIC) have signed a Co-operation Agreement to promote innovation in financial services in their respective markets.[39]

- The FSC Korea has entered into MoUs with MAS Singapore[40] and the Financial Conduct Authority (FCA) of the United Kingdom to promote innovation in financial services in their respective markets.[41]

- The Israel Securities Authority (ISA), the Capital Markets Insurance and Savings Authority (CMISA), and The Bank of Israel (BOI) have signed an MoU on FinTech Cooperation with The New York State Department of Financial Services (NYSDFS)[42] and with the Swiss Financial Market Supervisory Authority (FINMA) [43].

- The ISA and the CMISA signed an MoU with the Croatian Financial Services Supervisory Agency, (HANFA).[44]

- The ISA has also signed an MoU with the Hong Kong Securities and Futures Commission (SFC),[45] the Abu Dhabi Global Market (ADGM) Financial Services Regulatory Authority, [46] and the French Financial Markets Authority (AMF) [47].

- The FSC Mauritius has entered into MoUs with Canada (with different provincial regulators), AMF France, CMA Kenya, and FSA Malta.[48]

- The Securities and Commodities Authority (SCA) of the United Arab Emirates has signed a bilateral MoU with the Dubai Financial Services Authority (DFSA) of the Dubai International Financial Centre (DIFC) and the Financial Services Regulatory Authority (FSRA) of the Abu Dhabi Global Market (ADGM), respectively, to share and exchange information on innovation, regulatory approaches to financial innovation, economic and commercial developments that impact each other's jurisdictions. The MoU also enables the SCA, ADGM and DFSA to provide support and facilitate

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39 https://asic.gov.au/media/4307860/asic-cma-fintech_cooperation_agreement-1.pdf

40 https://www.mas.gov.sg/news/media-releases/2016/singapore-and-south-korea-sign-cooperation-agreement-in-fintech

41 https://www.fca.org.uk/publication/mou/fca-korean-fsc-co-operation-agreement.pdf

42 https://www.boi.org.il/he/BankingSupervision/MemorandumOfUnderstanding/Documents/Israel_NY_FinTech_MOU.pdf

43 https://www.isa.gov.il/sites/ISAEng/Departments/International_Affairs/2820/Documents/FINMA.pdf

44 https://www.isa.gov.il/sites/ISAEng/Departments/International_Affairs/2820/Documents/moubetweenisraelandcroatia.pdf

45 https://www.sfc.hk/-/media/EN/files/ER/MOU/20201117-SFCISA-Fintech-MoU-Final.pdf

46 https://www.isa.gov.il/sites/ISAEng/Departments/International_Affairs/2820/Documents/MoU_betwwenyISAandTheAbuDhabi.pdf

47 https://www.isa.gov.il/sites/ISAEng/Departments/International_Affairs/2820/Documents/heskem_france.pdf

48 https://www.fscmauritius.org/en/about-us/local-international-cooperation/memorandum-of-understanding

financial and FinTech activities that are beneficial to the financial services industry in the UAE.

Bilateral or multilateral MoUs provide for a practical tool for mutual cooperation and assistance, including the exchange of information and, where allowed by laws and regulations, joint or coordinated actions to support the sound development of financial innovation initiatives. Cross-border cooperation arrangements could also assist innovation firms willing to apply an innovative product or service in more than one jurisdiction, which usually requires conducting the testing of an innovation product or service in more than one jurisdiction and therefore the need for appropriate knowledge about the regulatory regimes in each jurisdiction.[49] Such cooperative arrangements could also complement other MoUs the authorities may have in place to conduct cross-border supervision and enforcement on the relevant firms and activities.

The *European Forum for Innovation Facilitators* is an example of cooperation at the regional level. It was set up on 2April 2019, to provide a platform for regulators to meet regularly to share technological expertise and lessons learnt about their engagement with firms through IFs and to reach common views about the regulatory frameworks for innovative products, services, and business models.

At the international level, the *Global Financial Innovation Network* (GFIN)[50] provides another example of a dedicated effort to exchange learnings, develop a cross-border sandbox and help firms navigate between different jurisdictions.

IOSCO plays an important role in providing a forum where regulators around the globe can exchange views and share experiences in this and other matters of common interest. In May 2018, the IOSCO Board established the FinTech Network which was set up to facilitate the sharing of knowledge and experiences among IOSCO members. The FinTech Network focused on four priorities, namely: 1) Distributed-Ledger Technology, 2) Artificial Intelligence and Machine Learning, 3) SupTech and RegTech, 4) Encouraging Innovation.

In addition, IOSCO has established a Stablecoin Working Group within its FinTech Network to consider and evaluate global stablecoin proposals from securities market regulators' perspective. Moreover, the IOSCO Board priorities and Workplan for 2021-2022 will continue dedicating resources to the ongoing implications for securities markets of financial innovation and digitalisation developments through the ICO and FinTech Network.

2.3.3 Development of eligibility criteria and applications

Most of the Participating Jurisdictions noted that establishing eligibility criteria would assist regulators in ensuring the achievement of the facilitators' objectives, notably in the case of regulatory sandboxes where eligibility criteria for admission to testing are an essential part of the design. Many of the innovation hubs do not establish eligibility criteria and are open to all inquiries. However, in some Participating Jurisdictions, eligibility criteria are also set for access to the innovation hubs, in particular where the setup of the hub is broader and provides more personalised guidance and support than a simple dedicated contact point.

[49] European Supervisory Authorities, *FinTech: Regulatory sandboxes and innovation hubs*, Op. cit. page 34.

[50] https://www.thegfin.com/

For example, the Bank of Lithuania applies the following criteria:

1. The regulatory sandbox is open only for financial services, products or business models that are new to Lithuania's market;
2. Consideration of whether the adoption of the proposed financial innovation would bring identifiable benefits to the financial consumers, e.g., more convenient, safer and cheaper financial services, or otherwise contribute to the sound development of the financial market;
3. A clear need for testing in a live and controlled environment; and
4. Readiness for testing, including a testing plan with clear objectives, prospective testing conditions and risk analysis, as well as sufficient resources; and 5) plans to deliver the new services and products in Lithuania.

The MFSA Malta has defined the following eligibility criteria:

1. Innovation – the proposed solution shall be (i) technology-enabled and (ii) innovative, resulting in new business models, applications, processes or products within the financial services sector;
2. Clarity on the need for testing – there is a genuine need for testing the solution in a controlled environment in order to identify any inherent regulatory gaps, challenges and risks;
3. Benefits – the solution shall offer identifiable (direct or indirect) benefits to consumers of financial services and the wider financial services sector; and
4. Readiness – the solution is ready for testing within the sandbox and that the applicant have adequate resources to operate throughout the time spent in the sandbox.

The SCA UAE applies the following eligibility criteria: the prospective product, service, or solution should be able to demonstrate that it:

1. it is related to financial products and/or services that fall within SCA's regulatory mandate;
2. it is innovative, in terms of technology, product/service, and/or business model;
3. it has clear benefits for consumers and/or industry (such as promoting growth, efficiency, risk management, wider choices, etc.);
4. it has a genuine need for testing within the sandbox framework;
5. it is ready to test the innovation in the market with real financial consumers; and
6. there is a clear willingness for the prospective product, service, or solution to be offered to the full consumer base after the testing period. Moreover, the applicant should demonstrate that (i) it is fit and proper and has adequate and appropriate financial resources, (ii) it has relevant technical and business knowledge and experience, (iii) it has bank account in the UAE, if required by SCA depending on the nature of the product, service, or solution being tested.

Figure 9 below provides an overview of the most used eligibility criteria for access to the IFs operating in Participating Jurisdictions.

Figure 9 – Most common eligibility criteria for IFs

Criterion	Description
Genuine innovation	The innovation is new and/or significantly different from those currently available.
Benefits to consumers and the financial system	The innovation has the potential to provide a better outcome for investors, for market integrity and for financial stability, overall.

Background research	The innovator has conducted research to understand the regulatory framework before approaching the innovation facilitator.
Project maturity/test readiness	The innovation has reached a sufficiently mature stage considering the resources invested and the development stage of the innovation.
Need for support/testing	The innovation has a genuine need for support and testing, that is, the innovation requires guidance about the applicable regulatory framework.
Risk mitigation	The innovator has ensured that potential risks arising from the proposed innovation are assessed and mitigated, including to consumers and the market.
Commitment to investor protection and compliance	A commitment by the innovator to investor protection and culture of compliance.

Applications are reviewed based on defined eligibility criteria. Some regulators provide standardised application forms and may apply application fees. Those applicants that meet the criteria are admitted to participating in the IF for a specific period of time.

As an example, Figure 10 below provides an overview of the main elements taken into consideration in the design of a regulatory sandbox.

Figure 10 - Regulatory sandbox design elements

Design Element	Description	Design Choices (examples)
Eligibility	Defines who can participate in the sandbox. Eligibility should be articulated clearly to ensure a level playing field across all market participants.	• Open to incumbents only • Open to newcomers only • Open to nonfinancial services providers (e.g., technology providers, regtech)
Governance	Defines the internal operating structure of the sandbox, roles and responsibilities, and key operational processes.	• Specialized sandbox unit • Hub-and-spoke: a central point of contact coordinating sandbox inquiries with other units of the regulator
Timing	Includes: • Duration of the admission window • Duration of the test	• Periodic admission (cohort-based) • Permanent admission window (on-tap) • Testing periods range from 3 to 36 months
Test restrictions	Limits to the scope, scale, and/or conduct of the sandbox test to minimize potential harm.	• Number of clients • Number of transactions • Volume of transactions • Geographical limits • Consumer protection safeguards • Minimum AML/CFT requirements
Exit	Includes: • Individual test outcomes (graduation, terminated test, etc.) • Program-level key performance indicators (KPIs) • Incorporation of insights and lessons learned into the broader regulatory agenda	• For test outcomes see Section IV • KPIs in terms of the absolute output (number of graduated firms) • KPIs in terms of a regulatory change promoted

Source: Consultative Group to Assist the Poor (CGAP), *How to Build a Regulatory Sandbox. A Practical Guide for Policy Makers*, September 2020, page 12.[51]

In a report published in 2020 on regulatory sandboxes and innovation hubs, the ECON pointed out that "*many of these [eligibility] criteria leave a significant leeway for interpretation and allow for discretion in the selection process. That is why the question of how thoroughly*

51 CGAP, *How to Build a Regulatory Sandbox. A Practical Guide for Policy Makers*, September 2020, page 12, https://www.cgap.org/sites/default/files/publications/2020_09_Technical_Guide_How_To_Build_Regulatory_Sandbox.pdf

applications are assessed and vetted is essential," as well as the capacity of regulators to assess the genuine innovation requirement.[52]

It is therefore important for regulators to consider the governance, transparency, and accountability of the IFs and to make publicly available not only the eligibility criteria for participating in the IFs but also the reasons for not approving the respective applications. In doing so, regulators will look not to affect the applicant's commercially sensitive information or share proprietary or confidential information, and more generally.

Participating Jurisdictions have noted that the number of applications received in the last years ranges from less than 10 to more than 200 applications annually. However, not all the applications had met the eligibility criteria and therefore not all of them have been approved.

For example, the Central Bank of Bahrain rejected several applicants because their prospective business model did not meet the eligibility criteria. Moreover, the risks associated with the proposed business model were assessed to be very high.

The CVM Brazil mentioned that 115 out of 178 applications were rejected in the period from 2018 to 2020 as many of the proposals did not demonstrate a genuine financial innovation.

The FSS Korea informed that seven out of 117 applications have been rejected due to their failure to meet the eligibility criteria, including financial consumer protection considerations.

The FSC Mauritius has rejected 10 applications, due to incomplete applications or because the proposed solution was already captured in the existing legal framework.

The FSC Chinese Taipei mentioned that as of the end of July 2020, 2 applications for the regulatory sandbox were rejected due to incomplete documentation or lack of feasibility in the testing plan. In terms of accelerators, 46 start-ups failed to apply for stationing in FinTechSpace due to insufficient innovation of the proposed business models.

Participating Jurisdictions have also reported that some of the complaints they received from applicants refer to the time it takes to get the approval to participate in the IF or the strict eligibility criteria. Another common concern refers to the difficulties some applicants may experience (in particular non-financial firms applying to the IF) to open a banking account to be associated with the solution to be tested though the IF.

For example, the FSA Dubai has reported some complaints from applicants about the time it takes to come up with a resolution on the acceptance to participate in the IF, although the delays may also be due to the different changes the applicant makes to the proposed business model during the application process.

The MNB Hungary indicated that some of the innovators (applicants) find the scope of the regulatory exemption, that can be requested, to be relatively tight as only central bank supervisory and regulatory tools are covered due to the applicable legal framework.

"Impact on innovation, financial stability and supervisory convergence", available at https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652752/IPOL_STU(2020)652752_EN.pdf

The CBB Bahrain pointed out that that most difficulties from applicants have arisen in securing bank partnerships or in the opening of bank accounts. Thus, the Fintech and Innovation Unit has been assisting the companies (applicants) in getting registered with banks. This all happens before testing commences.

The FSC Mauritius also mentioned that some complaints pertain mainly to the difficulties some of the Regulatory Sandbox Licence (RSL) holders have experienced to open bank accounts or access the Mauritius Credit Information Bureau system.

Once accepted to the IF, and throughout the testing period, the participants should comply with the arrangements of the IF. Participants should also keep informed the regulator based on the approved plan and other applicable requirements (e.g., testing requirements, or limits on the number and characteristics of real clients that could participate in the testing phase, among other requirements). Early exit from the IF could be triggered if the participant fails to comply with those requirements.

Notably, although the participation in some IFs might involve the application of some regulatory exceptions under specific circumstances, the use of proportionality or regulatory discretion does not mean the disapplication of the existing legal and regulatory framework.[53]

In those cases where a participant successfully graduates and obtains a licence to operate and conduct business in the financial system, it is important that the regulator communicates this decision to the public, so investors and financial consumers become aware of the activities, services or products that would be available through the new licensee. Also, as pointed out by ECON, "*In terms of consumer protection, it is essential that the exit plan contain[s] explicit arrangements to ensure that consumers are not worse off than before the test was launched (for example, setting out provisions in case the service is discontinued after exit). An exit after a successful test would usually result in a fully-fledged or tailored authorisation of the entity.*"[54]

2.4 Capacity building

Most of the Participating Jurisdictions have noted the important role of capacity building in developing efficient and effective IFs. Building capacity both at the level of the regulators and market participants is essential for achieving the envisaged objectives of the IFs.

For example, the CSRC China together with the Shanghai Stock Exchange, Shenzhen Stock Exchange and relevant associations have organised joint technical seminars, industry technical meetings, and developed research on FinTech-related matters. The CSRC has also developed training and capacity building initiatives with the Hong Kong Monetary Authority and the

53 As noted by the European Supervisory Authorities, "*Sandboxes may also imply the use of legally provided discretions by the relevant supervisor (with use depending on the relevant applicable EU and national law)4 but sandboxes do not entail the disapplication of regulatory requirements that must be applied as a result of EU law. […] the baseline assumption for regulatory sandboxes is that firms are required to comply with all relevant rules applicable to the activity they are undertaking.12 Therefore, like innovation hubs, regulatory sandboxes can enhance firms' and competent authorities' understanding of relevant issues.*" See European Supervisory Authorities, *FinTech: Regulatory sandboxes and innovation hubs*, Op. cit., pages 5 and 16.

54 ECON, *Regulatory Sandboxes and Innovation Hubs for FinTech. Impact on innovation, financial stability and supervisory convergence*, Op. cit., page 37.

Monetary Authority of Macao on financial innovation-related areas. The CSRC has also teamed up with the China Capital Market Institute to carry out special training on RegTech to train the CSRC regulatory staff.

The FSS Korea is operating an internal IT training platform ("Tech Finder") since December 2018 to enhance the supervisors' understanding of the latest trends in new technology and digital transformation. This complements training through external specialized agencies.

The SCA UAE has arranged for local and overseas training workshops on for its IFs team.

Participating Jurisdictions have also mentioned the importance of engaging with the industry to develop knowledge and capabilities.

For example, in China there is a broad dialogue and collaboration with universities and technology companies to support the regulator's understanding of the trends and developments in the area of financial innovation.

In Russia, market participants cooperate with the FinTech Hub by providing experts for various educational programs.

It is therefore important to use the experience, knowledge, and learnings deriving from the work of the IFs to support the regulators capacity building,[55] as well as disseminate such knowledge "*to relevant functions of the authority(ies) concerned. In addition, where appropriate, communications should be made to the market on the regulatory and supervisory approaches to issues identified in the context of interactions via innovation facilitators (e.g. in the form of published frequently asked questions/FAQs, authorisation decision trees, e-learning platforms, industry roundtables).*"[56]

[55] See UNSGSA and CCAF, *Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech*. Op. cit., page 41.

[56] European Supervisory Authorities, *FinTech: Regulatory sandboxes and innovation hubs,* Op. cit., page 43.

Chapter 3: Examples of current practices in advanced markets

3.1 Regulatory Sandbox, Financial Conduct Authority, United Kingdom (FCA UK)

In 2016, the FCA set up a regulatory sandbox to encourage innovation and promote competition in the interests of consumers.[57] The sandbox is dedicated to authorised firms, unauthorised firms that require authorisation, and technology businesses which provide solutions to support regulated activity that are looking to deliver innovation in the UK financial services market. The sandbox looks to provide firms with:

- the ability to test products and services in a controlled environment,
- reduced time-to-market at potentially lower cost,
- support in identifying appropriate consumer protection safeguards to build into new products and services,
- better access to finance.

The FCA closely oversees the development and implementation of tests, for example by working with firms to agree bespoke consumer safeguards. Sandbox tests are expected to have a clear objective (e.g., reducing costs to consumers) and to be conducted on a small scale. Firms test their innovation for limited duration with a limited number of customers.

After its launch, the regulatory sandbox operated on a cohort basis until July 2021, which meant that firms could only apply during a specific window in the calendar year. However, since August 2021, the regulatory sandbox is always open, i.e., the FCA is accepting applications on a rolling basis throughout the year.

The propositions must be genuinely innovative, show clear consumer benefit and meet all of eligibility criteria. To conduct a regulated activity in the UK, a firm must be authorised or registered by FCA, unless certain exemptions apply. Successful firms need to apply for the relevant authorisation or registration in order to test. The FCA has a tailored authorisation process for firms accepted into the sandbox. Any authorisation or registration is restricted to allow firms to test only their ideas as agreed with FCA.

Figure 11 below provides an overview of the FCA eligibility criteria for the regulatory sandbox.

Figure 11 - An overview of eligibility criteria for the regulatory sandbox.

Criteria	Key questions	Positive indicators	Negative indicators
In scope	Are you looking to deliver innovation that is either regulated business or supports regulated business in the UK financial services market?	Innovation appears to be intended for the UK market	Innovation does not appear to be intended for use in the UK
Genuine innovation	Is your innovation new or a significantly different offering in the marketplace?	Desk research produces few or no comparable offerings already established on the market Step-change in scale	There are numerous examples of similar offerings already established on the market. It looks like artificial product differentiation
Consumer benefit	Does the innovation offer a good prospect of identifiable benefit	The innovation is likely to lead to a better deal for consumers directly or indirectly	Likely detrimental impact on consumers, markets or the financial system

57 https://www.fca.org.uk/firms/innovation

Criteria	Key questions	Positive indicators	Negative indicators
	to consumers (either directly or via heightened competition)?	You have identified any possible consumer risks and proposed mitigation The innovation will promote effective competition	It looks designed to circumvent regulations
Need for a sandbox	Do you have a genuine need to test the innovation in our sandbox? Applicants aren't required to need a sandbox tool to meet these criteria	The innovation does not easily fit the existing regulatory framework, making it difficult or costly to get the innovation to market You will benefit from using a sandbox tool to test in a live environment You have no alternative means of engaging with the FCA or achieving the testing objective The full authorisation process would be too costly/difficult for a short viability test	Live testing is not necessary to answer the question that you want answered (to achieve the testing objective) You are able to undertake the test easily without the support of the FCA A dedicated supervisor or our Direct Support team could answer the query
Ready for testing	Are you ready to test the innovation in the real market with real consumers?	You have a well-developed testing plan with clear objectives, parameters and success criteria Some testing has been conducted to date You have the resources to test in the sandbox You have sufficient safeguards in place to protect consumers and is able to provide appropriate redress if required	Unclear objectives for testing and/or plans for testing are underdeveloped Little to no testing has been done You do not have the resources for the test The proposed customer safeguards are inadequate and/or appropriate redress cannot be provided

Source: *UK FCA website.*[58]

The FCA has opened applications for 7 cohorts of the regulatory sandbox. In total, 501 applications have been received and 153 have been accepted to test innovative products and services. Accepted applications cover a range of areas including Blockchain based payment services, RegTech propositions, general insurance, Anti-Money Laundering controls, biometric digital identity and Know Your Customer verification, digital identity solutions, platforms which tokenise issuance of financial instruments, and services aimed at facilitating greater access to financial services for vulnerable consumers.

For example, for cohort 6 propositions have included more innovation that "make finance work for everyone" and "support the UK in the move to a greener economy." More than half of the successful applications have sought to address issues around access to financial services, financial inclusion, and vulnerable consumers, with 2 successful applicants developing sustainable finance models. The FCA noted that the propositions in cohort 6 support the increased demand for digital offerings created by the impact of COVID-19. Cohort 7 has further encouraged innovation and testing from firms developing businesses, products or services intended to: detect and prevent fraud and scams; support the financial resilience of vulnerable consumers; or improve access to finance for SMEs. The names and models of all firms across all 7 cohorts are published on the FCA website.

In November 2020, the FCA launched the 'Digital Sandbox' in partnership with the City of London to support the testing and development of new products and services. The second

58 https://www.fca.org.uk/firms/innovation/regulatory-sandbox-prepare-application

cohort, launched in October 2021, focuses on environmental, social, and governance (ESG) data and disclosure. This cohort aims to support the UK's green finance ambitions ahead of hosting COP26 in November 2021. The purpose of this sustainability cohort is to accelerate innovation and to address the specific market challenges set out below:

- How can technology enable transparency in disclosure and reporting on sustainability, especially on the characteristics of corporate assets and the profile of their supply chains?

- How can technology be used to automate the assurance of a listed issuer's ESG data and validation of its ESG-labelled corporate bond issuance?

- How can technology help consumers understand the ESG characteristics of the products and providers they engage with, as well as provide visibility around alternatives aligned with their needs and preferences?

3.2 Regulatory Sandbox, Monetary Authority of Singapore (MAS)

In Singapore, MAS has implemented two sandbox options: one Sandbox for complex business models which require some customisation to balance the risks and benefits of the experiment, and another "Sandbox Express" focused on fast-track approvals for activities where the risks are low and well understood by the market.[59]

According to the description provided by MAS, including the "Frequently Asked Questions on MAS Fintech Regulatory Sandbox" (February 2020):[60]

- Any firm that is looking to apply technology in an innovative way to provide new financial services that are or are likely to be regulated by MAS can apply to the Sandbox. MAS expects that interested firms would have done their due diligence, such as testing the proposed financial service in a laboratory environment and knowing the legal and regulatory requirements for deploying the proposed financial service, prior to submitting an application.

- To apply to be in a sandbox, the firm (whether or not it is a MAS regulated financial institution) can submit an application using a pre-defined template provided in the specific guidelines developed by MAS.[61] The guidelines set out the objective and principles of the sandbox and provide guidance to the applicant on the application process and the information to be provided to MAS. The guidelines are directed to firms that are looking to apply technology in an innovative way to provide financial services that are or likely to be regulated by MAS. The target audience includes but is not limited to financial institutions, FinTech firms, and professional services firms partnering with or providing support to such businesses.

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59 https://www.mas.gov.sg/development/fintech/regulatory-sandbox

60 https://www.mas.gov.sg/-/media/MAS/Smart-Financial-Centre/Sandbox/FAQsFeb2020.pdf?la=en&hash=831744733A4514B9115ABBE27E4396A11E38A644

61 MAS Singapore, *Fintech Regulatory Sandbox. Guidelines*, November 2016, https://www.mas.gov.sg/-/media/MAS/Smart-Financial-Centre/Sandbox/FinTech-Regulatory-Sandbox-Guidelines-19Feb2018.pdf?la=en&hash=B1D36C055AA641F580058339009448CC19A014F7

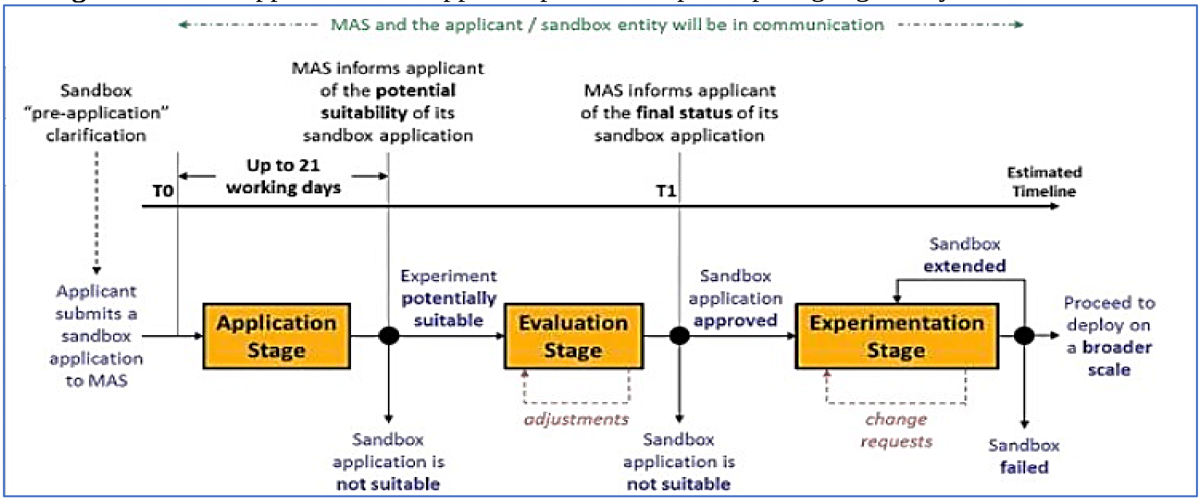
- There is no specific period for applications to be made to be in a sandbox and there are no administrate charges for submitting a sandbox application.

- The sandbox enables financial institutions and FinTech players to experiment with innovative financial products or services in a live environment but within a defined space and duration. Notably, the sandbox includes appropriate safeguards to contain the consequences of failure and maintain the overall safety and soundness of the financial system.

- MAS provides the applicant with the appropriate regulatory support by relaxing specific legal and regulatory requirements prescribed by MAS, which the applicant would otherwise be subject to, for the duration of the sandbox. A risk-based approach is adopted in determining the most appropriate and effective form of regulatory support to facilitate the experimentation in the sandbox, and any application for exemption would be considered on a case-by-case basis.

Figure 12 below depicts the application and approval process for participating in the regulatory sandbox. MAS communicates with the applicant/sandbox entity in the course of evaluating the sandbox application and continue to do so during experimentation.

Figure 12 - The application and approval process for participating regulatory sandbox in MAS



Source: MAS Singapore, Fintech Regulatory Sandbox. Guidelines, November 2016.

- For any sandbox application that is rejected, MAS would not consider an application from the same applicant within a cooling-off period of 3 months from the date of rejection. MAS views the cooling-off period as a measure to safeguard against potential exploitation of the overall sandbox framework, without stifling promising innovation. The cooling-off period also encourages the applicant to conduct a more comprehensive due diligence, improve its value proposition or submit a complete application.

- Generally, the sandbox would be discontinued if the sandbox entity is unable to fully comply with the relevant legal and regulatory requirements at the end of the sandbox period. The sandbox entity is encouraged to engage MAS early if it anticipates that it cannot comply with the legal and regulatory requirements upon exiting the sandbox and can apply to MAS for an extension of the sandbox period if it helps the sandbox entity to fully comply with the relevant legal and regulatory requirements subsequently. MAS would assess such situations on a case-by-case basis in the interest of encouraging innovation, protecting consumers, and maintaining a level-playing field.

Examples of IFs (MAS)

Sandbox Option: Propine Technologies Pte Ltd. Propine, a Singapore-based end-to-end securities services firm, was admitted to the Sandbox on 8 November 2019. Propine offers a full range of services adapted to the latest financial markets and regulatory trends across digital asset custody, asset servicing, trade settlement facilitation, investor reporting as well as services catering to global security issuers under the watchful eyes of MAS. On 7 January 2021, Propine completed its experiment and exited the sandbox and was successful graduated with a Capital Markets Services Licence and is now fully operational.

Sandbox Express Option: Synoption Pte Ltd. Synoption Pte Ltd joined the Singapore Sandbox Express in January 2020 and completed its experiment and exited Sandbox Express on 31 Dec 2020. It is a new institutional platform that allows clients to analyse and trade on FX Option instruments and strategies in a fair and transparent manner.

In April 2021, MAS Singapore announced a new RegTech grant scheme and an enhancement of the Digital Acceleration Grant (DAG) scheme to accelerate technology adoption in the financial sector. The RegTech grant scheme, which is available to Singapore-based financial institutions (FIs), aims to promote the adoption and integration of technology solutions in the risk management and compliance functions of FIs. This will help financial institutions enhance processes and capabilities in these domains and encourage a vibrant RegTech ecosystem in Singapore.

The DAG endeavours to help smaller FIs and FinTech firms adopt digital solutions to better cope with the impact of COVID-19, and to position themselves for subsequent recovery and growth. As of 31 March 2021, MAS received over 1,100 applications from both financial institutions and FinTech firms. Applicants have tapped on the DAG to adopt cloud solutions and services, online communication and collaboration tools, data-analytics solutions, compliance solutions, and office productivity tools.

In addition, on 12 July 2021, MAS Singapore launched the *Global Veritas Challenge* which seeks to accelerate the development of solutions which validate artificial intelligence and data analytics solutions against the fairness, ethics, accountability, and transparency principles, to strengthen trust and promote greater adoption of AI solutions in the financial sector.

3.3 Innovation Hub, Australian Securities and Investments Commission (ASIC)

ASIC's Innovation Hub is an initiative for FinTech businesses that are developing innovative financial products or services.[62] Through the innovation hub, eligible FinTech start-up businesses, including RegTechs, can receive informal assistance to help them navigate Australia's regulatory system, it is their opportunity to engage with the regulator informally. According to the information provided by ASIC on its website, ASIC is committed to promoting innovation without compromising the fundamental principles of financial services regulation or the licensing process as reflected in ASIC's strategic objectives.

[62] https://asic.gov.au/for-business/innovation-hub/

ASIC is implementing its Innovation Hub initiatives by facilitating innovative fintech business models that meet the innovation hub's eligibility criteria to meet with senior staff. To be eligible for assistance, the applicant should complete a request form on the ASIC website and be within ASIC jurisdiction. Generally, this means an entity that may require an Australian financial services licence or an Australian credit licence from ASIC or, are in the process of obtaining one of those licences; or already have one of those licences for less than 12 months or are seeking to expand their licence.

In assessing an application, ASIC also considers whether the application involves innovative businesses. ASIC considers "innovation" to be new or significantly different products or services from those currently available. Also, ASIC takes into account whether the proposed product or service can potentially provide a "better outcome" for investors and consumers. Two other factors would help determine whether the business is selected for assistance: the timing of the request within the business-planning process, and the level of detail provided by the applicant through the respective "Application for Assistance Form". The firms can fill out the "Application for Assistance Form" through the ASIC website and in most instances a response is provided in about one week. Generally, ASIC is generous and flexible with applicants around the eligibility criteria as long as there is sufficient detail to engage with.

The scope of the innovation facilitator could be limited to regulated firms or may also cover un-regulated firms and new entrants. **For example**, in Australia the ASIC Enhanced Regulatory Sandbox is targeted towards new unregulated entrants that do not hold a licence to carry out a regulated financial or credit service, and also to regulated entrants that want to test a financial or credit service they are not currently authorised for,[63] whereas in the EU "*the innovation hubs are open to all firms (incumbents and new entrants; regulated and unregulated) adopting, or considering the adoption of, innovative products, services, business models or delivery mechanisms*".[64]

If the applicant meets the eligibility criteria, then it can receive informal guidance on a number of issues such as:

- The applicant's obligations under the financial services and credit regulatory framework.
- How ASIC administers such framework (e.g., how to obtain an Australian financial services licence).
- ASIC's Our thoughts on regulatory issues you should consider as you set up your business.
- Important to note, ASIC does not provide legal advice or financial assistance.

According to the information published by ASIC,[65] the Australian Government has introduced the Enhanced Regulatory Sandbox (ERS), which aims to facilitate financial innovation in Australia and allows natural persons and businesses to test certain innovative financial services

63 The Australian Government has introduced an Enhanced Regulatory Sandbox (ERS) that supersedes the previous regulatory sandbox administered by ASIC. See https://asic.gov.au/for-business/innovation-hub/enhanced-regulatory-sandbox/

64 European Supervisory Authorities, *FinTech: Regulatory sandboxes and innovation hubs*, Op. cit. page 9.

65 https://asic.gov.au/for-business/innovation-hub/enhanced-regulatory-sandbox/

or credit activities without first obtaining an Australian financial services (AFS) licence or Australian credit licence (credit licence). This is administered by ASIC. The ERS supersedes the previous regulatory sandbox which was also administered by ASIC. It allows testing of a broader range of financial services and credit activities for a longer duration (up to 24 months).

3.4 Regulatory Accelerator, Bank of England

The Bank of England (BoE) launched a Fintech Accelerator in June 2016 to deploy innovative technologies on issues relevant to the Bank's mission and operations. [66] According to the information published by the BoE,[67] Working in partnership with FinTech firms the BoE is seeking to develop new approaches, build its understanding of these new technologies, and support the development of the sector. The BoE carries out explorative Proofs of Concept (PoC) on use cases of relevance to its role as a central bank that could enable it to function more efficiently and effectively.

The Accelerator also helps to understand emerging technologies first-hand, to monitor the incidence and integration of these developments in the market, and to track trends and developments in the sector which are used to inform colleagues across the Bank. The firms have the opportunity to apply their technology to a "real issue" as defined by the BoE's business areas and work directly with some of our leading subject matter experts.

Interested firms should complete a short application form via BoE's website. After an initial screening process, the firms identified as relevant to advertised use cases (a longlist) will be asked for additional detailed information. This longlist will be further screened to form a shortlist of firms who might be asked to present their PoC proposal to a 'pitch panel', composed of senior Bank staff.

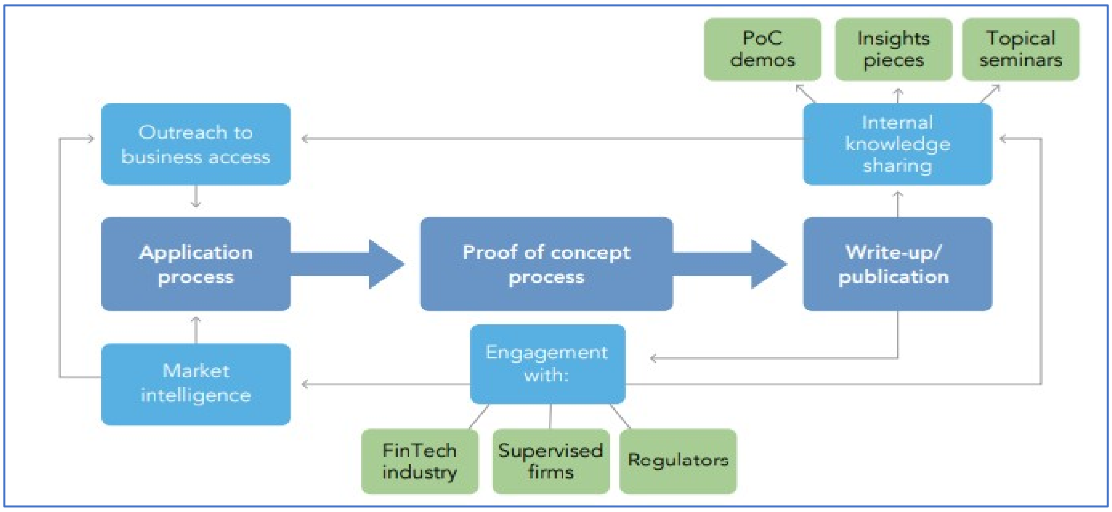
The specific timeline for each PoC and success criteria will be agreed upon before starting work on the project. However, they aim to complete each PoC within a time frame of from 4 to 12 weeks. At the end of the process, they aim to publish a short, factual write-up on interaction with the firm during the PoC process on its website.

Figure 13 below explains the application and approval process for participating in the accelerators.

66 https://www.bankofengland.co.uk/-/media/boe/files/news/2016/june/fintech-accelerator.pdf

67 https://www.bankofengland.co.uk/-/media/boe/files/fintech/fintech-accelerator-faqs

Figure 13 - the application and approval process for participating in the accelerators in BoE



Source: World Bank, *How Regulators Respond to Fintech. Evaluating the Different Approaches - Sandboxes and Beyond*, Op. cit. page 27.

Chapter 4: Policy Assessment in Developing Innovation Facilitators

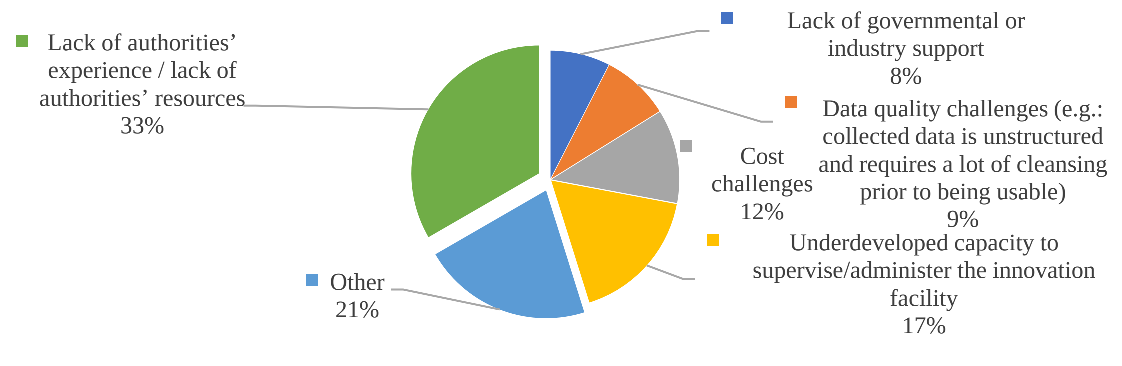
4.1 Main challenges for regulators in establishing the innovation facilitators and key success factors

The Participating Jurisdictions have identified several challenges in establishing IFs, such as:

- Lack of an overall strategic framework to regulate or develop the financial facilitators in the capital markets.
- The current legal and regulatory framework does not allow for the introduction of regulatory sandboxes (although innovation hubs and accelerators might be set up under the existing regulatory framework, there are no initiatives for these forms of IFs to be developed).
- Lack of regulators' expertise or experience regarding IFs, also reflected in the shortage of trained local personnel.
- Lack of resources to set up the IFs and/or undeveloped capacity to monitor and supervise the IFs.
- Lack of governmental or industry support, including unwillingness or inability of small companies to participate.
- Cost of the IFs.
- Data challenges to develop IFs.

Figure 14 below provides an overview of the main challenges encountered by participating jurisdictions in establishing IFs.

Figure 14 - Main challenges in establishing IFs



Source: GEMC IFs Survey

<u>For example</u>, the Brunei Darussalam Central Bank and the Capital Market Authority of Saudi Arabia have pointed out that innovative FinTech products and services are often complex, and it takes time to understand them, while running a Regulatory Sandbox and a FinTech Office is resource intensive.

The DFSA Dubai has explained that when it established its Innovation Programme, it was not clear how much time and effort the implementation of the Programme would involve.

The CNBV Mexico has identified as a challenge for the development of its regulatory sandbox how to communicate the characteristics and scope of the sandbox to potential applicants, as well as them in understanding the regulatory framework applicable to financial innovation projects.

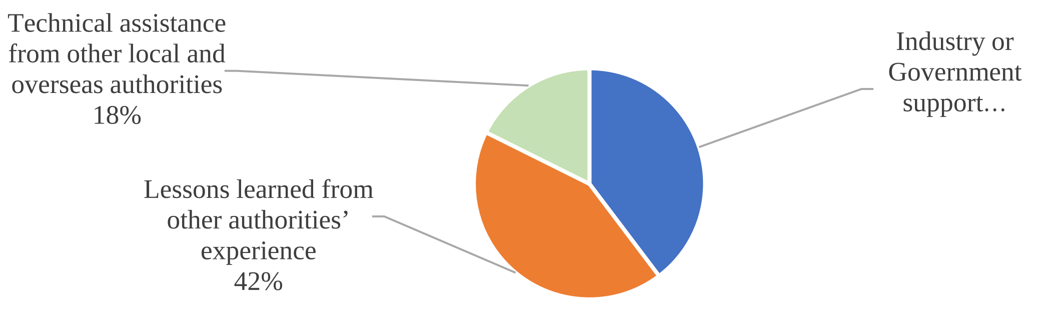
The challenges that Participating Jurisdictions have identified in establishing IFs are similar to those found in other reports. For example, the FinTech Working Group of the United Nations Secretary-General's Special Advocate for Inclusive Finance for Development (UNSGSA) points out the following:

"[…] regulators face five main difficulties in regulating technology enabled financial innovation:
1. They are not usually technology experts, which may make it difficult to understand and assess innovative business models and practices.
2. Many new innovators are not financial services providers as traditionally defined and may not definitively fall under regulatory oversight.
3. Central banks and regulators are traditionally risk-averse, often valuing stability over innovation. However, innovation can create opportunities to simultaneously enhance stability and inclusion.
4. Regulators are typically resource constrained, with technology-led innovation presenting additional challenges.
5. Pressure from incumbent financial services providers to maintain the status quo may also exist."[68]

Likewise, the World Bank has observed in its report "*Regulating Alternative Finance: Results from a Global Regulator Survey*" that "*many jurisdictions are seeking to change their regulatory framework for alternative finance. […] The next step is then deciding what to do and how to do it. Limited technical expertise within a regulator was cited as the largest challenge or obstacle to regulatory innovation, […] Limited funding or resources is also a significant issue, […] Many regulators […] understand that there is a need to take action but have limited technical expertise and resources to do so – and cannot risk building a regulatory framework that they can't subsequently adequately supervise.*" [69]

While acknowledging the above-mentioned challenges, the Participating Jurisdictions have also identified the following key success factors in establishing an IF which are reflected in Figure 15 below.

Figure 15 - Key factors that have helped the authorities in establishing an innovation facilitator



Source: GEMC IFs Survey

68 See UNSGSA, *Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech*, 2019, page 15, https://www.unsgsa.org/sites/default/files/resources-files/2020-09/UNSGSA_Report_2019_Final-compressed.pdf

69 World Bank, *Regulating Alternative Finance: Results from a Global Regulator Survey*, Op. cit., page 72,

International experience (e.g., analysing what other authorities are doing and how they are doing it) has helped Participating Jurisdictions in developing their own initiatives and deciding the type of IF to be develop in their jurisdictions.

For example, the CNV Argentina carried out an analysis of how other jurisdictions have implemented their IFs and based on such analysis it decided to launch its task force on IFs.

The MFSA Malta set up its FinTech Regulatory Sandbox after conducting an analysis of other jurisdictions' experience with IFs. Additionally, collaboration and consultation with local industry players were useful in identifying the best approach for establishing the regulatory sandbox, considering the local conditions.

The NBS, Slovak Republic notes that they have greatly benefitted from lessons learnt and experience-sharing from other EU regulators.

Notably, the Participating Jurisdictions have referred to three jurisdictions from the Asia Pacific region, namely MAS Singapore, ASIC Australia and SFC Hong Kong, among the top jurisdictions which have been taken as reference. However, the most important international reference is the FCA.[70] Some details on these references are presented in Chapter 3 of this Report.

In this regard, different forms of collaboration with local and foreign counterparts, including for the transfer of knowledge and experience, is a key factor to help developing an innovation facilitator. Also, cooperation with market participants and industry associations is a key element to get insight and develop knowledge in this area. These aspects are discussed in Chapter 2 of this Report.

4.2 Policy assessment: first step for setting up innovation facilitators

As mentioned earlier in Chapter 2, the main policy objectives for adopting the IFs are to enable an ecosystem that supports the introduction of novel, more efficient, less costly products, and services, as well as to incentivise competition, and in many cases also to enhance financial inclusion. In this context, financial sector policymakers and securities regulators worldwide face a regulatory dilemma in their attempt to achieve the right balance between facilitating innovation and protecting the financial system.

Chapters 2 and 3 laid down the main policy consideration taken by Participating Jurisdictions when assessing whether to establish an IF. This Chapter takes the discussion further and sets out a list of overall policy objectives and other considerations which securities regulators could consider when establishing an IF.

Figure 16 below sets out some key policy considerations for innovation hubs, regulatory sandboxes, and regulatory accelerators for consideration by securities regulators. This non-exhaustive list includes scope of the IF, the legal and regulatory framework needed, capacity and resources of the regulator, market conditions and stakeholders' ecosystem in the respective jurisdiction.

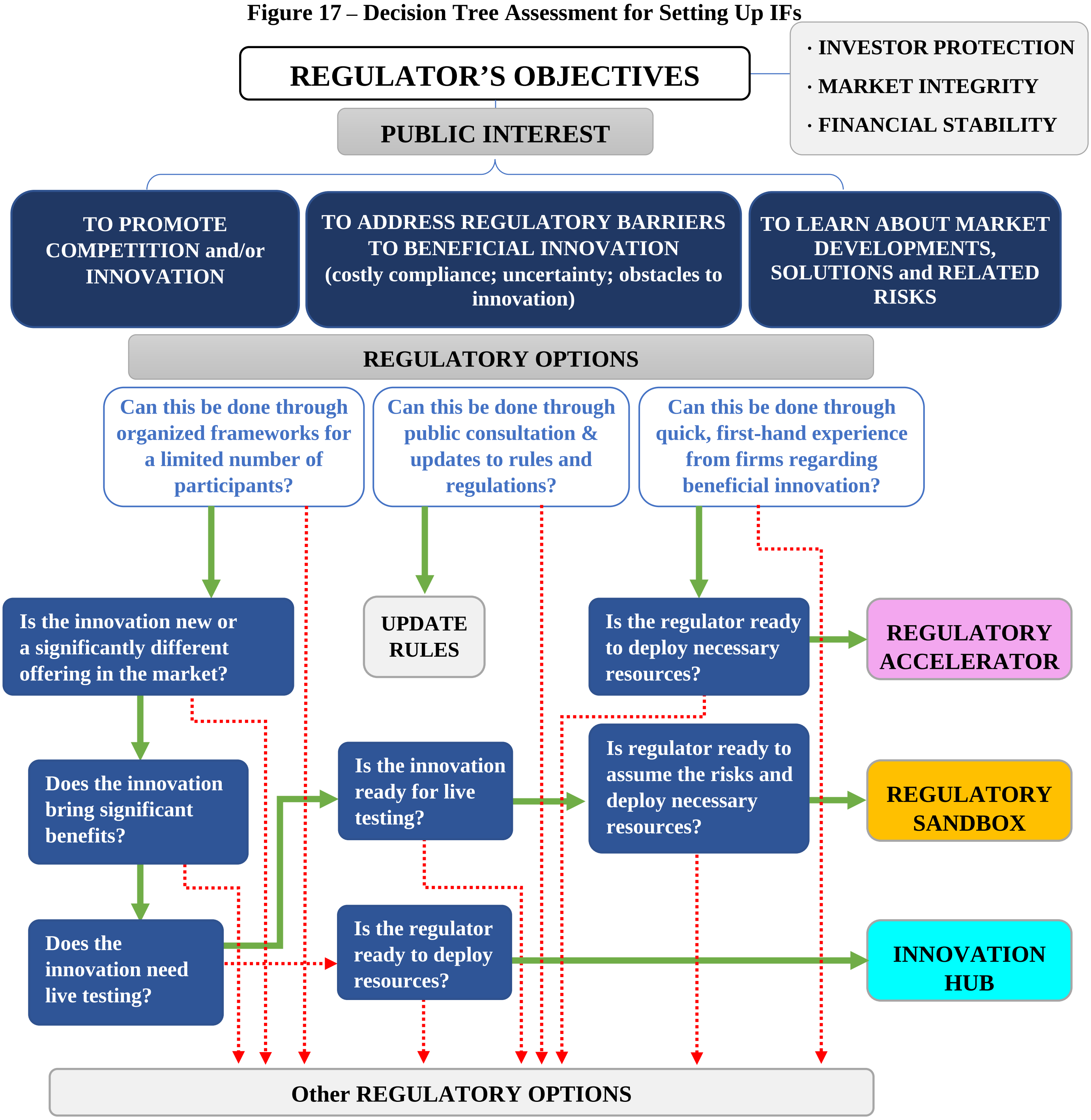
70 Other jurisdictions that have been taken as a reference by Participating Jurisdictions include ADGM Abu Dhabi, Reserve Bank of Australia (RBA), CBB Bahrain, CRSC China, DFSA Dubai, ISA Israel, Bank of Italy, Bank of Korea, Bank Negara Malaysia, Mexico, De Nederlandsche Bank, Bank of Russia, Bank of Spain, Swiss National Bank, SEC Thailand, and the Bank of England UK.

Figure 16 – Summary of policy considerations for securities regulators when establishing an IF			
	Innovation Hub	**Regulatory Sandbox**	**Regulatory Accelerator**
OVERALL POLICY OBJECTIVES	• **Learning about market developments and solutions** • **Addressing regulatory barriers to beneficial innovation** • **Promoting competition and/or innovation**		
Scope	Guidance to firms on the conformity of innovative financial products, services or business models with licensing or registration requirements and regulatory and supervisory expectations.	Enabling small scale, live testing of innovations by firms is done in a controlled environment (operating under a special exemption, allowance, or other limited, time-bound exception) under the regulator's supervision.	Developing partnership arrangements between firms and government authorities to 'accelerate' growth and innovation.
Legal and regulatory framework	No additional powers needed	Wide scope of powers to provide restricted authorisation and proportionate requirements and waivers, if required.	No additional powers needed
Capacity and Resources	Dedicated resources for set-up and operation	Substantial resources for deisgn, set-up, maintainance and monitoring.	Dedicated resources for set-up and operation
Market conditions	Relevant for those markets where a need for regulator input is observed but the approach is undecided. It is a good precursor to a regulatory Sandbox model.	Relevant for more mature markets with active (non)-licensed players.	Relevant for those regulators who want to improve their functioning and streamline compliance.
Stakeholders ecosystem	Market trust not a key factor but a useful value-add to ensure the success of the hub.	High level of trust from the market, as regulator's decisions are discretional and could be contested.	Trust and market participation.

A jurisdiction's environment and characteristics remain among the most important considerations when assessing the establisment of an IF. Before a jurisdiction decides to set up one or another type of IF, policymakers and securities regulators should objectively review the existing legal and regulatory framework, the stakeholder ecosystem including the private sector and other regulatory or supervisory bodies, the capacity and resources available, as well as the market conditions including competition frameworks and the overall maturity of the FinTech market. This assessment will help policy makers and securities regulators recognise the key objectives and priorities, the feasibility of setting up certain types of facilitators and the suitability of these decisions given the overall policy objectives and the jurisdiction's environment and characteristics.

Figure 17 below presents a decision tree to assist regulators in assessing the possibility of setting up an innovation facilitator. All three types of IFs have been included in this diagramme and are subject to the regulator's consideration of its objectives, scope of regulatory options and available resources, as well as the regulator's consideration of the characteristics of the ecosystem in which financial innovation is taking place. In considering the decision tree, regulators should keep in mind that IFs are not mutually exclusive and they can morph from one type into the other or can even be developed in tandem (as mentioned in some of the examples provided by the participating jurisdictions), e,g., a jurisdiction could cycle through the different IFs.

Figure 17 – Decision Tree Assessment for Setting Up IFs



(green arrow)	Answer to question is "YES"
(red dotted arrow)	Answer to question is "NO"
UPDATE RULES	Regulator to consider updating rules and regulations through public consultation
Other REGULATORY OPTIONS	Regulator to consider other regulatory options available, subject to its scope, objectives and resources
REGULATORY ACCELERATOR	Regulator to consider the setting up of a regulatory accelerator
REGULATORY SANDBOX	Regulator to consider the setting up of a regulatory sandbox
INNOVATION HUB	Regulator to consider the setting up of an innovation hub

Chapter 5: Conclusion and Recommendations

Based on the responses provided by Participating Jurisdictions and the analysis presented in previous sections of this Report, this chapter proposes four key recommendations that emerging markets should consider when developing IFs.

As reiterated in this Report, a jurisdiction's environment and characteristics remain among the most important considerations when assessing the establisment of an IF. Before a jurisdiction decides to set up one or another type of IF, policy makers and securities regulators should objectively review a number of factors (see recommendation 1 below). This assessment will help the relevant authorities recognise the key objectives and priorities, the feasibility of setting up certain types of IFs and the suitability of these decisions given the overall policy objectives and the jurisdiction's environment and characteristics.

Recommendation 1. The relevant authorities should develop effective frameworks to support financial innovation, including IFs. Prior to the establishment of IFs, the relevant authorities should undertake a comprehensive analysis and assessment to ensure that the functions, scope, and operational structure of the IFs are designed in view of the local market conditions and are in accordance with the overall policy objectives. The relevant authorities should consider the potential impact IFs could have on investor protection, market integrity and financial stability.

A regulatory response to financial innovation requires a balanced approach between the potential opportunities of innovation against the risks for investors, the integrity of markets and the stability of the financial system. The main challenge for the relevant authorities refers to the development of new methods of identifying, monitoring, and addressing the emerging risks in the financial system. The use of technologies presents new risks and alters traditional risks inherent to the financial sector. To respond to this technological innovation, the relevant authorities should consider innovative regulatory approaches, notably by setting up IFs, which is one way to facilitate the understanding of market trends, assess the need for regulatory changes or adaptation, and set a strategy for the sound development of the market, with due regard to investor protection and financial stability.

Regulators considering the introduction of IFs should review thoroughly whether the establishment of IFs will bring significant benefits to the market and increase financial inclusion, ensuring the protection of investor and the overall public interest.

As mentioned in previous chapters, a comprehensive analysis and assessment should be carried out before IFs are established to ensure they are designed appropriately considering local market conditions and in light of FinTech and financial innovation developments in the respective jurisdiction. The relevant authorities need to clearly set out the objectives of the IFs which encompass learning about market developments and solutions; addressing regulatory barriers to beneficial innovation; and promoting competition and/or innovation. Some jurisdictions will also consider financial inclusion as one of the key policy objectives for setting up IFs.

These objectives should be set in a manner that serve public interest and do not bypass any legal and regulatory requirement, while ensuring investor protection, market integrity and the stability of the financial system.[71] The proposed innovation must bring new or emerging technologies or use existing technology in an innovative fashion. Test scenarios, expected outcomes, and target audience should be properly defined without jeopardizing the soundness of the industry and protecting the interests of investors. Any perceived risk should be properly mitigated. The relevant authorities should engage with key stakeholders, industry associations and other relevant authorities to keep track of their progress and to take any policy measures as and when necessary.

Relevant authorities should consider the steps laid out in the decision tree presented in Chapter 4 as guidance for setting up any IFs. In doing so, the relevant authorities should consider their objectives, scope of regulatory options and available resources, as well as the characteristics of the ecosystem in which financial innovation is taking place. During this initial step, the relevant authorities should also consider the setting up of innovation support functions i.e., a dedicated team or department to manage the operation of the IFs.

Moreover, given that many of the IFs participants are not under the regulatory perimeter, regulators need to determine whether the respective persons and activities should be brought under regulatory scrutiny or whether they could be regulated through the existing legal and regulatory framework.

Indeed, the implementation of IFs could provide regulators with important insights on the need to review the legal and regulatory framework to better accommodate the provision of regulated activities relying on FinTech. Together with the periodic review of the effectiveness of the specific IFs implemented, the regulators should therefore conduct pro-active reviews of the perimeter of regulation in what relates to IFs and to FinTech, more generally.

Recommendation 2. The objectives and functions of IFs should be clearly defined and should be made public. The relevant authorities should have in place innovation support functions with adequate resources according to the scope and objectives of the IFs. Good governance and accountability should be part of the design of the innovation facilitator.

Notwithstanding the various types of IFs, the main objectives could cover the following:

- Supporting innovation and promoting the development of financial products and services through innovation.

- Building and enhancing firms' understanding on the conformity of innovative financial products, services or business models with licensing or registration requirements and regulatory and supervisory expectations.

- Enabling small scale, live testing of innovations by firms is done in a controlled environment (operating under a special exemption, allowance, or other limited, time-bound exception) under the regulator's supervision.

- Developing partnership arrangements between firms and government authorities to 'accelerate' growth and innovation.

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[71] In relation to other challenges that GEM jurisdictions face to foster their development, see the GEMC report on the *Development of Emerging Capital Markets: Opportunities, Challenges and Solutions*, October 2020, available at https://www.iosco.org/library/pubdocs/pdf/IOSCOPD663.pdf

- Serving as a communication channel with the FinTech sector to promote compliance culture from the early stage of design and implementation of financial innovations.

- Increasing the regulator’s understanding and knowledge of the innovative products and services to analyse the risks and opportunities of new business models and underlying technologies.

In addition to having clear objectives, the IFs should be transparent and should have adequate resources and tools to support their effective operation, as well as have mechanisms for evaluation and review of the outcomes. Good governance in terms of involving the senior management for the supervision and the reporting lines of the IF is essential. This could also promote accountability by the IF and the regulator before investors, innovation firms, and market participants.

The relevant authorities should have in place innovation support functions i.e., a dedicated team or department to manage the operation of the IFs. Staff should cover a combined set of skills and expertise covering both financial services and computer science and IT knowledge. The feasibility of having appropriate innovation support functions including the resources needed should be an essential part of the assessment under Recommendation 1.

The relevant authorities should ensure that adequate mechanisms and resources remain effective throughout the life of the IF, including for assessing the outcomes of IFs operation. The operational functioning and resourcing of IFs should be periodically reviewed and, where appropriate, revised to ensure that they remain suitable to their initial objectives and scope. This is also important considering that IFs are not mutually exclusive and they can morph from one form into the other or can even be developed in tandem (as referred to by some participating jurisdictions).

Ensuring consistency in setting up the testing parameters and equal treatment in similar situations is key to minimise the risks related to the operation of IFs. The relevant authorities should ensure that their staff receive adequate and ongoing training with regard to FinTech developments, including IFs. Effective mechanisms for knowledge transfer within the relevant authorities should also be in place.

Recommendation 3. The scope of eligible entities and the criteria for application and selection should be clearly defined, transparent, and made public.

Equal opportunities for access to IFs are important to ensure a level playing field. While eligibility criteria for accessing IFs may vary across jurisdictions, such criteria should be an essential part of the design for access to IFs. The eligibility criteria should be clearly defined, public and transparent. Moreover, the relevant authorities should have in place robust arrangements for evaluating applications in view of the objectives of the IF.

Depending on the type of IFs, some or all of the following eligibility criteria should be considered for application:

- the innovation is new and/or different from those currently available;

- the innovation has the potential to provide a better outcome for investors, for market integrity and for financial stability, overall;

- the innovator has conducted research to understand the regulatory framework before approaching the innovation facilitator;

- the innovation has reached a sufficiently mature stage considering the resources invested and the development stage of the innovation;

- the innovator has ensured that potential risks arising from the proposed innovation are assessed and mitigated, including to consumers and the market; and

- a commitment by the innovator to investor protection and culture of compliance.

The most common criterion remains the requirement to demonstrate genuine innovation. In general, this criterion requires demonstration that the financial product or service is new, meets an unexploited consumer need, or does that better than existing market players or products.

Irrespective of the defined eligibility criteria, the relevant authorities should touch base with applicants during the process to promote transparency and building applicants' confidence. A fruitful dialogue between the regulator and the entities interested in developing innovative business models, products or services, for instance in the form of an Innovation Hub, could be beneficial for both parties.

Likewise, it is important that the arrangements put in place are transparent in relation to what happens when an entity is ready to leave the IF, notably the exit criteria. While such criteria may vary across jurisdictions, this is also an essential part in the design of IFs. Similar to the eligibility criteria, the exit criteria should be clearly defined, public and transparent.

These features may relate to other components of the IF's design, such as the testing period and the potential waivers allowed under the IFs. Indeed, once accepted to the IF, and throughout the testing period, the participants should comply with the arrangements of the IF. For example, participants should keep the regulator informed based on the approved plan and other applicable requirements (e.g., testing requirements, or limits on the number and characteristics of real clients that could participate in the testing phase, among other requirements). Early exit from the IF could be triggered if the participant fails to comply with those requirements. Notably, although the participation in some IFs might involve the application of some regulatory exceptions under specific circumstances, the use of proportionality or regulatory discretion does not mean the disapplication of the existing legal and regulatory framework.

Recommendation 4. The relevant authorities should have in place mechanisms for cooperation and exchange of information with both local and foreign relevant authorities to facilitate a holistic approach and knowledge regarding issues of a cross-cutting nature or issues that may fall outside their statutory responsibility.

Given the cross-sectoral and cross-border nature of technology-driven financial innovation, it becomes critical to have in place cooperation tools and arrangements both domestically and internationally. These would involve cooperation with other domestic authorities, cooperation with market participants, and cross-border cooperation.

Close cooperation and knowledge sharing across various regulatory agencies, both financial and non-financial, are needed to address cross-cutting issues in other financial sectors or other related policy areas (e.g., competition, consumer protection, etc.). At the same time, greater cross-jurisdictional cooperation on FinTech matters can be beneficial to a global FinTech enabling environment while mitigating risks and regulatory arbitrage. The avenues for cooperation could also be formalised by way of a memorandum of understanding between the regulatory agencies on both the local and international context.

Sharing information on real cases and how the respective authority has dealt with the application of the existing regulatory framework, how the authority has decided to grant some limited and temporary exceptions in relation to certain regulations, and how the authority has assessed the outcomes of the innovation facilitator and the participating entities is essential for regulators to understand the challenges and opportunities brought about by this type of innovation, but also to develop intelligence and capabilities to address market developments that could emerge or that are already emerging in the jurisdiction.

Annex 1 - Glossary of Acronyms

AMERC	Africa / Middle East Regional Committee
AFSA	Financial Services Authority of the AIFC (Kazakhstan)
AIFC	International Financial Centre (Kazakhstan)
APRC	Asia-Pacific Regional Committee
ASIC	Australian Securities and Investments Commission
BIS	Bank of International Settlements
BoE	Bank of England
CCAF	Cambridge Centre for Alternative Finance
CGAP	Consultative Group to Assist the Poor
Consultation Report	GEMC FINWG Consultation Report
DAG	Digital Acceleration Grant
DFAP	Digital Finance Advisory Panel
DFSA	Dubai Financial Services Authority
DIFC	Dubai International Financial Centre
DLTs	Distributed Ledger Technologies
DMA	Direct Market Access
ECON	European Parliament's Committee on Economic and Monetary Affairs
EFIF	European Forum for Innovation Facilitators
ERC	European Regional Committee
ERS	Enhanced Regulatory Sandbox, Australia
ESAs	European Supervisory Authorities
ESG	Environmental, Social, and Governance
FCA	Financial Conduct Authority (UK)
FinTech	Financial Technologies
FINWG	GEMC FinTech Working Group
FIs	Financial Institutions
FSCA	Financial Sector Conduct Authority of South Africa
FSI	Financial Stability Institute
FSRA	Financial Services Regulatory Authority (FSRA) of the Abu Dhabi Global Market
GEM	Growth and emerging markets
GEMC	Growth and Emerging Markets Committee
GFIN	Global Financial Innovation Network
HKMA	Hong Kong Monetary Authority
IADB	Inter-American Development Bank
IARC	Inter-American Regional Committee
ICOs	Initial Coin Offerings
IFC	International Financial Corporation
IFs	Innovation Facilitators
IH	Innovation Hubs

IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IT	Information Technology
KYC	Know-Your-Customer
MoUs	Memorandum of Understanding
PoC	Proofs of Concept
RegTech	Regulatory Technology
ROFIEG	Expert Group on Regulatory Obstacles to Financial Innovation (European Commission)
RS	Regulatory Sandbox
SMEs	Small and medium-sized enterprises
SupTech	Supervisory Technology
UAE	United Arab Emirates
UNSGSA	United Nations Secretary-General's Special Advocate for Inclusive Finance for Development
WEF	World Economic Forum

Annex 2 - Participating Jurisdictions

Jurisdiction	Authority
AIFC (Kazakhstan) International Financial Centre (AIFC), Kazakhstan	AIFC (Kazakhstan) Financial Services Authority
Angola	Comissão do Mercado de Capitais
Argentina	Comisión Nacional de Valores
Bahrain (Kingdom of)	Central Bank of Bahrain
Bangladesh	Bangladesh Securities and Exchange Commission
Bermuda	Bermuda Monetary Authority
Brazil	Comissão de Valores Mobiliários
Brunei	Brunei Darussalam Central Bank (BDCB)
China	China Securities Regulatory Commission
Chinese Taipei	Financial Supervisory Commission
Colombia	Superintendencia Financiera de Colombia
Croatia, Republic of	Croatian Financial Services Supervisory Agency
Cyprus	Cyprus Securities and Exchange Commission
Czech Republic	Czech National Bank
Dubai International Financial Centre (DIFC), Dubai	Dubai Financial Services Authority
Dominican Republic	Superintendencia del Mercado de Valores
Egypt	Financial Regulatory Authority
Estonia	Finantsinspektsioon
Ghana	Securities and Exchange Commission
Hungary	Magyar Nemzeti Bank (The Central Bank of Hungary)
India	Securities and Exchange Board of India
Indonesia	Indonesia Financial Services Authority
Iran	Securities and Exchange Organization
Jordan	Jordan Securities Commission
Korea, Republic of	Financial Services Commission / Financial Supervisory Service
Kuwait	Capital Markets Authority
Lithuania	Bank of Lithuania
Malta	Malta Financial Services Authority
Mauritius	Financial Services Commission
Mexico	Comisión Nacional Bancaria y de Valores
Morocco	Autorité Marocaine du Marché des Capitaux
Nepal	Securities Board of Nepal
Nigeria	Securities and Exchange Commission
Pakistan	Securities and Exchange Commission
Panama	Superintendencia del Mercado de Valores
Paraguay	Comisión Nacional de Valores
Peru	Superintendencia del Mercado de Valores
Poland	Polish Financial Supervision Authority

Qatar	Qatar Financial Centre Regulatory Authority
Russia*	The Bank of Russia
Saudi Arabia	Capital Market Authority
Serbia, Republic of	Securities Commission
Slovak Republic	The National Bank of Slovakia
South Africa	Financial Sector Conduct Authority
Thailand	Securities and Exchange Commission
Tunisia	Conseil du marché financier
United Arab Emirates	Securities and Commodities Authority
Uruguay	Banco Central del Uruguay
Zambia	Securities and Exchange Commission

* In the immediate aftermath of the conflict in Ukraine, arrangements were put in place so that the Central Bank of Russia (ordinary member), the Ministry of Finance of the Republic of Belarus (associate member) and the Russian National Association of Securities Market Participants (affiliate member) would not be able to participate in any respect in any IOSCO processes or fora until further notice. The IOSCO Board has resolved that any future proposal for a resumption of active membership by one or more of these members could only come into effect after being discussed at a meeting of the IOSCO Board and following a formal Board decision.

Annex 3 - GEMC Fintech Working Group (FINWG)

GEMC member	Participating staff
Comisión Nacional Bancaria y de Valores (MEXICO) – Chair of the FINWG	• Antonio Quesada (Chair of the WG), until October 2021; Lucía Buenrostro Sánchez (Chair of the WG), since November 2021. • Vanessa Veintimilla Brando • Ethel Ramirez • Dorian Loyo • Gilberto Perez
AIFC (Kazakhstan) Financial Services Authority INTERNATIONAL FINANCIAL CENTRE, AIFC - Kazakhstan	• Almas Zholamanov • Assylbek Davletov • Ramazan Abdirassilov • Viktoriya Tyan • Yerkezhan Akylbekova
Financial Regulatory Authority (EGYPT)	• Christine Beshara • Haytham Fathi • Islam Azzam • Judge Khaled Elnashar • Mohammed Omran • Tarek Fathy Ibrahim • Gamal Elsayed • Mahmoud Gebril
Capital Markets Authority (KUWAIT)	• Abdullah Khaled AlTerkait • Abdulrahman Mohamad
Securities and Exchange Commission (PHILIPPINES)	• Varelie Vargas • Emilio Benito Aquino • Eretzisrel B. Valle
Polish Financial Supervision Authority (POLAND)	• Jan Ziomek
Capital Market Authority (SAUDI ARABIA)	• Ahmad Al-Jared • Asma Abdulrahman Alfaleh • Salman AlGhamdi
Securities and Exchange Commission (THAILAND)	• Aunchisa Tapanakornvut • Jantakarn Pangutha • Julawadee Worasakyothin • Nopnuanparn Pavasant • Parnward Banternghansa • Phireeyaphong Ratsameelerkset
Securities and Commodities Authority (UNITED ARAB EMIRATES)	• Maryam Buti Al Suwaidi • Khalid Ghaith Al Zaabi • Pooja Singh
IOSCO General Secretariat	• Raluca Tircoci-Craciun • Josafat De Luna Martínez • Seung Eun Lee • Rinasha Appavoo

Annex 4 - Innovation Facilitators in the Participating Jurisdictions

Jurisdiction	Organisation	Type of Innovation Facilitators	Link to websites
Angola	Central Bank of Angola (BNA)	Innovation hub, Regulatory sandboxes, and Accelerators -	Laboratório de Inovação do Sistema de Pagamentos (LISPA) - https://lispa.ao/
AIFC (Kazakhstan) International Financial Centre (AIFC) (Kazakhstan)	AIFC (Kazakhstan) Financial Services Authority	Innovation hubs Regulatory sandboxes Accelerators	https://afsa.aifc.kz/ https://fintech.aifc.kz/
Kingdom of Bahrain	Central Bank of Bahrain	Innovation hubs Regulatory sandboxes Accelerators	www.cbb.gov.bh/fintech
Bermuda	Bermuda Monetary Authority	Innovation hubs Regulatory sandboxes	https://www.bma.bm/insurance-innovation
Brazil	Comissão de Valores Mobiliários	Innovation hubs Regulatory sandboxes Accelerators	Links to the innovation facilitators of the CVM (in Portuguese only) Fintech Hub: http://www.cvm.gov.br/export/sites/cvm/noticias/anexos/2016/PORTARIA105.pdf Lab: http://www.labinovacaofinanceira.com/ Regulatory sandbox: http://www.cvm.gov.br/legislacao/sandbox_regulatorio.html Links to the innovation facilitators of the BCB (in Portuguese only): Website of LIFT Lab: http://www.liftlab.com.br
Brunei	Brunei Darussalam Central Bank (BDCB)	Innovation hubs Regulatory sandboxes	https://www.bdcb.gov.bn/development/fintech
China	China Securities Regulatory Commission	Innovation hubs	www.szse.cn/marketservices/technicalservice/index.html
Chinese Taipei	Financial Supervisory Commission	Innovation hubs Regulatory sandboxes Accelerators	Regulatory Sandbox: The FSC sets up a FinTech area on its official website and issues press releases from time to time to disclose the current status of the sandbox. (https://www.fsc.gov.tw/en/home.jsp?id=175&parentpath=0,4) Accelerator: FinTechSpace also has its official website

Jurisdiction	Organisation	Type of Innovation Facilitators	Link to websites
			and publish FinTech industry news at times. (https://www.fintechspace.com.tw/en/)
Colombia	Superintendencia Financiera de Colombia	Innovation hubs Regulatory sandboxes Accelerators Other	https://www.superfinanciera.gov.co/jsp/10097165 https://www.superfinanciera.gov.co/publicacion/10103299 https://www.superfinanciera.gov.co/publicacion/10099575 https://www.superfinanciera.gov.co/publicacion/10103186 https://www.superfinanciera.gov.co/inicio/innovasfc/licenciamiento-fintech-10103044 https://appsco.platzi.com/cursos/fintech/
Croatia, Republic of	Croatian Financial Services Supervisory Agency	Innovation hubs	https://www.hanfa.hr/fintech1/
Cyprus	Cyprus Securities and Exchange Commission	Innovation hubs	https://www.cysec.gov.cy/CMSPages/GetFile.aspx?guid=8c910f68-43db-49eb-b08e-8e3df32fff27 https://www.cysec.gov.cy/en-GB/cysec/innovation-hub/ https://www.cysec.gov.cy/en-GB/cysec/innovation-hub/request-support-forms/
DIFC, Dubai	Dubai Financial Services Authority	Regulatory sandboxes	http://www.dfsa.ae/FinTech
Dominican Republic	Central Bank of the Dominican Republic and the Superintendencies of the Securities Market, Banks, Pensions and Insurance.	Innovation hub	https://www.hubifrd.gob.do/
Egypt	Financial Regulatory Authority	Innovation hubs Regulatory sandboxes Other	https://fintech-egypt.com/Hub
Estonia	Finantsinspektsioon	Innovation hubs	https://www.fi.ee/en/finantsinspektsioon/financial-innovation
Hungary	Magyar Nemzeti Bank (The Central Bank of Hungary)	Innovation hubs Regulatory sandboxes	Regarding the Innovation Hub:

Jurisdiction	Organisation	Type of Innovation Facilitators	Link to websites
			▪ Information Repository: https://www.mnb.hu/en/innovation-hub/fintech-legal-repository Regulatory Support Platform: https://mnbpoll.mnb.hu/Survey.aspx?surveyid=73426428&lng=en-US Regarding the Regulatory Sandbox: https://www.mnb.hu/en/innovation-hub/regulatory-sandbox
India	Securities and Exchange Board of India	Regulatory sandboxes Other	Regulatory Sandbox: https://www.sebi.gov.in/legal/circulars/jun-2021/revised-framework-for-regulatory-sandbox_50521.html Innovation Sandbox: https://www.sebi.gov.in/legal/circulars/feb-2021/revised-framework-for-innovation-sandbox_48983.html
Indonesia	Indonesia Financial Services Authority	Innovation hubs Regulatory sandboxes Accelerators	https://ojk.go.id/gesit
Iran	Securities and Exchange Organization	Regulatory sandboxes Other	www.ifb.ir www.finstars.ir www.seo.ir
Korea, Republic of	Financial Services Commission/Financial Supervisory Service	Innovation hubs Regulatory sandboxes Accelerators	Regulatory sandbox website: https://sandbox.FinTech.or.kr/?lang=en Fintech Center Korea website (Innovation Hub and Accelerator): https://FinTech.or.kr/web/user/enMain.do
Lithuania	Bank of Lithuania	Innovation hubs Regulatory sandboxes Accelerators Other	https://www.lb.lt/en/fintech-and-innovation.
Malta	Malta Financial Services Authority	Innovation hubs Regulatory sandboxes	https://www.mfsa.mt/fintech-2/regulatory-sandbox/
Mauritius	Financial Services Commission	Regulatory sandboxes	https://www.edbmauritius.org/info-centre/regulatory-sandbox
Mexico	Comisión Nacional Bancaria y de Valores	Regulatory sandboxes	Fintech Law, articles 93 to 95. https://www.cnbv.gob.mx/Normatividad/Ley%20para

Jurisdiction	Organisation	Type of Innovation Facilitators	Link to websites
			%20Regular%20las%20Instituciones%20de%20Tecnología%20Financiera.pdf Fintech Law: https://www.cnbv.gob.mx/Normatividad/Ley%20para%20Regular%20las%20Instituciones%20de%20Tecnolog%C3%ADa%20Financiera.pdf Innovative models secondary rules: https://www.cnbv.gob.mx/Normatividad/Disposiciones%20de%20car%C3%A1cter%20general%20relativas%20a%20las%20sociedades%20autorizadas%20para%20operar%20modelos%20novedosos%20a%20que%20hace%20referencia%20la%20Ley%20para%20Regular%20las%20Instituciones%20de%20Tecnolog%C3%ADa%20Financiera.pdf https://www.gob.mx/cnbv/acciones-y-programas/preguntas-frecuentes-sandbox https://www.gob.mx/cnbv/acciones-y-programas/registro-modelos-novedosos Financial Technology Institutions Document´s CNBV: https://www.gob.mx/cnbv/documentos/documentos-instituciones-de-tecnologia-financiera
Nigeria	Securities and Exchange Commission	Other	https://sec.gov.ng/finport/
Pakistan	Securities and Exchange Commission	Innovation hubs Regulatory sandboxes	https://www.secp.gov.pk/document/secp-regulatory-sandbox-guidelines-2019/?wpdmdl=37476&refresh=5f1819ad54d981595414957
Peru	Superintendencia del Mercado de Valores	Regulatory sandboxes	https://www.smv.gob.pe/Frm_VerArticulo?data=03EF732A93083373F29252D06F04375305D896EFEBC

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			5BFB56D50BDBA4F0348D6AEFAB9253A074E3BCDD9BD69C06EFF5D312F39C1E9EF470E
Poland	Polish Financial Supervision Authority	Innovation hubs	https://fintech.gov.pl/en/innovation-hub-menu
Qatar	Qatar Financial Centre Regulatory Authority	Innovation hubs Regulatory sandboxes Accelerators	https://fintech.qa/#programs
Russia	The Bank of Russia	Regulatory sandboxes	https://www.cbr.ru/eng/fintech/regulatory_sandbox/ https://www.cbr.ru/eng/fintech/
Saudi Arabia	Capital Market Authority	FinTech Lab	https://cma.org.sa/en/Market/Fintech/Pages/Default.aspx
Slovak Republic	The National Bank of Slovakia	Innovation hubs	https://www.nbs.sk/en/financial-market-supervision1/fintech https://www.nbs.sk/en/financial-market-supervision1/fintech/consultation-papers https://www.mfsr.sk/en/finance/financial-market/financial-inovation/
South Africa	Financial Sector Conduct Authority	Innovation hubs Regulatory sandboxes Accelerators	https://www.ifwg.co.za/about-us/
Thailand	Securities and Exchange Commission	Regulatory sandboxes	https://www.sec.or.th/EN/Pages/News_Detail.aspx?SECID=8228&NewsNo=121&NewsYear=2020&Lang=EN https://www.sec.or.th/EN/Pages/News_Detail.aspx?SECID=8373&NewsNo=144&NewsYear=2020&Lang=EN
United Arab Emirates	Securities and Commodities Authority	Regulatory sandboxes	https://www.sca.gov.ae/en/about-us/initiatives/financial-technology.aspx https://reglab.gov.ae/
Uruguay	Banco Central del Uruguay	Innovation hubs Other	https://www.bcu.gub.uy/NOVA-BCU/Paginas/default.aspx