

Regulatory Sandboxes and Innovation Hubs for FinTech

Impact on innovation, financial
stability and supervisory
convergence



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Abstract

The unprecedented leap and the disruption potential of the emerging technological developments in finance have challenged the existing institutional and regulatory arrangements in the financial sector. Jurisdictions across globe have adopted various initiatives to keep abreast of the rapid technological developments and to encourage the development of their FinTech ecosystems. This study examines the setting up of regulatory sandboxes and innovation hubs as part of the overall strategies pursued by jurisdictions in response to the FinTech developments.

This document was prepared by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the Committee on Economic and Monetary Affairs (ECON).

This document was requested by the European Parliament's committee on Economic and Monetary Affairs.

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Manuscript completed: September 2020

Date of publication: September 2020

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This document is available on the internet at:

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For citation purposes, the study should be referenced as: Parenti, R., *Regulatory Sandboxes and Innovation Hubs for FinTech*, Study for the committee on Economic and Monetary Affairs, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, 2020.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
AML	Anti-Money Laundering
API	Application Programming Interface
CCAF	Cambridge Centre for Alternative Finance
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CBDC	Central Bank Digital Currency
CHF	Swiss Francs
CPMI	Committee on Payments and Market Infrastructures
DLT	Distributed Ledger Technology
EDPS	European Data Protection Supervisor
EFIF	European Forum for Innovation Facilitators
EFTA	European Free Trade Agreement
ESAs	European Supervisory Authorities
EBA	European Banking Authority
EDPB	European Data Protection Board
EIOPA	European Insurance and Occupational Pensions Authority
ESMA	European Securities and Markets Authority
EU	European Union
ENISA	European Union Agency for Cybersecurity
FIU	Financial Intelligence Unit
FSB	Financial Stability Board
GFIN	Global Financial Innovation Network

GPFI	Global Partnership for Financial Inclusion
IAIS	International Association of Insurance Supervisors
ICO	Initial Coin Offering
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
MoU	Memorandum of Understanding
SRSP	Structural Reform Support Programme
UK FCA	UK Financial Conduct Authority
UNSGSA	United Nations Secretary-General's Special Advocate for Inclusive Finance for Development

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EXECUTIVE SUMMARY

Background

The financial sector is complex, inherently risky and highly regulated. The increasing use of technology in finance ('FinTech') in recent years has added complexities and posed challenges for regulators and supervisors across the globe. FinTech also brings a promise of increased competition, new, more efficient or more beneficial products and services, financial inclusion and improved consumer choice. Jurisdictions across the European Union (EU) and beyond have adopted various initiatives to keep abreast of the rapid technological developments and to encourage the development of their FinTech ecosystems. In the face of the rapidly changing environment and given the limitations of traditional law making, jurisdictions have resorted to innovative regulatory approaches to respond to the innovative disruptions. This study examines the setting up of regulatory sandboxes and innovation hubs (collectively referred to as 'innovation facilitators') as part of the overall strategies pursued by various jurisdictions in response to the FinTech developments.

Their increasing level of adoption and the proliferation of different models in recent years have prompted a number of concerns, such as the potential for regulatory arbitrage and 'race-to-the-bottom' style competition among jurisdictions, distortion of the level playing field, and more broadly, consumer protection and financial stability. In the context of the Single Market, concerns originate from the fact that innovation facilitators operate at a national level, which could lead to the development of divergent regulatory and supervisory approaches to the innovative use of technology in finance. This, in turn, can lead to market fragmentation and impede the scaling-up of financial innovations across the EU.

Aim

Against this background, this study aims to provide an overview of the level of dissemination and the key features of innovation facilitators, mainly focusing on the models adopted in the EU and the EFTA countries. The objective is to identify certain key elements of the design and operational parameters of innovation facilitators, which impact on the potential benefits and risks linked to their operation.

Looking ahead, the study discusses certain proposals for strengthened coordination at EU level to mitigate the risk of diverging supervisory practices and market fragmentation and to contribute to the formulation of a EU-wide policy response to FinTech.

Summary

The FinTech ecosystem brings new players alongside the already established regulated entities, changing the dynamics in the financial system. The application of new technologies in the financial sector carries new risks and alters the already existing risks inherent to the financial system. Assessing such altered or new risks in a highly regulated space requires a deep understanding of the technologies used to deliver the innovative services or products. Often, it is not clear how the existing requirements should be applied to ensure that they achieve their intended purpose, while still allowing for a possibly beneficial new product, process or a service to develop. Performing these tasks demands a significant build-up of supervisory knowledge and capacity.

Therefore, an important part of the overall regulatory strategies by jurisdictions have been initiatives aiming to increase supervisor's understanding of new FinTech activities and their business models, risks and incentives. The various forums for supervisory outreach to the FinTech industry that had developed since the advent of FinTech, have now become more institutionalised in the form of innovation hubs and regulatory sandboxes, referred together as 'innovation facilitators'.

In general, **innovation hubs** provide a specific scheme, via which firms can engage with the supervisory authority to raise questions and seek clarifications or non-binding guidance about FinTech related issues. **Regulatory sandboxes** enable a direct testing environment for innovative products, services or business models, pursuant to a specific testing plan, which usually includes some degree of regulatory lenience combined with certain safeguards. Innovation hubs are often a compelling first step in the innovative regulatory journey and meanwhile have essentially become the norm. Although regulatory sandboxes are less widespread, recent trends show an increasing interest in them.

The main **expected benefits** from the operation of innovation facilitators include enhancing supervisory understanding of emerging technologies, which can inform an adequate policy response to FinTech. For innovators, they can help reduce regulatory uncertainties and provide clarification on regulatory and supervisory expectations. In a broader context, it is expected that the operation of innovation facilitators can spur competition and beneficial innovation in the financial sector.

However, scholarship and standard-setting bodies have also pointed at **certain risks**. Some of them are broader and emerge in the context of the overall strategies applied by jurisdictions to raise their attractiveness as a FinTech hub, such as the potential for regulatory arbitrage and 'race-to-the-bottom'. Such potential emerges in the case of regulatory sandboxes, if their design would allow for the disapplication of substantial regulatory standards and safeguards. Other risks are specific to innovation facilitators, such as competition and level playing field concerns, related to preferential treatment granted to entities within an innovation facilitator. In the context of the Single Market, innovation facilitators bear a risk of **market fragmentation**, if their operation leads to divergent supervisory practices, which can impede the scaling up of innovative services or products across the EU.

In addition, certain choices made in the design and operational parameters of an innovation facilitator may emphasise certain risks and would require specific safeguards to mitigate potential negative impacts. Highly relevant features of innovation facilitators are their objectives, scope, access conditions, nature of regulatory relief and testing parameters (if applicable), as well as the follow-up and tools for knowledge transfer.

Clear and transparent **objectives** of the innovation facilitators help manage market participants' expectations and provide a basis for an internal review of the effectiveness of the facilitator.

The **scope and parameters for access** to the innovation facilitators are relevant in the context of ensuring cross-sectoral consistency of supervisory practices and a level playing field. Sectoral restrictions of the innovation facilitator's scope further accentuate existing regulatory borders and could hamper cross-sectoral innovations. Where a joint operation by all sectoral regulators is not possible, enhanced mechanisms for supervisory knowledge sharing across the different financial sectors are necessary.

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.

The key concern that the operation of regulatory sandboxes could compromise regulatory standards and safeguards is related to the **regulatory relief** granted to sandbox entities. In the EU, the currently operational sandboxes apply customized sandbox regimes: i.e. the application of the existing rules is adapted to the individual propositions admitted to the sandbox. The latitude afforded to supervisors

to waive certain regulatory requirements or to apply them in a flexible way varies among Member States, and faces the boundaries set by the EU harmonisation. Most commonly, to customise the applicable requirements, the operational sandboxes in the EU use the exercise of **legally embedded levers of proportionality**, which allow for supervisory discretion by taking into account certain factors, such as the risk profile, or the size, complexity and interconnectedness of the firms concerned. Within a sandbox, the flexible application of some requirements is combined with **specific testing parameters**, which are determined on a case-by-case basis and tailored to the nature of the testing activity. Scholars emphasise the need of establishing a robust and transparent framework for the available customisation tools and for the principles for determining the testing parameters. In addition, robust customer protection safeguards and an adequate framework for a review and scrutiny of the operation and outcomes of the sandbox should form part of such framework.

Customised sandbox regimes bear the risk of inconsistent, divergent practices applied to peer entities, and across Member States. Compared to other “sandboxing” models used outside the EU, their main benefit appears to be related to the acquired enhanced knowledge and understanding, both for the entities and for the supervisors. Therefore, robust and adequate mechanisms to optimise the use of such knowledge are essential.

Adequate **knowledge sharing to the broader FinTech community** is vital to bridge the knowledge gaps emerging between entities within the facilitators and those outside. Moreover, active engagement with a broader range of stakeholders and proactively seeking consumer input can help mitigate the potential risk of ‘industry capture’. Proper channels for internal **supervisory knowledge transfer** are necessary to ensure a coherent supervisory approach. Where a single-sector regulator operates an innovation facilitator, it is important to ensure the adequate and necessary **flow of information to the other financial sectoral authorities**. Challenges and learnings in one sector can provide fruitful insights that are relevant for other sectors of the financial system and can help prevent risks that can grow in the gaps of sectoral oversight. Moreover, the novel complexities generated by FinTech often impact on a broader area of public policies. Therefore, **multidisciplinary supervisory cooperation** and knowledge sharing on issues such as competition, fraud, anti-money laundering, cybersecurity, consumer and data protection may be highly relevant in the FinTech space.

To date, no large-scale evaluation has been carried out to **assess the outcomes and the impact** of the operation of innovation facilitators in the EU. Granular and comparable aggregated data about key elements that are necessary for such an analysis is not available. This is mainly due to the short life span of innovation facilitators’ existence and the divergent modalities for publications of statistics. Once innovation facilitators become more established, carrying out such an assessment will be opportune. In the meantime, arrangements need to be made to ensure the availability of **granular and comparable data** for these purposes (such as number and type of entities, services, products and business models). In the case of regulatory sandboxes also relevant is information about the regulatory relief granted, the considerations for granting it and the safeguards applied. Such information should be shared within the EFIF to support ESAs’ monitoring and supervisory convergence work.

While a harmonised EU framework for the design and operational parameters of innovation facilitators can have certain advantages, it also presents some challenges. Going forward, however, there will be some merit for the ESAs to build on and further develop their recommendations for best practices. Moreover, **establishing certain common principles** would be valuable, in particular, regarding the statistics and key indicators that are to be published and shared to enable the collection of comparable data, as well as in relation to the arrangements for ensuring adequate knowledge sharing.

Furthermore, the direct experiential and strategic learnings from the operation of innovation facilitators could play an important role for **evidence-based policymaking**. While innovation

facilitators operate nationally, an important part of the policy response is developed at EU level. This necessitates appropriate channels for knowledge sharing at EU level to enable the formulation of an EU-wide policy response. In this context, the role of EFIF could be strengthened, in particular in speeding up the identification of strategic policy areas, in consolidating EU-wide platforms for outreach to the broader FinTech community or in multidisciplinary cooperation on crosscutting innovation-related issues.

Although the establishment of an **EU level regulatory sandbox** may seem far-fetched as of now, the possibility of a successful testing, which enables market access across the EU, would make EU Member States, collectively, a more attractive destination for FinTech innovation. EFIF should leverage the opportunity to coordinate cross border testing between nationally operated sandboxes and consider the feasibility of EU-wide experimental projects on specific targeted issues. An interesting proposal for such a targeted experimental project is contained in the recent proposal by the Commission for a Regulation on a pilot regime for market infrastructures based on DLT.

On a **global** scale, enhanced **cross-jurisdictional regulatory cooperation** on FinTech matters can be beneficial to create an international FinTech enabling environment and to mitigate risks of regulatory arbitrage. Engagement with, and up-close monitoring of, the work carried out via global supervisory initiatives (such as the GIFIN and BIS Innovation Hub), could provide useful insights for the policy formation work at EU level.

1. INTRODUCTION

The fast pacing digitisation and increasing use of new technologies in finance have transformed the financial services landscape in recent years. The unprecedented leap and the disruption potential of the recent technological developments have challenged the existing institutional and regulatory arrangements. Jurisdictions across the European Union (EU) and beyond have adopted a number of initiatives to keep abreast of the rapid technological developments and to encourage the development of their FinTech ecosystems.

This study examines the setting up of regulatory sandboxes and innovation hubs (collectively referred to as 'innovation facilitators') as part of the overall strategies pursued by various jurisdictions in response to the FinTech developments. Their increasing level of adoption and the proliferation of different models in recent years have prompted a number of concerns, such as the potential for regulatory arbitrage and 'race-to-the bottom' style competition among jurisdictions, for distortion of the level playing field, and more broadly on consumer protection and financial stability. A particular concern in the context of the Single Market originates from the fact that innovation facilitators operate on a national level, which could lead to barriers to knowledge sharing and to the development of divergent regulatory and supervisory approaches to the innovative use of technology in finance¹. This, in turn, can lead to market fragmentation and impede the scaling-up of financial innovations across the EU².

Against this background, the focus of this study lies on the models adopted in the EU Member States and in the European Free Trade Area (EFTA) countries, although some references are made to examples from other jurisdictions. The analysis draws on the monitoring work carried out by the European Supervisory Authorities (ESAs)³, other EU forums and expert groups, global standard setting bodies, as well as on relevant academic research. It also includes examples from the experience of innovation facilitators in some Member States.

The study does not purport to provide a comprehensive comparison between the various available models and inevitably includes a certain level of generalisation. Its main goal is to identify certain key elements of the design and operational parameters of innovation facilitators, which are relevant in the context of the potential benefits and risks linked to their operation. Moreover, from Single Market perspective the study points at certain elements for EU policymakers' consideration, in the context of evaluating the outcomes and the impact of the operation of innovation facilitators in the EU and of enhancing supervisory convergence.

The structure of the analysis is as follows:

Chapter 2 provides some relevant background to explain the role of innovation facilitators in the broader context of regulatory responses to innovation in the financial sector. It outlines briefly the regulatory challenges and complexities brought by FinTech, in particular the wide variety of entities, products and business models as well as the new or altered risks they generate.

Chapter 3 provides an overview of the main types of innovation facilitator - regulatory sandboxes and innovation hubs - and of their dissemination in the EU and the EFTA countries. Furthermore, it presents

¹ [Expert Group on Regulatory Obstacles to Financial Innovation, 30 Recommendations on regulations, innovation and finance](#), Final Report to the European Commission, December 2019 (hereinafter 'Expert Group on Regulatory Obstacles to Financial Innovation 2019').

² ESAs Joint Committee report, [FinTech: Regulatory sandboxes and innovation hubs](#), January 2019, paras 109-111 (hereinafter '2019 ESAs Joint report').

³ The European Banking Authority (EBA), www.eba.europa.eu, the European Securities and Markets Authority (ESMA), www.esma.europa.eu, and the European Insurance and Occupational Pensions Authority (EIOPA), www.eiopa.europa.eu.

the main expected benefits and the potential risks stemming from innovation facilitators, and outlines the main work carried out by EU bodies and forums in this area to date.

Chapter 4 focuses on the core design and operational elements of innovation facilitators, which are relevant in order to optimise their benefits while minimising the potential risks: the facilitator's objectives, scope, access conditions, nature of regulatory relief and testing parameters (as applicable), as well as the follow-up and tools for knowledge transfer.

Chapter 5 identifies the need for comparable and granular data about certain indicators related to the operation of innovation facilitators' frameworks for the purposes of an assessment of their impact and outcomes within the Single Market. It also discusses certain proposals for strengthened coordination at EU level to mitigate the risk of diverging supervisory practices and market fragmentation.

Chapter 6 highlights the relevance of global regulatory cooperation, and outlines a few relevant global initiatives taken up in this context.

Chapter 7 wraps-up the analysis with the main conclusions of the study.

2. FINTECH AS REGULATORY DISTRUPTION

KEY FINDINGS

- FinTech challenges the traditional regulatory and institutional arrangements in the financial sector by adding complexities to an already complex environment.
- Technology-enabled financial products or services vary significantly in their breadth, scope and nature. Some create new risks, while others alter the traditional risks inherent to the financial system. The FinTech ecosystem includes a large variety of entities, including the incumbents, start-ups (financial or non-financial) and large non-financial companies.
- A regulatory response to innovation in the financial sector requires a balancing approach, which weighs-up the potential benefits of innovation against the risks for consumers, investors and the stability of the financial system as a whole. Assessing the risks brought by FinTech requires a deep understanding of the technologies used to deliver the innovative services or products.
- Jurisdictions across the globe have resorted to innovative ways to respond to the rapidly evolving financial landscape. Among those, initiatives aiming to increase supervisors' understanding of FinTech developments play a prominent role. They usually take the form of "innovation hubs" or "regulatory sandboxes", referred together as "innovation facilitators".

2.1. Complexity of the FinTech Ecosystem

'FinTech' refers to "the use of technology-enabled innovation in financial services that could result in new business models, applications, processes or products and could have an associated material effect on financial markets and institutions and how financial services are provided"⁴.

Technology-enabled products and services vary significantly in their breadth, scope and nature. They range from '**core FinTech activities**' in the different financial services sectors (i.e. digital banking or payment services, platform-based financing, robo-advice, InsurTech⁵) to **enabling technologies** (i.e. blockchain and distributed ledger technologies (DLT), new application programming interfaces (APIs), smart contracts, artificial intelligence (AI) and

Figure 1: FinTech Technological Space



Source: Expert Group on Regulatory Obstacles to Financial Innovation (2019), "30 Recommendations on regulations, innovation and finance", Final Report to the European Commission, December 2019, diagram by T. Butler.

⁴ Financial Stability Board (FSB), Monitoring Fintech, <https://www.fsb.org/work-of-the-fsb/policy-development/additional-policy-areas/monitoring-of-fintech/>.

⁵ InsurTech is the insurance-specific branch of FinTech. See more in EIOPA, Report on Best Practises on Licencing Requirements, Peer-to-Peer Insurance and the Principle of Proportionality in an InsurTech Context, March 2019, available at: https://www.eiopa.europa.eu/sites/default/files/publications/pdfs/eiopa_best_practices_on_licencing_march_2019.pdf.

machine learning, and potentially in the future quantum computing)⁶.

Some of them fall into the traditionally regulated financial sector space, while others are applicable across sectors (See Figure 2). The application of technologies in the financial sector results in products, practices and processes, which bring along **new risks** (such as, automation of decision-making, allocation of responsibility and liability). Those new risks come in addition **to the traditional risks inherent to the financial sector** (i.e. systemic risk, operational risk, market integrity, principal-agent risk). Moreover, as a result of the technological application, such **traditional financial sector risks may be altered** (some diminished, but others increased)⁷. Assessing such altered or new risks in a highly regulated space requires a deep understanding of the technologies used to deliver the innovative services or products. Often, it is not immediately clear whether an innovative product, process or a service belongs to the regulated space, or not. Even if it does, it is not always clear how the existing requirements should be applied to ensure that they achieve their intended purpose, while still allowing for a possibly beneficial new product, process or a service to develop.

Figure 2: Sectors of innovative services in banking, payment and investment

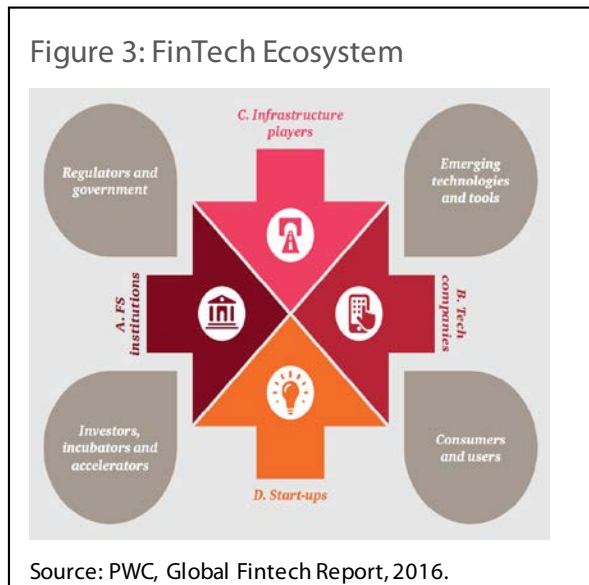
	Sectoral innovations			
	Credit, deposit, and capital-raising services	Payments, clearing and settlement services		Investment management services
	Crowdfunding	Retail	Wholesale	High-frequency trading
	Lending marketplaces	Mobile wallets	Value transfer networks	Copy trading
	Mobile banks	Peer-to-peer transfers	FX wholesale	E-trading
	Credit scoring	Digital currencies	Digital exchange platforms	Robo-advice
Market support services	Portal and data aggregators			
	Ecosystems (infrastructure, open source, APIs)			
	Data applications (big data analysis, machine learning, predictive modelling)			
	Distributed ledger technology (blockchain, smart contracts)			
	Security (customer identification and authentication)			
	Cloud computing			
	Internet of things / mobile technology			
	Artificial intelligence (bots, automation in finance, algorithms)			

Source: BCBS, [Implications of FinTech developments for banks and bank supervisors](#), Sound practices, February 2018.

⁶ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

⁷ Ibid.

Moreover, there is a **large variety of entities**, which provide FinTech services or products. Those include the incumbents (i.e. banks, insurers, investment firms), infrastructure players, start-ups (financial or non-financial) and large non-financial companies (telecom operators, BigTech, commercial platforms)⁸. Some of them - the entities that already provide financial services - are familiar with the specific regulatory requirements and the related supervisory expectations. Others are completely new to the multifaceted world of financial sector regulation. The new do not necessarily have deep understanding of the sophisticated regulatory requirements and standards applicable in the financial sector.



2.2. Regulatory response to innovation in the financial sector

Innovation and the use of technology in the financial sector are by no means a new phenomenon⁹. Indeed, it is a sector, which is highly susceptible to technological innovation. At the same time, the financial sector is highly regulated in view of its economic significance and its inherent risks. Therefore, the question of a timely and appropriate regulatory response to market innovation as well as the ability of financial sector regulation to accommodate new developments ('future proofing') has long been in the focus of policymakers and regulators¹⁰.

For example, already in 2001 the [Lamfalussy Report](#) concluded that the EU regulatory system at the time was "too slow" and "too rigid to react speedily enough to changing market conditions"¹¹. Following the recommendations of the Lamfalussy Report, over time the EU financial services framework was reformed, inter alia, to allow for more flexibility and faster adaptation to new developments by means of:

- 1) EU secondary legislation at Level 1 setting out broadly defined framework principles;
- 2) more granular technical details on the application of those principles at Level 2 (i.e. in the legislation adopted pursuant to a delegation of power), which can be adjusted to a changing market reality more speedily; and

⁸ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

⁹ For more details, see Brummer, Ch., Yadav, Y., Fintech and the Innovation Trilemma, October 2017, 107 *Georgetown Law Journal* 235, 2019, Vanderbilt Law Research Paper No. 17-46, Georgetown Law and Economics Research Paper No. 11-23 (hereinafter 'Brummer, Yadav, 2017, Innovation Trilemma').

¹⁰ References to 'regulator' in the text mean the body or the entity, which is involved in the development and adoption of the regulatory requirements, depending on the legal system of the jurisdiction. References to 'supervisor', 'supervisory authority' and 'competent authority' are used interchangeably and mean the body or entity, which is responsible for the authorisation, monitoring of compliance and oversight of the entities that carry out regulated activities. Depending on the legal system, some supervisors may also have certain regulatory powers.

¹¹ See [Final Report of the Committee of Wise Men on the Regulation of the European Securities Markets](#), February 2001, Brussels.

- 3) proportionality based requirements, which allow for supervisory discretion in their application based on different factors (i.e. risk profile, size, complexity), combined with an increased role of the ESAs¹² in ensuring supervisory convergence across the Member States (Level 3).

As shown later in the study, such **embedded proportionally has allowed for a certain degree of flexibility when applying licensing or authorisation requirements to emerging FinTech business models, products or services** (see Chapter 4.3.). Still, in the recent past, we have witnessed a significant leap in technological developments and an unprecedented pace of digital transformation. Within a very short period, the available technologies, their potential for further developments, and the opportunities for applying those technologies to develop new business models, processes and products have changed dramatically¹³. With that, FinTech innovation has added to the already existing complexity in the financial sector and has presented new challenges.

In this complex environment, the main challenge for regulators has been to develop new methods of identifying, monitoring, and addressing the changing dynamics in the financial system (such as, ever more automated decision making, market power shifts). Jurisdictions across the globe have reacted to FinTech developments in various ways, ranging from bans on certain FinTech activities or products, through FinTech specific regulation on certain aspects, to providing some clarification on how the existing regulatory environment would apply to FinTech, without making changes in the existing regulatory framework¹⁴. In the face of the rapidly changing environment and given the limitations of traditional law making, jurisdictions have also resorted to innovative regulatory approaches to respond to the innovative disruptions¹⁵. Such approaches include piloting schemes, setting up of innovation offices/hubs, regulatory sandboxes and innovation accelerators¹⁶, and more recently initiatives focusing on RegTech and SupTech¹⁷.

In order to be able to identify risks for financial stability and consumers, supervisors need to understand, isolate, and target the limitations and vulnerabilities of various complex technologies¹⁸. Performing these tasks demands a significant build-up of supervisory knowledge and capacity¹⁹. Against this background, an important part of the innovative regulatory approaches have been initiatives aiming to increase supervisor's understanding of new FinTech activities and their business models, risks and incentives. Interactions with market participants can provide the regulators with the necessary understanding of innovative products, services and business models²⁰. Such interactions can

¹² The ESAs were established with the post-global financial crisis regulatory reform, replacing the three supervisory Committees, which formed part of the original Lamfalussy architecture: Committee of European Banking Supervisors (CEBS), Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) and Committee of European Securities Regulators (CESR).

¹³ See more on "why this time is different" in Brummer, Yadav, 2017, Innovation Trilemma.

¹⁴ For an overview of regulatory responses to FinTech activities see Ehrentraud, J., Garcia Ocampo, D., Garzoni, L., Piccolo, M., Bank for International Settlements, Financial Stability Institute, [Policy responses to FinTech: a cross-country overview](#), FSI Insights on policy implementation No 23, January 2020 (hereinafter 'Ehrentraud, Garcia Ocampo, Garzoni, Piccolo 2020, Policy responses to FinTech'). See also Brummer, Yadav, 2017, Innovation Trilemma.

¹⁵ For more details, see Brummer, Yadav, 2017, Innovation Trilemma.

¹⁶ 'Innovation Accelerators' are partnership arrangements between FinTech providers and the supervisory authority to develop use cases that may involve funding support and/or authorities' endorsement/approval for future use in the authority's operations or in the conduct of their supervisory tasks. As an example of an innovation accelerator operated by an EU supervisor, see the Lab of Banque de France under <https://www.banque-france.fr/en/banque-de-france/about-banque-de-france/le-lab-banque-de-france>.

¹⁷ For more details see, Brummer, Yadav, 2017, Innovation Trilemma, Buckley, R.P., Arner, D.W., Veidt, R., Zetzsche, D.A., [Building FinTech Ecosystems; Regulatory Sandboxes, Innovation Hubs and Beyond](#), November 2019 (hereinafter 'Buckley, Arner, Veidt, Zetzsche 2019, Building FinTech Ecosystems').

¹⁸ See Omarova, S.T., [Technology v. Technocracy: FinTech as a Regulatory Challenge](#), March 2020, Journal of Financial Regulation, Vol. 6/1, 20 March 2020, p. 75–124 (hereinafter 'Omarova 2020, Technology v. Technocracy').

¹⁹ See Omarova 2020, Technology v. Technocracy.

²⁰ Zetzsche, D., Buckley, R., Arner, D. and Barberis, J., [Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation](#), August 2017, 23 Fordham Journal of Corporate and Financial Law 31-103.(hereinafter 'Zetzsche, Buckley, Arner, Barberis 2017, Regulating a Revolution').

also serve as means to provide entities that are new to the financial regulatory space with better understanding of the regulatory environment and the supervisory expectations. The various forums for supervisory outreach to the FinTech industry that had developed since the advent of FinTech, have now become more institutionalised in the form of innovation hubs and regulatory sandboxes²¹, referred together as 'innovation facilitators'.

²¹ Zetsche, Buckley, Amer, Barberis 2017, Regulating a Revolution.

3. INNOVATION FACILITATORS: OVERVIEW, TRENDS, POTENTIAL BENEFITS AND RISKS

KEY FINDINGS

- A number of jurisdictions in the EU and beyond have adopted innovation facilitators as part of their overall response to the technological innovations in the financial sector.
- **Innovation hubs** usually provide a specific scheme, via which firms can engage with the supervisory authority to raise questions and seek clarifications or non-binding guidance.
- **Regulatory sandboxes** enable a direct testing environment for innovative products, services or business models, pursuant to a specific testing plan, which usually includes some degree of regulatory lenience combined with certain safeguards.
- The operation of innovation facilitators brings along potential benefits and risks.
- For supervisors, the main **expected benefit** is enhancing supervisory understanding of new or changed risks brought by FinTech, which can facilitate an adequate policy response. For innovators, they can reduce regulatory uncertainties and help lower the high barriers to entry in the sector. More broadly, it is expected that innovation facilitators can boost competition, allowing for the development of more beneficial new products, thereby fostering financial inclusion and broader consumer choice. For the jurisdiction, establishing an innovation facilitator signals a propensity to support innovation, thereby attracting innovators.
- Among the main **possible risks**, some are specific to innovation facilitators and regulatory sandboxes, in particular (i.e. level playing field concerns). Others are broader and emerge in the context of the overall strategies applied by jurisdictions to raise their attractiveness as a FinTech (i.e. regulatory arbitrage).
- Within the Single Market, there are concerns that the operation of innovation facilitators at national level could lead to the development of divergent supervisory practices and market fragmentation. In April 2019, the ESAs and the Commission established the European Forum for Innovation Facilitators (EFIF) with a view of promoting greater coordination and cooperation between innovation facilitators within the EU.

3.1. Innovation Hubs and Regulatory Sandboxes

Many jurisdictions have already introduced various types of innovation facilitator²². It is often difficult to draw a precise distinction among them, due to the variety of existing models, at EU level and globally. Innovation facilitators can be broadly divided into two main categories: innovation hubs and regulatory sandboxes²³. These initiatives are not mutually exclusive, with many jurisdictions having put in place more than one type or mixed models²⁴.

²² For an overview globally, see Buckley, Arner, Veidt, Zetzsche 2019, Building FinTech Ecosystems.

²³ The Basel Committee on Banking Supervision (BCBS), [Sound practices: Implications of FinTech developments for banks and bank supervisors](#), February 2018 (hereinafter 'BCBS 2018, Sound practices') includes 'Innovation Accelerators' as a third category. Given that their main role is in fostering RegTech- and SupTech-tools for the use of the authority in the conduct of their supervisory and regulatory tasks, they are not covered by this study.

²⁴ Ehrentraud, Garcia Ocampo, Garzoni, Piccolo 2020, Policy responses to FinTech.

- **Innovation hubs** usually provide a specific scheme, via which firms can engage with the supervisor to raise questions and seek clarifications or non-binding guidance about FinTech related issues in the context of compliance with the regulatory framework, licencing or registration requirements, and regulatory and supervisory expectations²⁵.
- **Regulatory sandboxes** go a step further and provide a special scheme, in which companies can test innovative financial products, services, or business models with actual customers in a controlled environment (a 'sandbox') pursuant to a specific testing plan agreed with the supervisor and subject to the application of distinct safeguards²⁶.

In principle, the main difference between them lies in the nature of the facilitation they aim to provide: while innovation hubs provide a platform to exchange knowledge and informal guidance, a regulatory sandbox usually implies some lenience or supervisory discretion about the way in which the regulatory framework applies to innovative products or services. In addition, within an innovation hub the supervisor does not monitor the actual development of a FinTech product as closely in the case of a sandbox testing²⁷. In some jurisdictions, the regulatory sandbox is set up in a broad fashion and also offers the services usually provided by an innovation hub²⁸.

Innovation hubs are often a compelling first step in the innovative regulatory journey: they are easier to establish, as they require no protracted legislative or regulatory change and can be set up under existing supervisory mandates²⁹. They have essentially become the norm: in the EU and the EFTA countries³⁰, nearly all jurisdictions have established innovation hubs³¹. Their names, design and operating modalities vary across the different jurisdictions, and over time, the concepts and models have evolved. Mostly starting with a simple dedicated contact point model (i.e. dedicated telephone, contact point and/or electronic interface), now many of them also provide personalised support and guidance³², or access to investor networks and accelerators³³. Some competent authorities have made available specific 'follow-up' schemes and, where the activity or service in question would require a licence, provide support to the company along the authorisation process³⁴.

Although **Regulatory sandboxes** are less widespread, recent trends show an increasing interest in them. They can be seen as a way of regulatory experimentation, which allows the supervisor to test a certain customised regulatory approach to an innovative service, product or business model, instead

²⁵ 2019 ESAs Joint report.

²⁶ Ibid.

²⁷ Lim, B., Low, Ch., Regulatory Sandboxes, in: Madir, J. (e), Fintech: Law and Regulation, September 2019, Elgar Financial Law and Practice series (hereinafter 'Lim, Low 2019, Regulatory Sandboxes').

²⁸ See a list of narrow vs broad sandboxes across 50 jurisdictions worldwide in Buckley, Arner, Veidt, Zetsche 2019, Building FinTech Ecosystems, Appendix A.

²⁹ UNSGSA FinTech Working Group and CCAF, [Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech](#). Office of the UNSGSA and CCAF: New York, NY and Cambridge, UK, 2019 (hereinafter 'UNSGSA FinTech Working Group and CCAF 2019, Early lessons').

³⁰ See a list of financial innovators in Annex 1. The ESAs Joint Committee also maintains and regularly updates such a list: <https://esas-joint-committee.europa.eu/eff/innovation-facilitators-in-the-eu>.

³¹ Malta is in an advanced stage of establishing an innovation hub. The planned design is of a broad cross-sectoral nature, encompassing an innovation hub and a regulatory sandbox, as different pillars of a broad concept. For more details, see Malta Financial Services Authority, <https://www.mfsa.mt/fintech/fintech-strategy/>.

³² See for example, the Estonian innovation hub under: <https://www.fi.ee/en/finantsinspeksioon/financial-innovation> and the Danish innovation hub under: <https://www.dfsa.dk/Supervision/Fintech/Formaal>.

³³ [ESMA response to the European Commission's Consultation on a New Digital Finance Strategy for Europe](#), June 2020. Accelerator programs typically provide or facilitate mentoring, workspaces, consultations with industry experts (including on regulation), networking opportunities, and access to funding. For more details, see UNSGSA FinTech Working Group and CCAF 2019, Early lessons.

³⁴ 2019 ESAs Joint report.

of regulating, potentially prematurely or inadequately³⁵. Globally, the UK FCA spearheaded this practice by establishing its regulatory sandbox in 2016³⁶, and a number of other jurisdictions followed suit³⁷. Currently, six Member States (DK³⁸, HU³⁹, LT⁴⁰, LV⁴¹, NL⁴², MT⁴³), as well as Norway⁴⁴ among the EFTA countries, already have an operational one. In addition, other six Member States (AT⁴⁵, EE⁴⁶, EL⁴⁷, ES⁴⁸, IT⁴⁹, PL⁵⁰) are in an advanced preparatory stage of establishing a sandbox. A few thereof (EL, EE and PL) are being developed with support under the Structural Reform Support Programme (SRSP) Regulation⁵¹, implemented by the EBRD with assistance by the Commission services (DG REFORM). Two more Member States have either announced intentions to set up a sandbox (BG⁵²) or are currently analysing the benefits and possible implementation thereof (SK⁵³). In a more holistic initiative⁵⁴, the Portuguese government has recently laid the foundations for the establishment of the so-called ‘[Technological Free Zones](#)’. It envisages a general and cross-sectoral framework for experimentation with innovative technologies setting out horizontally applicable principles, which are to be combined with specific sectoral requirements for strategic and more regulated sectors, such as the financial sector⁵⁵.

³⁵ Ahern, D. M., [Regulators Nurturing FinTech Innovation: Global Evolution of the Regulatory Sandbox as Opportunity Based Regulation](#), March 2020. European Banking Institute Working Paper Series – No. 60 (hereafter ‘Ahern 2020’).

³⁶ See Financial Conduct Authority, [Regulatory Sandbox](#), <https://www.fca.org.uk/firms/regulatory-sandbox>. In the last few years, many jurisdictions have designed and developed their regulatory sandboxes based on the UK model.

³⁷ Hong Kong, Malaysia, Singapore, Australia, etc., see more in Zetsche, Buckley, Arner, Barberis 2017, *Regulating a Revolution*. For an overview of the current and planned initiatives see the [Digital Financial Services Observatory](#), a project operated by the Columbia Institute for Tele-Information at Columbia Business School in New York, which currently [lists](#) over 40 countries worldwide.

³⁸ Danish FT Lab, <https://www.dfsa.dk/Supervision/Fintech/FT-lab>.

³⁹ Operated by the Hungarian Central Bank, <https://www.mnb.hu/en/innovation-hub/regulatory-sandbox>.

⁴⁰ Operated by the Lithuanian Central Bank, <https://www.lb.lt/en/regulatory-sandbox>.

⁴¹ Operated by the Latvian Capital Market Commission, <https://www.fktk.lv/en/licensing/innovation-and-fintech/innovation-sandbox/>.

⁴² Operated jointly by the Dutch Central Bank (DNB) and the Capital Market Regulator (AFM), <https://www.dnb.nl/en/supervision/innovationhub/maatwerk-voor-innovatie-regulatory-sandbox/index.jsp>.

⁴³ Malta Financial Services Authority launched its regulatory sandbox on 22 July 2020, <https://www.mfsa.mt/fintech/regulatory-sandbox/>. Furthermore, the Maltese Gaming Authority operates a regulatory sandbox regarding virtual assets and virtual tokens, see Maltese Gaming Authority, [Guidance on the use of Innovative Technology Arrangements and the acceptance of Virtual Financial Assets and Virtual Tokens through the implementation of a Sandbox Environment](#), June 2020.

⁴⁴ The Norwegian regulatory sandbox became operational at the end of 2019 and had its first admissions pool in February 2020. See more under <https://www.finanstilsynet.no/tema/fintech/finanstilsynets-regulatoriske-sandkasse/>.

⁴⁵ Draft law under consideration in the Austrian parliament: https://www.parlament.gv.at/PAKT/VHG/XXVII/II_00193/index.shtml#ta-b-Uebersicht.

⁴⁶ About the Estonian regulatory sandbox, see <https://www.ebrd.com/news/2019/moving-the-regulatory-debate-forward-ebrd-and-estonia-are-working-on-their-first-sandbox.html>.

⁴⁷ See Bank of Greece under: <https://www.bankofgreece.gr/en/main-tasks/supervision/regulatory-sandbox> and EBRD Terms of reference under: <https://www.ebrd.com/documents/procurement/tor-82876.pdf?blobno-cache=true>.

⁴⁸ On 18 February 2020, the Spanish Council of Ministers [approved the legislative proposal](#) on measures for the digital transformation of the financial sector, which includes the implementation of a regulatory sandbox, and has passed it on to the Parliament for its final approval.

⁴⁹ In March 2020, the Italian Ministry of Finance conducted a public consultation regarding proposals to implement a regulatory sandbox http://www.dt.mef.gov.it/it/dipartimento/consultazioni_pubbliche/consultazione_regolamento.html.

⁵⁰ Although, it is reported as operational in the 2019 ESAs Joint report, the PL sandbox appears to be still work in progress, see https://www.knf.gov.pl/en/MARKET/Fintech/Regulatory_Sandbox. The available information suggests that a decentralised model is planned, whereby approved private entities (sandbox operators) provide the testing environment under the monitoring of the supervisory authority (see 2019 ESA’s Joint report).

⁵¹ Regulation (EU) 2017/825 of 17 May 2017 on the establishment of the Structural Reform Support Programme for the period 2017 to 2020, OJ L 129, 19.5.2017, p. 1.

⁵² Announcement by the BG Ministry of Finance, <https://www.minfin.bg/en/news/10967>.

⁵³ Action plan for the digital transformation of Slovakia for 2019–2022, <https://www.vicepremier.gov.sk/wp-content/uploads/2019/10/AP-DT-English-Version-FINAL.pdf>.

⁵⁴ The Portuguese [Council of Ministers Resolution Nr 30/2020](#) adopting an [Action Plan for the Digital Transition](#), [Council of Ministers Resolution Nr 29/2020](#), sets out the legal principles for the establishment of Technological Free Zones, specifically referring to the objective of avoiding a scattered regulatory sandbox approach across sectors.

⁵⁵ About regulatory sandboxes in other sectors see de Koker, L., Morris, N., Jaffer, S., [Regulating Financial Services in an Era of Technological Disruption](#), *Law in Context*, February 2020, Vol. 36, No 2, p. 90-112

This trend demonstrates that Member States, who have at first established innovation hubs, are now increasingly moving to testing in sandboxes⁵⁶. Yet, some Member States have remained cautious and sceptical about the role of regulatory sandboxes. For example, Sweden considered establishing a regulatory sandbox, but decided against it⁵⁷, and the German government has consistently stated that it does not intend to set up a regulatory sandbox⁵⁸.

Comparing regulatory sandboxes and innovation hubs, some scholars argue that by far the most significant role of regulatory sandboxes is their 'signalling function', showing openness of the regulator to innovators, while innovation hubs are the actual builders of the FinTech ecosystem, in particular in less developed financial markets⁵⁹. These scholars point out that sandboxes could be "most effective in jurisdictions" where there is "already a significant number of innovation-focused firms"⁶⁰ or "for highly specialized sandboxes operated to address shortcomings of the regulatory framework" concerning certain innovations⁶¹. On a global level and in the context of impact on financial inclusion a recent analysis⁶² concludes that regulatory sandboxes "are neither necessary nor sufficient for promoting financial inclusion". The same report also points out that they do offer benefits but are costly to operate, and that the (limited) experience so far points to the conclusion that "similar results may be more affordably achieved through innovation offices and other tools"⁶³.

3.2. Potential benefits and risks of innovation facilitators

As innovative disruption in the financial sector brings potential for some benefits and some risks, so do the innovative regulatory approaches taken in response to it. This Chapter outlines the main potential benefits and risks, which could emerge from the operation of innovation facilitators, laying the ground for an analysis of how certain relevant elements of their design and operational parameter can influence whether, and to what extent such potential benefits or risks could materialise. In overall, however, to date there are no comprehensive analyses on whether and to what extent such benefits and risk materialise, mainly due to the relatively short time span, in which they have been operational⁶⁴.

3.2.1. Expected benefits

As mentioned above, innovation facilitators provide a structured environment for engagement and knowledge-exchange between supervisors and innovative companies. For **new entrants**, facilitators "enable access to **dedicated supervisory resources with specialist expertise**", which supports the company in navigating through the licencing procedures and the wider regulatory framework⁶⁵. Facilitator schemes also help them develop a much **better understanding of supervisory expectations**. This allows companies to develop their products, services or business model in a regulation-compliant way from the design stage, thus avoiding potential legal risks later on⁶⁶.

⁵⁶ [ESMA response to the European Commission's Consultation on a New Digital Finance Strategy for Europe](#), 28 June 2020.

⁵⁷ In 2017, the Swedish Financial Supervisory authority ([Finansinspektionen](#)), upon an assignment by the Swedish government, considered the appropriateness of establishing a regulatory sandbox, but decided against it. For more details, see Finansinspektionen report [FI's role regarding innovation](#), December 2017.

⁵⁸ For example, see Deutscher Bundestag Drucksache 19/15103, 19. Wahlperiode, [Antwort der Bundesregierung](#), 13.11.2019.

⁵⁹ Buckley, Arner, Veidt, Zetzsche 2019, Building FinTech Ecosystems.

⁶⁰ Ibid.

⁶¹ For example, making the case for a regulatory sandbox for robo-advice see Ringe, W.-G., Ruof, Ch., [A Regulatory Sandbox for Robo Advice](#) May 2018, European Banking Institute Working Paper No 26.

⁶² UNSGSA FinTech Working Group and CCAF 2019, Early lessons.

⁶³ Ibid.

⁶⁴ See more detailed in Allen, H.J., [Sandbox Boundaries](#), Vanderbilt Journal of Entertainment & Technology Law 22, Vol. 2 (2020), p. 299-322 (hereinafter 'Allen 2020, Sandbox Boundaries').

⁶⁵ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

⁶⁶ Lim, Low 2019, Regulatory Sandboxes.

Innovation facilitators also bring potential for “reducing the time-to-market cycle” for new products⁶⁷ and, reportedly, an admission to a sandbox can also **improve financing opportunities** for new companies⁶⁸. In some cases, the facilitator schemes allow the companies “some time before they have to meet the requirements of the prudential framework in full”⁶⁹.

Moreover, dialogue and experience sharing within innovation facilitators help supervisors gather valuable information and can **promote supervisory understanding** of new or altered risks brought by FinTech. Specifically, the circumscribed regulatory sandbox environment allows regulators to observe up-close the actual development and implementation of a certain product, service or business model. In addition, the controlled rollout within a regulatory sandbox allows the regulator to instil modifications to the sandbox company’s business model based on the customers’ feedback⁷⁰. The **enhanced knowledge** gained by competent authorities can be applied to support the timely update of regulatory and supervisory policies, addressing inadvertent practical barriers to innovation⁷¹. It can also provide intelligence that would help authorities reshape their monitoring approaches and policies to address any risks to consumers, market integrity or for financial stability⁷².

In addition, innovation facilitators can **enhance visibility of broader technology related developments**⁷³. This can help supervisors bridge the information gaps that emerge at the edge of the regulatory perimeter: outside of the “direct regulatory sightline”⁷⁴, where the existing framework does not provide for data collection⁷⁵. This provides authorities with the knowledge and necessary elements to assess whether the regulatory perimeter needs to be adjusted⁷⁶. Hence, a pro-active early stage engagement by the regulators with financial innovation “may mitigate the dangers of financial innovation being funnelled into shadow finance” by encouraging innovators to engage with regulators⁷⁷.

In a broader context, innovation facilitators can help **spur competition between different providers** and allow new, potentially more beneficial products to develop, fostering financial inclusion and a **broader consumer choice**. An argument can be made that such beneficial innovation may not materialise due to the high regulatory barriers to entry in the sector, as newcomers may struggle with the complex requirements and the related legal uncertainty⁷⁸. Even for established institutions, such legal uncertainty can be a barrier to the rollout of innovative products and solutions. Given that the existing regulatory framework has not been developed with those innovative solutions in mind, the regulatory uncertainty can be quite significant. In this context, innovation facilitators can **help lower barriers to entry and reduce regulatory uncertainties** by providing guidance and a safe space for testing innovative products, services or business models in a controlled environment.

⁶⁷ See the [UK FCA Report Regulatory sandbox lessons learned](#), October 2017, see also Jenik, I., Lauer, K., [Regulatory Sandboxes and Financial Inclusion](#), CGAP Working Paper, October 2017 (hereafter ‘Jenik, Lauer 2017’).

⁶⁸ The UK FCA Report Regulatory sandbox lessons learned, October 2017, reports that “at least 40% of firms, which completed testing in the first cohort, received investment during or following their sandbox tests”.

⁶⁹ Ehrentraud, Garcia Ocampo, Garzoni, Piccolo 2020, Policy responses to FinTech.

⁷⁰ Ahern 2020.

⁷¹ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

⁷² IMF/WB Bali Fintech Agenda, October 2018.

⁷³ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

⁷⁴ Ahern 2020.

⁷⁵ IMF/WB Bali Fintech Agenda, October 2018.

⁷⁶ Ehrentraud, Garcia Ocampo, Garzoni, Piccolo 2020, Policy responses to FinTech.

⁷⁷ Chiu, I. H-Y, [A Rational Regulatory Strategy for Governing Financial Innovation](#), December 2017, European Journal of Risk Regulation, Vol. 8, p. 743-765 (hereafter ‘Chiu 2017’).

⁷⁸ Allen, H.J., [Regulatory Sandboxes](#), June 2019, George Washington Law Review Vol. 87, p. 579 - 645 (hereinafter ‘Allen 2019, Regulatory Sandboxes’). Also, Jenik, Lauer 2017.

Moreover, for the jurisdiction adopting an innovation facilitator, one of the main benefits is that it provides a **strong signal to market participants** about the **propensity of the supervisor to support innovation** and consequently could lead to innovation boost in that specific market⁷⁹. Some authors suggest that such ‘signalling function’ is much stronger in the case of a regulatory sandbox compared to an innovation hub⁸⁰. This signalling function is performed not only by the availability of an innovation facilitator, but also by its design and operational features, which can point to the overall regulatory approach to FinTech taken in that jurisdiction⁸¹.

Figure 4: Potential benefits - overview

Regulator	Innovators	Consumers
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Reduce time-to-market by streamlining the authorization 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 	<ul style="list-style-type: none"> • Promote introduction of new and potentially safer products • Increase access to financial products and services

Source: UNSGSA FinTech Working Group and CCAF. (2019). [Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech](#). Office of the UNSGSA and CCAF: New York, NY and Cambridge, UK.

3.2.2. Potential risks

Several concerns have been raised, in the scholarship and by international bodies, related to the operation of innovation facilitators. Some of them are specific to innovation facilitators and to regulatory sandboxes, in particular. Others are broader and emerge in the context of the overall strategies applied by jurisdictions to raise their attractiveness as a FinTech hub.

Perhaps the most common concern about the use of innovation facilitators is the **potential for regulatory arbitrage**⁸². 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-ups and investors⁸³. A ‘race-to-the-bottom’ style competition between regulators, in the longer run, could lead to compromises on consumer protection and financial stability⁸⁴. This risk is not specific to innovation facilitators: a de-regulatory potential may emerge from various measures adopted by jurisdictions to attract FinTech. In the context of innovation facilitators, such potential emerges in the case of regulatory sandboxes, if their design would allow for the disapplication of substantial regulatory standards and safeguards⁸⁵.

⁷⁹ Buckley, Arner, Veidt, Zetzsche 2019, Building FinTech Ecosystems. Jenik, Lauer 2017.

⁸⁰ Buckley, Arner, Veidt, Zetzsche 2019, Building FinTech Ecosystems, p. 60.

⁸¹ Ahern 2020.

⁸² See more detailed Allen 2020, Sandbox Boundaries.

⁸³ Ahern 2020.

⁸⁴ Lim, Low 2019, Regulatory Sandboxes.

⁸⁵ Ibid.

Similarly, there are also broader concerns about **potential negative impacts on consumer protection and financial stability**. In view of the trade-offs that regulators are facing between their different regulatory objectives⁸⁶, critics point to the risk that they **may prioritise innovation over putting adequate safeguards** in place to protect the public and consumer interest⁸⁷. Although again not specific only to innovation facilitators, such risk emerges if a regulatory sandbox is established predominantly to attract FinTech and investors to that jurisdiction, at the expense of financial stability and consumer protection⁸⁸. Therefore, scholars emphasise that regulatory sandboxes should be designed in a way that “minimizes any rollback of prudential and consumer protection regulation and maximizes the ability of financial regulators to learn about new technologies”⁸⁹. Moreover, there is a deeper concern that in prioritising resource-intensive sandbox programs regulator’s attention may drift away from more comprehensive innovation policies, market engagement strategies, or financial inclusion programs⁹⁰.

In the context of the 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 borders⁹¹. 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. Therefore, intensive cooperation and engagement between supervisors and enhanced involvement and monitoring by the ESAs is necessary to foster the development of a common regulatory and supervisory response (see more about this in Chapter 5).

Furthermore, selection-based competitive procedures for access to innovation facilitators result in a small number of participating entities receiving a preferential treatment over a large number of non-participating ones (see more about this in Chapter 4.2.3). Hence, **potential competition issues** may emerge due to advantages in terms of personalised regulatory guidance and an opportunity to market new products first. The argument can be advanced that - in particular regarding regulatory sandboxes - regulators are artificially interfering with natural selection in the market⁹², which can affect the level playing field. To mitigate this risk, effective knowledge sharing mechanisms to the broader FinTech community are essential (see more about this in Chapter 4.4.1).

In addition, there are some specific risks related to the design and operation parameters of the innovation facilitator:

- In view of the high costs of operating an innovation facilitator, adequate **staffing and resources** are essential. If the responsibilities of operating an innovation facilitator are put on top of the regular tasks of the supervisory staff (instead of hiring new staff, for example), and if resources are

⁸⁶ For a deeper discussion on the balance between protection of consumers and investors, the promotion of financial stability, market efficiency and competition, and the prevention of financial crime, see Allen 2020, *Sandbox Boundaries. Exploring the difficulty of regulators, successfully encouraging financial innovation while also achieving rules simplicity and market integrity* see Brummer, Yadav, 2017, *Innovation Trilemma*.

⁸⁷ Ahern 2020, Allen 2019, *Regulatory Sandboxes*.

⁸⁸ Lim, Low 2019, *Regulatory Sandboxes*.

⁸⁹ Allen 2020, *Sandbox Boundaries*.

⁹⁰ UNSGSA FinTech Working Group and CCAF 2019, *Early lessons*.

⁹¹ 2019 ESAs Joint Report.

⁹² Ahern 2020.

already stretched, this could have a negative impact on other areas of responsibility of the supervisor (i.e. monitoring, supervision and enforcement)⁹³ (see more in Chapter 4.1.).

- In selection-based schemes for access to a facilitator (such as regulatory sandboxes, the capacity of which is limited by design), there is a risk of a **sub-optimal selection of admitted entities**⁹⁴ as it leaves room for potentially “inadequate risk-assessment with consequent adverse implications for the public good during testing and beyond”⁹⁵. This can harm the regulator’s reputation and in turn affect trust in the financial system as a whole⁹⁶. This risk is particularly emphasised, if the eligibility criteria for acceptance in a facilitator scheme are defined vaguely or in the absence of transparency about the selection process, leading to potential for selection bias⁹⁷ (see more about this in Chapter 4.2.3).
- A related concern is that supervisors, in their desire to position themselves as FinTech-friendly, may **risk becoming too sympathetic towards firms** (‘industry capture’). Although such a risk accompanies all supervisory activities, such a “disposition might be reinforced by the intense engagement during the period” in a sandbox⁹⁸. In this context, academic research argues that the relational dimensions within innovation facilitators should be based on a “framework for governance and accountability” aimed at preserving objectivity and rationality in regulatory decision-making and policy formulation⁹⁹.
- Additionally, there is an inherent risk of “herding behaviour by consumers and investors” based on a perception that an admission to a regulatory sandbox is a *de facto* ‘quality label’ of the product or service by the supervisor¹⁰⁰.

3.3. Monitoring and the EU policy actions to date

The above-mentioned risks, the increasing level of adoption by different jurisdictions, as well as the ever-evolving models of innovative regulatory approaches necessitate continuous monitoring and analysis of developments in this area. Over the past few years, several global regulatory bodies have carried out analyses on some aspects and developments in the innovation facilitators’ practices and approaches¹⁰¹. At EU level, in January 2019, the Joint Committee of the ESAs produced a Joint report on regulatory sandboxes and innovation hubs (hereafter ‘2019 ESAs Joint report’)¹⁰², based on a mandate specified in the 2018 FinTech Action Plan¹⁰³. The report provides an overview of the types of innovation facilitators adopted in the EU and their main features¹⁰⁴. It also sets out recommendations for best practices regarding the principles for their design and operation aiming to promote coordination and cooperation between the innovation facilitators across the EU (see a summary of the main best practices in Annex 2). Under the 2018 FinTech Action Plan, the Commission was meant to

⁹³ Jenik, Lauer 2017.

⁹⁴ Ibid.

⁹⁵ Ahern 2020.

⁹⁶ Jenik, Lauer 2017.

⁹⁷ Ibid.

⁹⁸ Chiu 2017. Allen 2020, Sandbox Boundaries.

⁹⁹ Chiu 2017.

¹⁰⁰ Ahern 2020.

¹⁰¹ For example see, FSB Report, [Financial Stability Implications from FinTech: Supervisory and Regulatory Issues that Merit Authorities’ Attention](#), June 2017, UNSGSA FinTech Working Group and CCAF 2019, Early lessons. In the context of the BIS work, see also Ehrentraud, Garcia Ocampo, Garzoni, Piccolo 2020, Policy responses to FinTech.

¹⁰² [ESAs Joint Committee report on regulatory sandboxes and innovation hubs](#), January 2019.

¹⁰³ European Commission, [FinTech Action Plan: For a More Competitive and Innovative European Financial Sector](#), COM(2018/109).

¹⁰⁴ The report is based on surveys to the competent authorities carried out in spring 2018 and includes EU and UK, which was still a Member State at the time.

present, in 2019, a report with best practices for regulatory sandboxes, based on the work of the ESAs, which, however, has not been published to date.

Over the past few years, the ESAs too have stepped up their work in the area of innovation facilitators as evidenced by their work programs and other initiatives¹⁰⁵. Moreover, in April 2019, the European Commission and the ESAs launched the [European Forum for Innovation Facilitators \(EFIF\)](#). It was established further to the 2019 ESAs Joint report, which identified a need for action to promote greater coordination and cooperation between innovation facilitators to support the scaling up of FinTech across the Single Market¹⁰⁶. Members of the EFIF are the ESAs, the national competent authorities, and, on ad-hoc basis, representatives from third-countries' competent authorities, who will be invited to participate in relevant meetings¹⁰⁷. The EFIF is intended to provide a platform for participating authorities to:

- collaborate and share experiences from their engagement with firms through innovation facilitators;
- reach common views on the regulatory and supervisory treatment of innovative products, services and business models;
- collaborate in responding to firm/group specific questions about innovations; and,
- for those with regulatory sandboxes, agree where appropriate, and on a voluntary basis, on joint testing arrangements¹⁰⁸.

The EFIF can play an important role in enhancing supervisory cooperation with a view to mitigating some of the potential risks related to the operation of innovation facilitators in the Single Market.

Moreover, on 24 September 2020 the Commission adopted, the new Digital Finance Strategy for the EU¹⁰⁹, together with several FinTech related legislative proposals¹¹⁰ and a Retail Payments Strategy¹¹¹, which collectively aim to allow for access to innovative financial products, while ensuring consumer protection and financial stability. These initiatives include proposals for measures relevant in the context of innovation facilitators. (see more in Chapter 5)

¹⁰⁵ See for example [ESMA Revised Work Program 2020](#), June 2020, [EBA FinTech Roadmap](#) of March 2018, and EIOPA's [InsurTech Task Force](#).

¹⁰⁶ See EFIF website under: <https://esas-joint-committee.europa.eu/Pages/Activities/EFIF/European-Forum-for-Innovation-Facilitators.aspx>.

¹⁰⁷ See EFIF Terms of reference. Available at: https://esas-joint-committee.europa.eu/Publications/efif/EFIF_Terms_of_Reference.pdf.

¹⁰⁸ Ibid.

¹⁰⁹ Commission Communication of 24 September 2020 on [Digital Finance Strategy for the EU](#), COM(2020)591 (hereinafter 'EU Digital Finance Strategy').

¹¹⁰ Proposal for a Regulation on digital operational resilience for the financial sector, COM(2020)595, available at: https://ec.europa.eu/finance/docs/law/200924-digital-operational-resilience-proposal_en.pdf, Proposal for Regulation on Markets in Crypto-assets, COM(2020)593, available at https://ec.europa.eu/finance/docs/law/200924-crypto-assets-proposal_en.pdf, and Proposal for a Regulation on a pilot regime for market infrastructures based on distributed ledger technology, COM (2020)594, available at: https://ec.europa.eu/finance/docs/law/200924-distributed-ledger-technology-proposal_en.pdf.

¹¹¹ Communication from the Commission on Retail Payments Strategy for the EU, COM(2020)592, available at: https://ec.europa.eu/finance/docs/law/200924-retail-payments-strategy_en.pdf.

4. KEY ELEMENTS OF THE DESIGN AND OPERATION OF INNOVATION FACILITATORS

KEY FINDINGS

- Choices made in the key elements of the design and operational parameters of an innovation facilitator may emphasise certain risks and would require specific safeguards to mitigate potential negative impacts.
- Highly relevant among them are the facilitator's objectives, scope, access conditions, nature of regulatory relief and testing parameters (if applicable), as well as the follow-up and tools for knowledge transfer.
- Clear and transparent objectives need to be combined with sufficient resources and tools to enable effective operation as well as with mechanisms for evaluation and review of the outcomes.
- Sectoral restrictions of the innovation facilitator's scope further accentuate existing regulatory borders and could hamper cross-sectoral innovations. Where joint operation by all sectoral regulators is not possible, enhanced mechanisms for supervisory knowledge sharing across the different financial sectors are necessary.
- 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. Where selection-based access is part of the design, robust arrangements for vetting applications are essential and adequate knowledge sharing mechanisms to the broader FinTech community are necessary to bridge the knowledge gaps emerging between entities within the facilitators and those outside.
- The regulatory sandboxes currently operating in the EU apply customized sandbox regimes: i.e. the application of the existing rules is adapted to the individual propositions admitted to the sandbox. For the supervisors, their main benefit relates to the direct experiential learning acquired through the close engagement in the sandbox.
- Within the EU, supervisors have limited room for granting regulatory relief, which mainly involves the use of proportionality levers. Still, customised sandbox regimes bear a certain risk of inconsistent, divergent practices applied to peer entities and across Member States. Proper channels for internal supervisory knowledge transfer are essential to ensure coherent supervisory approach. Supervisory cooperation and knowledge sharing with other relevant authorities are necessary to address emerging crosscutting issues in other financial sectors or other related policy areas (e.g. competition, data protection).

As mentioned above, innovation facilitators could provide various benefits but bear inherent risks. Choices made in the design and operational parameters of an innovation facilitator may emphasise certain risks and would require specific safeguards to mitigate potential negative impacts. Although the models chosen in the different Member States display some common features, there are a number of differences in their design and operational parameters. Some of those differences reflect the different institutional frameworks across Member States, in particular the supervisory mandate and powers of the competent authority. Against this background, this Chapter outlines the most relevant

elements of the design and operation of innovation facilitators, which relevant in the context of the potential risks and benefits.

4.1. Objectives of the innovation facilitators

Not by chance, the setting up of clearly defined and published objectives of the innovation facilitator features prominently among the principles for the operation of innovation facilitators established in the 2019 ESAs joint report. 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.

The key objectives of the innovation facilitator are circumscribed by the supervisor's mandate and are usually outlined on the facilitator's website or in its founding document. Overall, despite the differences in the models, innovation facilitators pursue similar objectives:

- Supporting innovation and promoting the development of innovative businesses and beneficial financial products and services through innovation.
- Building and enhancing firms' understanding of regulatory expectations, the application of the existing regulatory framework and compliance requirements.
- Serving as a communication channel with the FinTech sector to promote compliance culture from the early stage of design and implementation of innovations.
- Increasing the regulator's understanding and knowledge of the innovative products to analyse the risks and opportunities of new business models and underlying technologies.
- Specifically in the case of regulatory sandboxes, to inform the regulatory approach through direct testing in order to mitigate possible risks while enabling innovation in their markets¹¹².

Evidently, the setting-up of clear objectives is not sufficient on its own. The overall design of the innovation facilitator needs to be based on a rigorous analysis of the powers, tools and resources¹¹³, which are necessary to enable it to maximise the potential benefits of its operation while minimising the inherent risks. It also needs to include adequate mechanisms for evaluation and scrutiny the outcomes of its operation. Regular reviews of the functioning and resourcing of the innovation facilitator need to be carried out to ensure it remains fit for purpose¹¹⁴.

4.2. Scope and parameters for access to innovation facilitators

The scope and parameters for access to the innovation facilitators are relevant in the context of ensuring cross-sectoral consistency of supervisory practices and a level playing field.

4.2.1. Scope

The scope of innovation facilitators is often delineated by the supervisory mandate of the authority and the financial sector for which the it is competent. In jurisdictions without an integrated financial sector supervisor¹¹⁵, sometimes the scope of the facilitator is limited to a certain sector of the financial industry (banking, securities or insurance). FinTech, however, often crosses the traditional boundaries between the different financial services sectors (i.e. financial aggregation platforms), or provide solutions which

¹¹² 2019 ESAs Joint report. Ehrentraud, Garcia Ocampo, Garzoni, Piccolo 2020, Policy responses to FinTech.

¹¹³ 2019 ESAs Joint report.

¹¹⁴ Ibid.

¹¹⁵ Also called a 'multi peaks' system of financial supervision.

could bring efficiencies horizontally across sectors (i.e. in risk management). Therefore, scholars emphasise the undesirability of sectoral restrictions, which further accentuate existing regulatory borders and could hamper cross-sectoral innovations by reducing economies of scale and preventing cross-sectoral pollination¹¹⁶.

Currently, an integrated national supervisor¹¹⁷ hosts most of the **regulatory sandboxes** that are already operational in the EU (DK, HU, LT, LV and MT), hence, covering the entire financial sector (e.g. banking, investment activities and services, insurance)¹¹⁸. In the Netherlands, which has a ‘twin peaks’ model of financial supervision, the banking and the capital markets supervisor jointly operate the regulatory sandbox¹¹⁹. Among the planned regulatory sandboxes (to the extent that this information is available), a joint operation by all sectoral supervisors is envisaged in other jurisdictions with separate sectoral supervisors (for example, ES and IT). Sectoral limitations appear more often with regard to **innovation hubs**¹²⁰, again mainly due to limits in supervisor’s jurisdiction. In such cases, jointly operated innovation hubs (for example, BE and NL) have reported advantages in terms of automatic information sharing, an efficient and consistent approach in responding to queries and more effective monitoring of cross-sectoral issues¹²¹. Where such joint operation is not possible, enhanced regulatory cooperation and mechanisms for knowledge sharing between the sectoral regulators are necessary to address the risk of developing fragmented cross-sectoral practices¹²² (see more in Chapter 4.4.2).

4.2.2. Access

Equal access opportunities to innovation facilitators are important to preserve the level playing field. There is a need to ensure that “all market participants be treated equally” and without discrimination, “irrespective of the size or degree of establishment on the market”¹²³. Concerns arise, where access is limited upfront only to certain types of entities: for example only new-entrants or only already regulated institutions or only non-regulated entities, which envisage taking-up a regulated activity¹²⁴. In the EU, the established innovation facilitators are usually¹²⁵ **open to all firms**, which are developing or considering the development of innovative financial products, services or business models¹²⁶. This includes the incumbents, new entrants and other technology providers, whether they are regulated entities or not.

With regard to the **admission to regulatory sandboxes, technology services** companies that do not themselves provide financial services but seek to collaborate with financial services providers are **required** to have in place relevant **agreements with a regulated financial institution**¹²⁷. The purpose

¹¹⁶ Buckley, Amer, Veidt, Zetsche 2019, Building FinTech Ecosystems, p. 11, Jenik, Lauer 2017.

¹¹⁷ Integrated financial supervision refers to a system for financial supervision, in which banking, securities, and insurance supervision is combined within a single authority, thereby covering the entire financial sector.

¹¹⁸ 2019 ESAs Joint report. The Latvian regulatory sandbox, however, limits the product scope to testing only of “electronic payment or electronic money service”, see under: <https://www.fktk.lv/en/licensing/innovation-and-fintech/innovation-sandbox/>.

¹¹⁹ See about the Dutch regulatory sandbox under https://www.dnb.nl/en/binaries/More-room-for-innovation-in-the-financial%20sector_tcm47-361364.pdf.

¹²⁰ For example, the innovation hub operated by the Cyprus’s SEC is limited to its remit - securities and investment markets, in Greece there are two separate innovation hubs - one for banking and insurance and one for securities markets.

¹²¹ See 2019 ESAs Joint report, mentioning in particular the Dutch and the Belgian innovation hubs, which are jointly operated by the prudential and the market conduct regulators - see under <https://www.fsma.be/en/fintech-contact-point> and <https://www.dnb.nl/en/supervision/innovationhub/index.jsp#>.

¹²² Buckley, Amer, Veidt, Zetsche 2019, Building FinTech Ecosystems, p. 65.

¹²³ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

¹²⁴ Lim, Low 2019, Regulatory Sandboxes.

¹²⁵ In some Member States, access to the designated FinTech contact point / innovation hub is limited to non-authorised entities, while authorised ones are requested to revert to their usual contact point for supervisory purposes (AT, CZ).

¹²⁶ 2019 ESAs Joint report.

¹²⁷ Ibid.

of such a requirement is to ensure that the testing parameters imposed by the supervisory authority are enforceable against the financial institution, as the technology provider itself is not a regulated entity (akin to outsourcing arrangements)¹²⁸. Allowing access to such partnering technological entities is relevant in the context of enabling the supervisory authority to monitor developments happening at the edge of the regulatory perimeter. The experience from the sandbox program could help inform an assessment of whether or not some business models need to be regulated in the future¹²⁹, or to provide valuable information for the overall outsourcing and collaboration arrangements between regulated entities and technology providers.

4.2.3. Eligibility criteria

Eligibility criteria can help regulators “prioritize engagement with providers deemed most critical” to achieving the innovation facilitator’s established objectives¹³⁰. In particular, in view of the close engagement with sandbox entities that is necessary in customised sandbox models (see more in Chapter 4.3), eligibility criteria for admission to testing are an essential part of the design. Applications are examined against such criteria and companies are only admitted to the sandbox if they satisfy them¹³¹. Many of the innovation hubs do not establish eligibility criteria and are open to all inquiries¹³². However, in some Member States, eligibility criteria are also set for access to the hub, in particular where the setup of the innovation hub is broader and provides more personalised guidance and support than a simple dedicated contact point.

Table 1 provides an overview of the most commonly used eligibility criteria for access to the innovation facilitators operating in the Member States. The requirement to demonstrate **genuine innovation** features predominantly¹³³. It is an essential criterion for entry, and in a sandbox, the determination made by the regulator can indirectly influence market viability propositions and thus market outcomes¹³⁴. In general, this criterion requires demonstration that the financial services product or service is new, meets an untapped consumer need, or does that better than existing market players or products¹³⁵. However, the way in which that criterion is understood may vary from jurisdiction to jurisdiction¹³⁶. In some Member States, access to the regulatory sandbox is open only for financial services, products or business models that are new to that country’s financial market¹³⁷.

Other common eligibility criteria include the potential of the product or service to bring benefits for consumers and the financial system¹³⁸, its need for support or testing, and a certain product maturity / readiness to test¹³⁹.

¹²⁸ 2019 ESAs Joint report.

¹²⁹ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

¹³⁰ UNSGSA FinTech Working Group and CCAF 2019, Early lessons.

¹³¹ 2019 ESAs Joint report.

¹³² Jenik, Lauer 2017.

¹³³ 2019 ESAs Joint report.

¹³⁴ Ahern 2020.

¹³⁵ Ibid.

¹³⁶ For example, eligibility to the Dutch regulatory sandbox does not require that the innovation result from the application of technology, as “its scope is decidedly broader than just FinTech”, see AFM/DMB, [More room for innovation in the financial sector](#), December 2016.

¹³⁷ See for example, the eligibility criteria of the Lithuanian sandbox <https://www.lb.lt/en/regulatory-sandbox>.

¹³⁸ 2019 ESAs Joint report.

¹³⁹ See for example the draft law of the Spanish regulatory sandbox <https://www.twobirds.com/en/news/articles/2020/spain/spain-approves-the-legislative-proposal-that-implements-a-regulatory-sandbox>. Also, Jenik, Lauer 2017.

Table 1: Most commonly used eligibility criteria in the EU innovation facilitators

Criterion	Description	Examples
Genuine innovation	The FinTech product or service is truly innovative and/or significantly different from those currently available	BG, CY, DK ⁽ⁱ⁾ , EE, EL ⁽ⁱ⁾ , ES, HR, HU , IE, LT , LV , NL , MT , PT ⁽ⁱ⁾ , RO, SK
Benefits to consumers and the financial system	The FinTech product or service has the potential to provide a better outcome for investors and consumers, for financial stability, or for market integrity	BG, DK , EE, EL, ES, HR, HU , LT , LV , NL , MT , PT, SK
Background research	The provider has sought to understand the regulatory framework before approaching the innovation facilitator	BG, CY, EE, EL, HR, NL, RO, SK
Project maturity / Test Readiness	The project has reached a sufficiently mature stage, considering the resources invested and the development stage of the product or service	DK , ES, HU , IE, LT , NL , MT , PT
Need for support / testing	The FinTech product or service has a genuine need for support, i.e. the innovation doesn't easily fit the existing regulatory framework and cannot be handled through the usual supervisory channels	BG, DK , HR, LT , NL , MT , PT, SK
Risk mitigation ⁽ⁱⁱ⁾	The provider has ensured that potential risks arising from the proposed product or service are assessed and mitigated, including to consumers and the market	EE, EL, NL
Commitment to investor protection and compliance	A commitment by the applicant entity to investor protection and culture of compliance	CY, EL
Serve domestic market-	The provider intends to offer the proposed product or service to the domestic market	LT , HU

Notes: This overview does not purport to be exhaustive; it includes regulatory sandboxes and innovation hubs with eligibility criteria for access among the operational innovation facilitators the EU Member States.

⁽ⁱ⁾ **Bold** in country abbreviations indicates reference to the regulatory sandbox in that country. EL refers to the innovation hub operated by the Securities Market Commission and not the one by the Greek Central Bank. PT refers to the joint Innovation hub by Banco de Portugal (BdP), Comissão do Mercado de Valores Mobiliários (CMVM) and Autoridade de Supervisão de Seguros e Fundos de Pensões (ASF) and not to the designated contact point operated by BdP.

⁽ⁱⁱ⁾ In many countries, this is part of the testing parameters and not an eligibility criterion.

Source: Author's own elaboration based on the UNSGSA FinTech Working Group and CCAF (2019), Early Lessons, the 2019 ESAs Joint Report, and information published on the websites of the innovation facilitators.

As exemplified by the Table, many of these criteria leave a **significant leeway for interpretation** and allow for **discretion in the selection process**. That is why the question of how thoroughly applications are assessed and vetted is essential. Scholars point to the risk that the standards for evaluating sandbox applications may suffer in an attempt to foster and promote their financial centre within a broader FinTech competitive agenda¹⁴⁰. Similarly, some jurisdictions have introduced expedited decision-making deadlines for sandbox applications in the pursuit of giving their jurisdiction a competitive edge

¹⁴⁰ Ahern 2020.

and with a view to enabling innovative products to come to market more quickly¹⁴¹. This could lead to missed opportunities, for example in terms of other products that could have been more beneficial, but were not selected. Similarly, during the initial selection process it can be difficult to assess the full extent of the risks presented by the innovative product, service or business model, or those related to the technology underlying the innovation¹⁴². If no sufficient safeguards for compensation in case of a failed testing are set out, a resulting customer harm could raise liability issues¹⁴³. Moreover, even if a product has successfully completed the testing phase in a sandbox, once deployed on a wider scale, it may prove to be less beneficial or even harmful to consumers and financial stability¹⁴⁴.

Several scholars question the **adequacy of the genuine innovation requirement** and the capacity of regulators to assess it¹⁴⁵. Such an assessment would inevitably be subjective as it depends on the level of the supervisor's knowledge about specific products and services that are already available. While the staff assessing the applications would undoubtedly make their best efforts (not the least due to the reputational risks involved), given the rapidly changing FinTech landscape, they "may be heavily reliant on observation-based learning, often from regulatory actors with whom they are engaged in regulatory dialogue, rather than having the benefit of direct experiential learning"¹⁴⁶. Relatedly, there is a concern about potential "industry capture" of the regulator, induced by sympathy based on prolonged exposure to the industry's perspective. This can be further accentuated by the close engagement in the context of innovation facilitators, which eventually could lead to undermining consumer interest¹⁴⁷.

Moreover, as mentioned earlier, in the context of possible risks related to the operation of innovation facilitators, selective procedures for access might raise competition and uneven playing field issues. A process of selection would determine which entity deserves to be granted preferential treatment and practical advantages in terms of personalised advice, guidance and support within a hub¹⁴⁸, and in the case of a regulatory sandbox, in terms of adjusting and customising the regulatory framework to the specific proposition. Therefore, if eligibility criteria are part of the design of an innovation facilitator, they should be clearly defined and transparent. Even if they are, by nature many of them would still leave room for interpretation and the use of discretion. Therefore, having a robust framework to ensure that the eligibility criteria are applied consistently and after a thorough analysis is essential in the context of avoiding regulatory arbitrage and maintaining a level playing field. Moreover, effective and robust arrangements for sharing supervisory learnings with the broader FinTech ecosystem are essential (see more in Chapter 4.4.1.)

4.3. Regulatory Sandboxes and Regulatory Relief

As mentioned in Chapter 3.1., testing in a regulatory sandbox usually implies the use of some regulatory relief or adjustments to the way the regulatory framework is applied, subject to certain safeguards. Among the different models for set up and operation of regulatory sandboxes globally, the nature of the regulatory relief and the way in which it is granted diverges significantly across

¹⁴¹ Ahern 2020.

¹⁴² Lim, Low 2019, Regulatory Sandboxes.

¹⁴³ In some jurisdictions, the supervisor can be held liable (under civil, administrative and/or criminal law) for decisions on admission in a regulatory sandbox, which could partly explain the reluctance of some regulators to operate a regulatory sandbox. See more about this in Jenik, Lauer 2017

¹⁴⁴ Lim, Low 2019, Regulatory Sandboxes.

¹⁴⁵ Buckley, Arner, Veidt, Zetsche 2019, Building FinTech Ecosystems, p. 62, citing also Bromberg, L., Godwin, A., Ramsay, I., [Fintech Sandboxes: Achieving a Balance Between Regulation and Innovation](#), December 2017, Journal of Banking and Finance Law and Practice Vol.28, No. 4, 2017, pp. 314-336.

¹⁴⁶ Ahern 2020.

¹⁴⁷ Chiu 2017.

¹⁴⁸ Ahern 2020.

jurisdictions. This question is also highly relevant in the context of the potential risks emerging from the operation of regulatory sandboxes, in particular their deregulatory potential and the possible negative impact on the level playing field.

In the EU, the currently operational regulatory sandboxes have adopted a model based on customised application of existing rules, using the available tools for supervisory discretion. Within a sandbox, the latitude afforded to supervisors to waive certain regulatory requirements or to apply them in a flexible way varies among Member States, and faces the boundaries set by the EU harmonisation.

4.3.1. EU customised sandbox model

The regulatory sandboxes currently operating in the EU apply ‘customized sandbox’ regimes in the sense that the application of the existing rules is adapted to the individual propositions admitted to the sandbox. Given the highly harmonized EU financial regulatory framework, a relevant question in this context is what tools regulators may use to allow for such flexibility. Individual regulatory sandboxes publish a list of requirements from which a derogation may be granted¹⁴⁹, others provide some guidance on how the regulator will exercise its discretion¹⁵⁰. In overall, it is difficult to provide a general answer, due to the differences among supervisory mandates and powers of the competent authorities in the individual Member States. It is possible, however, to identify some common elements.

The 2019 ESAs Joint report concluded that in the EU, the established sandboxes “**do not entail disapplication of regulatory requirements that must be applied as a result of EU law**”¹⁵¹. Neither do they allow the carrying out of regulated activities without authorisation- if the company plans to engage in regulated activities, it will be required to obtain such a licence before proceeding to testing¹⁵².

Against this background and based on the structure of the EU legal framework, **flexible application of the rules** appears possible broadly in the following contexts:

- regulatory space outside the scope of EU legislation (for example, due to absence of EU regulation, exemptions for certain activities or certain thresholds, below which the EU legislation does not apply);
- adaptation to national rules implementing EU Directives (for example, which exceed the minimum EU requirements or otherwise divergent implementation¹⁵³);
- proportionality levers, embedded in EU legislation;
- adaptation to the authority’s own supervisory practices; and
- in some cases, enforcement waivers (‘no-action letters’)¹⁵⁴.

Figure 6 displays a graph used by the Dutch supervisors to depict the layers, in which flexibility is available. Evidently, the room for flexibility is greater where this depends on the supervisor’s

¹⁴⁹ See for example about the Hungarian regulatory sandbox, [MNB Decree on diverging rules of compliance with obligations under certain MNB Decrees](#).

¹⁵⁰ See for example about the Dutch regulatory sandbox, https://www.dnb.nl/en/binaries/More-room-for-innovation-in-the-financial%20sector_tcm47-361364.pdf.

¹⁵¹ 2019 ESAs Joint report.

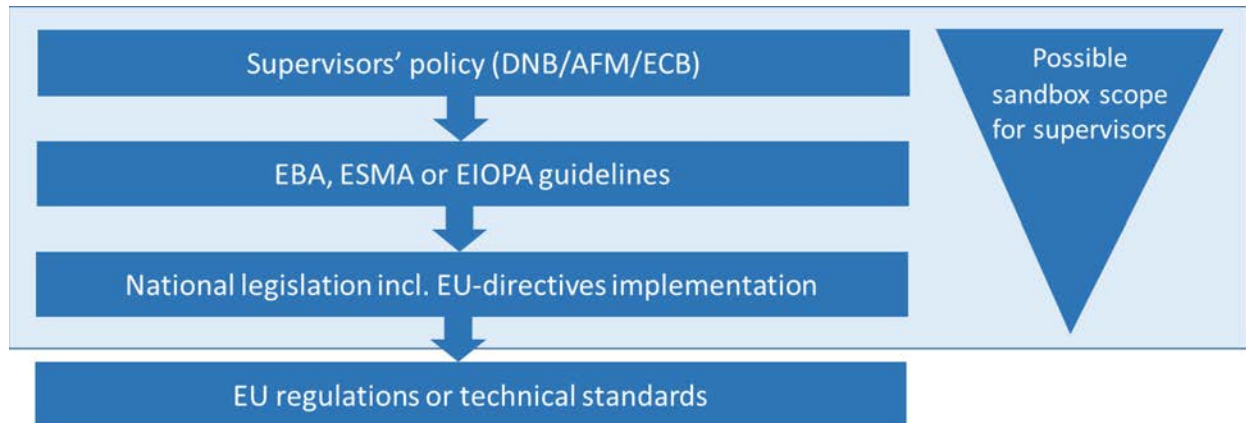
¹⁵² Ibid.

¹⁵³ On the latter, see 2019 ESAs Joint Report, para 119. For an anecdotal evidence on this, see Zetzsche, Buckley, Arner, Barberis, 2017, *Regulating a Revolution*, p. 60.

¹⁵⁴ See for example, [Resolution No 03-166 of the Board of the Bank of Lithuania on the approval of the regulatory sandbox framework of the Bank of Lithuania](#), 19 September 2018, para 10.3 as well as the Maltese MFSA Regulatory sandbox FAQ 13 under <https://www.mfsa.mt/wp-content/uploads/2020/07/MFSA-Regulatory-Sandbox-FAQs.pdf>.

discretion alone, it becomes more limited where ESAs guidance is involved, and minimal (if any) where national legislative changes are necessary.

Figure 5: Layers of regulatory flexibility



Source: AFM/DMB, [More room for innovation in the financial sector](#), December 2016.

Most commonly, to customise the applicable requirements, the operational sandboxes in the EU use the exercise of **legally embedded levers of proportionality**¹⁵⁵. Many requirements under the EU financial services legislation contain proportionality tools, which allow for supervisory discretion by taking into account certain factors, such as the risk profile, or the size, complexity and interconnectedness of the firms concerned. Those tools are available to and used by the competent authorities, whether they have an innovation facilitator or not¹⁵⁶. The 2019 ESMA survey on the application of 'proportionality' and 'flexibility' when licensing FinTech firms¹⁵⁷ showed that the majority of national competent authorities consider the EU framework flexible enough to apply licensing or authorisation requirements to emerging FinTech business models, products or services, in a proportionate manner¹⁵⁸. Box 1 provides an example from the experience of the Dutch regulatory sandbox as one of the longest-lived sandboxes operating in the EU¹⁵⁹.

¹⁵⁵ 2019 ESAs Joint report.

¹⁵⁶ Ibid.

¹⁵⁷ ESMA [Report on Licensing of FinTech business models](#), July 2019.

¹⁵⁸ Some Member State's supervisors argued, however, that limited flexibility would be beneficial for a more efficient framework and greater supervisory and regulatory convergence, see ESMA [Report on Licensing of FinTech business models](#), July 2019, p. 30.

¹⁵⁹ After the withdrawal of the UK from the EU.

Within a sandbox, the flexible application of some requirements is combined with **specific testing parameters**, which are determined on a case-by-case basis and tailored to the nature of the testing activity¹⁶⁰. For example, sandbox entities will be subject to restrictions, such as the maximum number of customers, or types of clients served, or volume limitations. In addition, they would be required to “put in place safeguards that reflect the risks and benefits of the proposed innovation, including strengthened disclosure, and a compensation to limit the potential impact of test failure on customers and other market participants”¹⁶¹.

Among the safeguards set out for the sandbox testing, appropriate arrangements to **protect consumers** play a prominent role, such as appropriate risk disclosures and arrangements to restore any detriment caused to consumers as a result of the testing. Generally, sandbox participants must have arrangements in place to demonstrate that they can compensate clients in the event of any loss suffered during testing (for example Denmark requires a plan ensuring that consumers would not be left worse off)¹⁶². Regarding disclosure, clients must be informed of the potential risks of participating in the testing (for example, Denmark requires a standardised wording for information to customers, including a clarification that the authority has not endorsed the proposition)¹⁶³. Clients also must be informed of the redress mechanisms in case they suffer detriment.

The assessment of the risks linked to innovative products, services or business models before the full launch on the market may not be simple. This may lead to a situation where the testing parameters established by the supervisor at the outset are sub-optimal (i.e. too light or too burdensome requirements, inadequate tools for data collection and analysis)¹⁶⁴. Therefore, a provision enabling the regulator to adjust the testing parameters in the course of the testing is highly relevant in this context¹⁶⁵.

Throughout the testing period¹⁶⁶, the firm is expected to actively communicate and collaborate with the supervisor pursuant to an agreed engagement plan¹⁶⁷. Testing can be terminated if the firm fails to comply with the testing parameters, if it is necessary to mitigate consumer detriment, or if the project fails for a lack of demand or else¹⁶⁸. If the testing parameters are not complied with, the supervisors

Box 1: The experience of the Dutch regulatory sandbox

After the supervisor has assessed that in view of the spirit of the law, “the application of prevailing legislation or policies is unnecessarily restrictive, unclear or disproportionate ..., it will expand or amend current supervisory policies, where possible”¹.

The Dutch supervisors report that out of “several dozens of operators” in the past 3 years, “in some cases it was actually necessary to provide bespoke solutions”: a few required legislative changes, while other necessitated “a fresh interpretation of existing regulations or policies to remove ambiguities that would otherwise be unnecessarily restrictive”¹.

Moreover, “there were also queries for which a tailor-made solution was not needed or impossible, either because the regulations did not constitute an unnecessary restriction or because parties incorrectly expected to be able to experiment free of regulation”¹.

¹ DNB/AMF [Report Continuing dialogue Innovation Hub and Regulatory Sandbox: lessons learned after three years](#), August 2019.

¹⁶⁰ 2019 ESAs Joint report. In their nature, the testing parameters are akin to the conditions for applications of the horizontal waivers and exemptions outlined in chapter 4.3.2 with the difference that in the customised models, they are individually tailored to each specific proposition that is being tested.

¹⁶¹ Jenik, Lauer 2017.

¹⁶² 2019 ESAs Joint report.

¹⁶³ Ibid.

¹⁶⁴ Jenik, Lauer 2017.

¹⁶⁵ See for example, [Resolution on the approval of the regulatory sandbox framework of the Bank of Lithuania](#), 19 September 2018, para 16.

¹⁶⁶ Usually, participation in a regulatory sandbox is time-limited (i.e. 6 to 12 months) with a possibility for a short extension. In the Netherlands, there is no usual testing period; it is determined entirely on a case-by-case basis, see 2019 ESAs Joint report.

¹⁶⁷ 2019 ESAs Joint report.

¹⁶⁸ Ibid.

would have the full set of their enforcement powers to intervene (e.g. may issue warnings requiring remedial action, terminate the test, withdraw or suspend licence, and/or impose a fine)¹⁶⁹.

The parameters for exit from the regulatory sandbox after the testing period expires are defined often from the beginning (in an 'exit plan'). If testing fails, the sandbox firm would normally be required to cease running its innovation¹⁷⁰. In terms of consumer protection, it is essential that the exit plan contain 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. Scholars point out that it may be beneficial for regulators to maintain intensified post-sandbox engagement with participants, even after the company has successfully become authorised, in order to gather further insights on the actual impact on financial markets¹⁷¹.

Scholars emphasise the need of establishing a robust and transparent framework for the available customisation tools that the regulator can apply and for the principles for determining the testing parameters, with the argument there is a public interest in ensuring that regulatory discretion is exercised in a consistent and well-reasoned manner¹⁷². Robust customer protection safeguards and an adequate framework for a review and scrutiny of the operation and outcomes of the sandbox should form part of such framework.

4.3.2. Examples of alternative “sandboxing” models outside the EU

Outside the EU, some jurisdictions have granted regulatory relief by targeting innovative companies in a horizontal way, for example in the form of a class waiver from licencing requirements. Such relief measures are often categorised or denominated as sandboxes, although they do not display the entire set of elements of a regulatory sandbox as defined above (see Chapter 3.1.). What is similar, however, is the fact that, effectively, they consist of a set of requirements and safeguards, compliance with which allows FinTech entities to carry out regulated activities subject to certain regulatory lenience.

For example, Australia grants a time-limited class-waiver from the requirement to obtain a licence before engaging in certain regulated activities (“[fintech licencing exemption](#)”)¹⁷³. It is applicable to a list of specific activities and products, which are considered to be of lower risk (e.g. advice on or trading of, simple financial products). The companies making use of the exemption must satisfy certain conditions, such as limits on the number of clients and on level of exposure, combined with provisions on consumer protection and adequate compensation. Similarly, the Swiss “sandbox” regime involves a horizontal exemption from the obligation to obtain a banking licence¹⁷⁴. The conditions for the application of the exemption are set horizontally and include a pre-defined volume threshold and disclosure requirements¹⁷⁵. Such conditions closely resemble the testing parameters determined on a

¹⁶⁹ 2019 ESAs Joint report.

¹⁷⁰ Jenik, Lauer 2017.

¹⁷¹ Allen, 2019, Regulatory Sandboxes.

¹⁷² Chiu 2017.

¹⁷³ In May 2020, Australia enhanced its regulatory sandbox regime with effect from September 2020; see more under <https://asic.gov.au/for-business/innovation-hub/enhanced-regulatory-sandbox/>. In addition, the Australian Securities and Investment Commission has powers to provide tailored individual relief - see Regulatory guides [51](#) and [167](#).

¹⁷⁴ See more about the Swiss regime in Witz, D., [Sandbox Games for RegTech](#) in: Barberis, J., Douglas A.W., Buckley, R.P. (eds.), *The REGTECH Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries in Regulation*, John Wiley & Sons, Incorporated, 2019 (hereinafter ‘Witz 2019 in: Barberis, Douglas, Buckley (eds.)’).

¹⁷⁵ Specifically, a company may accept clients’ deposits up a total amount of 1 mil CHF, it must inform its clients in advance that it is not supervised and the deposits are not covered by the deposit guarantee and it may not engage in interest margin activities. Once the company reaches this threshold, it must obtain either a full banking licence or the specific FinTech licence, available for deposit taking activities up to 100 mil CHF. For more details, see Swiss Federal Department of Finance, Revision der Bankenverordnung (BankV) «FinTech-Bewilligung», Erläuterungen, November 2018, available at: <https://www.news.admin.ch/news/message/attachments/54881.pdf> and

case-by-case basis in the customised sandbox models; however, they are horizontally pre-determined for all in a uniform way. Such horizontally applicable waivers have the advantage of ensuring a level playing field among peer entities. Since the conditions and parameters for application of the waivers are pre-determined, such models also do not raise the issue of whether supervisory discretion is applied consistently and objectively, as it is the case with customised sandbox regimes. Another advantage is that they work in an automatic way, compared to a case-by-case customisation, thereby not increasing the burden on the supervisory capacity.

However, pre-determined conditions may not reflect specific risks and opportunities, nor take into account potential systemic implications¹⁷⁶. Moreover, supervisors' exposure and opportunity to acquire hands-on knowledge of the technological innovations is limited, if any¹⁷⁷.

4.4. Follow-up and knowledge transfer

As outlined above, an essential part of the benefits from operating innovation facilitators consists in gaining enhanced knowledge: both, for the FinTech entities and for the supervisors. Therefore, effective mechanisms to optimise the use and sharing of such knowledge need to be embedded in their design. Effective knowledge sharing mechanisms are also relevant in order to minimise certain risks stemming from the operation of innovation facilitators. The analysis below distinguishes between knowledge transfer to the broader FinTech community and supervisory knowledge transfer within the relevant authority itself and with other national authorities.

4.4.1. Knowledge transfer to the broader FinTech community

Sharing strategic learnings and common principles from the supervisor's experience, publicly and with the broader FinTech community is important to support effective regulatory and supervisory frameworks¹⁷⁸. This is particularly relevant where access to the innovation facilitator is based on selective procedures in order to mitigate the risk of uneven playing field by ensuring that all firms can benefit from emerging regulatory and supervisory policies. Even where the innovation facilitator is open to all inquiries, information and guidance given to individual entities help reduce legal uncertainty about the application of the existing regulatory framework. Hence, bridging the knowledge gap that may occur between entities within the innovation facilitator and outside of it is important in order to minimise risks to the level playing field. Better communications of the 'lessons learned' to the wider market would also facilitate a better understanding of supervisory expectations and could support the promotion of compliance culture throughout the FinTech ecosystem¹⁷⁹.

Currently, for example, some competent authorities publish questions and answers (Q&As) on a case-by-case basis¹⁸⁰. Other supervisors issue public statements¹⁸¹ on specific innovation related issues, identified through the questions channelled via the innovation hub¹⁸¹ or based on the experience from the regulatory sandbox¹⁸². A robust structure for record keeping and transparency actions is highly

Background Documentation, November 2016, Available at: <https://www.news.admin.ch/newsd/message/attachments/45938.pdf>. In April 2019, this regime was extended to crowd lending business models.

¹⁷⁶ Buckley, Amer, Veidt, Zetzsche 2019, Building FinTech Ecosystems, p. 68.

¹⁷⁷ Witz 2019 in: Barberis, Douglas, Buckley (eds.). See also Lim, Low 2019, Regulatory Sandboxes.

¹⁷⁸ 2019 ESAs Joint report. IMF/WB Bali Fintech Agenda, October 2018.

¹⁷⁹ See EFIF, Summary of the December 2019 Meeting, available under: <https://esas-joint-committee.europa.eu/Publications/efif/December%202019%20-%20minutes.pdf>.

¹⁸⁰ See for example the Portuguese Innovation hub under https://www.cnmv.es/docportal/Legislacion/FAQ/QAsFinTech_EN.pdf.

¹⁸¹ 2019 ESAs Joint report. For example, see the Portuguese supervisory note on ICOs under <http://cnmv.es/DocPortal/Fintech/CriteriosICOsEN.pdf>.

¹⁸² For example, see the Danish supervisor's recommendations when using supervised machine learning based on the experience in the regulatory sandbox https://www.dfsa.dk/~media/Tilsyn/Recommendations_when_using_supervised_ML-pdf.pdf?la=en.

relevant in this context. However, the 2019 ESAs Joint report, states that few such actions were reported in the context of innovation hubs. In addition, some competent authorities conduct specific reviews of the questions raised and the responses provided¹⁸³. Such reviews serve for assessing the overall need of clarifications or of changes to the supervisory requirements in relation to innovative products, services and business models. For example, the Dutch supervisor “amended its interpretation of some rules and provided clearer guidance on others based on interaction within its innovation hub”¹⁸⁴.

Moreover, sharing experiences and best practices with the broader FinTech community and with the public at large could help catalyse a wider discussion on the most effective regulatory response to the technological developments¹⁸⁵. For example, several competent authorities¹⁸⁶ have established FinTech Forums as part of the innovation hub to reach out to a broader group of stakeholders. Such forums gather the supervisor, academia and industry representatives to discuss how to support the FinTech environment and identify unintended consequences of regulation that prevent or complicate the use of new technologies in the financial sector. Other innovation facilitators have dedicated outreach arrangements for engagement with a broader range of stakeholders in addition to the operation of an innovation hub¹⁸⁷. Engagement with such a broader group of entities can help mitigate the potential risk of ‘industry capture’ of the regulator, induced by sympathy based on “prolonged exposure to the perspective of some part of the industry” during the close engagement in the context of innovation facilitators (see above in Chapter 4.2.3.). In this context, pro-actively seeking consumer input as part of the regulator’s broader outreach is crucial.

4.4.2. Supervisory knowledge transfer within the authority and with other relevant authorities

Having effective channels for supervisory knowledge transfer as part of the design of an innovation facilitator is highly relevant in order to ensure coherent and consistent supervisory practices. Such channels are necessary in several dimensions:

- internally, within the authority, which operates the innovation facilitator itself;
- in relation to other financial sector authorities; and
- with other authorities competent for relevant policy areas, beyond the financial sector.

First, it is essential that the innovation facilitators have in place some **internal mechanisms for knowledge transfer** to ensure the consistency and coherence in addressing similar cases. In this context, the internal organisation of the innovation facilitator will have an impact on the appropriate arrangements for knowledge sharing. For example, within innovation hubs the internal set up for channelling and processing of the requests may be organised differently (such as, dedicated FinTech units or by distributing responsibility for FinTech among routine supervision units across the authority). While each of them has its own advantages, depending on what model is chosen, appropriate internal channels need to be established to spread FinTech technical expertise across the agency and to draw

¹⁸³ 2019 ESAs Joint report.

¹⁸⁴ UNSGSA FinTech Working Group and CCAF 2019, Early lessons, quoting an interview with the Dutch AFM of August 2018.

¹⁸⁵ IMF/WB Bali Fintech Agenda, October 2018.

¹⁸⁶ For example, the Danish, Dutch, French, and the Greek Securities Markets Authority.

¹⁸⁷ For example, see about the Stakeholder Outreach program of the Central Bank of Ireland, Innovation Hub 2019 Update, <https://www.centralbank.ie/docs/default-source/regulation/innovation-hub/innovation-hub-2019-update.pdf?sfvrsn=5>.

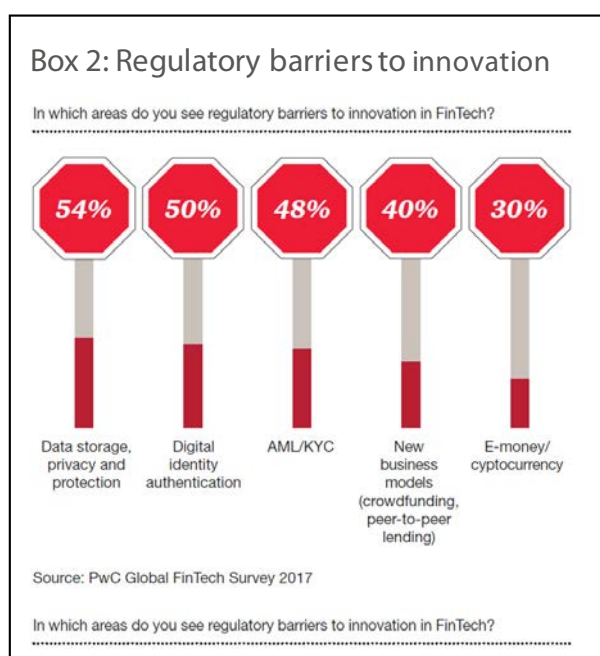
from the broader supervisory knowledge within the authority¹⁸⁸. Similar observations can be made regarding ensuring consistency in the customisation of the sandbox parameters.

Second, the novel complexities generated by FinTech often impact on a broader area of public policies, which lie outside the regulatory perimeter of the authority operating the innovation facilitator¹⁸⁹. Therefore, coordination and knowledge sharing “across multiple arms of government and regulatory agencies (financial and nonfinancial) is needed”¹⁹⁰. Where a single-sector regulator operates an innovation facilitator, it is essential to ensure the adequate and necessary **flow of information to the other financial sectoral authorities**. Challenges and learnings in one sector can provide fruitful insights that are relevant for other sectors of the financial system. Moreover, such cooperation is necessary to prevent risks that can grow in the gaps of sectoral oversight¹⁹¹. In the Netherlands¹⁹² and Belgium¹⁹³ (which have a “twin-peaks” model of financial supervision), the banking and the financial market regulators jointly operate the innovation facilitators. They report the following advantages of jointly operated models:

- automatic sharing of information, which facilitates efficiencies;
- possibility to keep track of the questions and ensure a consistent approach; and
- more efficient monitoring of cross-sectoral issues and of the regulatory perimeter¹⁹⁴.

In the Member States with several financial sectoral regulators, the authorities have established specific memoranda of understanding (MoUs) to facilitate the coordination on financial innovation issues¹⁹⁵.

Moreover, **broader regulatory cooperation beyond the financial sector** could be beneficial, as firms are exploring innovative business models, products or services, which require considering multiple policy areas. In particular, coordination on issues such as competition, fraud, anti-money laundering, cybersecurity, consumer and data protection may be highly relevant in the FinTech space. The importance of such cooperation is emphasized by the findings in the EBA report on potential impediments to cross-border activity¹⁹⁶ as well as in the report of the Expert Group on Regulatory Obstacles to Financial Innovation¹⁹⁷. Those reports identify issues, such as consumer protection and anti-money laundering (AML),



¹⁸⁸ Taylor, Ch., Wilson, Ch., Holttinen, E., Morozova, A., [Institutional arrangements for Fintech regulation and supervision](#), IMF Fintech Notes 19/02, December 2019 (hereafter ‘Taylor, Wilson, Holttinen, Morozova 2019, Institutional arrangements’).

¹⁸⁹ Taylor, Wilson, Holttinen, Morozova 2019, Institutional arrangements.

¹⁹⁰ Ibid.

¹⁹¹ Brummer, Yadav, 2017, Innovation Trilemma.

¹⁹² For more information on the Dutch Innovation Hub see <https://www.afm.nl/en/professionals/onderwerpen/innovation-hub>.

¹⁹³ For more information on the Belgian Innovation Hub see <https://www.nbb.be/en/financial-oversight/general/contact-point-fintech>.

¹⁹⁴ 2019 ESAs Joint report.

¹⁹⁵ Ibid.

¹⁹⁶ EBA Report on potential impediments to the cross-border provision of banking and payment services, October 2019. Available at: <https://eba.europa.eu/eba-calls-european-commission-take-action-facilitate-scaling-cross-border-activity>.

¹⁹⁷ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

among the potential obstacles to FinTech innovation and cross-border dissemination. The industry itself¹⁹⁸ identified similar issues among the main regulatory obstacles (See Box 2).

Scholars acknowledge that “given the trade-offs between multiple policy goals” and policy mandates of such a broad range of regulators, “such coordination is likely to be more difficult” than the coordination between financial sector authorities alone¹⁹⁹. Challenges can emerge from the Member State’s overall legal and administrative institutional framework, as well as from the different policy objectives, remits and tools of such authorities. Currently only a few Member States have established dedicated multidisciplinary structures for coordination of the innovation facilitator’s activities on issues, such as consumer protection, competition or data protection. For example, in the Netherlands, since 2017, the competition authority participates the work of the innovation hub to answer questions related to competition issues²⁰⁰. In France, the Data Protection Agency²⁰¹, the Cybersecurity Agency²⁰² and the Financial Intelligence Unit (FIU)²⁰³ are included in the FinTech Forum alongside the prudential and markets supervisors, in an effort to promote improved dialogue between public authorities and the FinTech community²⁰⁴. Among the challenges related to the absence of multidisciplinary innovation facilitators, the 2019 ESAs Joint report points at the intensified risk of slower or incomplete response to queries or of multiple referrals of companies to another relevant authority, with which they need to initiate separate discussions²⁰⁵. In such broader policy context, the cross-sectoral framework for technological experimentation envisaged in Portugal²⁰⁶ could help bridge the traditional policy silos. Moreover, in an attempt to go further than a simple cooperation with other policy area authorities, the UK FCA launched a feasibility study on establishing a [cross-sectoral sandbox](#) as single-point-of-entry for firms. It would test innovative propositions with multiple UK regulators in a controlled environment²⁰⁷. It remains to be seen whether the project will be successfully implemented.

¹⁹⁸ See PwC, Global FinTech Report 2017, Redrawing the lines: FinTech’s growing influence on Financial Services, available at: <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2017.pdf>.

¹⁹⁹ Taylor, Wilson, Holttinen, Morozova 2019, Institutional arrangements.

²⁰⁰ See under: <https://www.afm.nl/en/professionals/onderwerpen/innovation-hub>.

²⁰¹ Commission Nationale de l’Informatique et des Libertés (CNIL), <https://www.cnil.fr/>.

²⁰² Agence nationale de la sécurité des systèmes d’information (ANSSI), <https://www.ssi.gouv.fr>.

²⁰³ Traitement du renseignement action contre les circuits financiers clandestins (TRACFIN), <https://www.economie.gouv.fr/tracfin>.

²⁰⁴ 2019 ESAs Joint report. See also, French Prudential and Resolution Authority (ACPR), An approach opened to the development of fintechs and innovation under: <https://acpr.banque-france.fr/en/acpr/assignments/providing-overall-view-financial-system>.

²⁰⁵ 2019 ESAs Joint report.

²⁰⁶ Portuguese Council of Ministers Resolution Nr 29/2020, setting out the legal principles for the establishment of Technological Free Zones, specifically refers to the objective of avoiding a scattered regulatory sandbox approach across sectors.

²⁰⁷ See UK FCA Call for Input: Cross-sector Sandbox, May 2019, <https://www.fca.org.uk/publication/call-for-input/call-for-input-cross-sector-sandbox.pdf>.

5. THE SINGLE MARKET PERSPECTIVE

KEY FINDINGS

- Currently innovation facilitators operate at national level. This could lead to barriers to knowledge sharing and to the development of different regulatory and supervisory practice within the Single Market, which could cause market fragmentation and impede the scaling-up of financial innovations across the EU.
- To date, no large-scale evaluation has been carried out to assess the outcomes and the impact of the operation of innovation facilitators in the EU. Granular and comparable aggregated data about key elements that are necessary for such an analysis is not available. This is mainly due to the short life span of the innovation facilitators and the divergent modalities for publications of statistics (if any).
- Once innovation facilitators become more established, such an assessment would need to be carried out. In the meantime, arrangements are necessary to ensure the availability of granular and comparable information for these purposes (such as, number and type of entities, services, products and business models). In the case of regulatory sandboxes also information about the regulatory relief granted, the considerations for granting it and the safeguards applied is relevant. Such information should be shared within the EFIF to support ESAs' monitoring and supervisory convergence work.
- While a harmonised EU framework for the design and operational parameters of innovation facilitators can have certain advantages, it also presents some challenges. Going forward, however, there will be some merit for the ESAs to build on and further develop their recommendations for best practices. Moreover, establishing certain common principles and standards would be valuable, in particular, regarding the statistics and key indicators that are to be published and shared data, as well as regarding adequate arrangements for knowledge sharing.
- The direct experiential and strategic learnings from the operation of innovation facilitators could play an important role for evidence-based policymaking. While innovation facilitators operate nationally, an important part of the policy response is developed at EU level. This necessitates appropriate channels for knowledge sharing at EU level to enable the formulation of an EU-wide policy response. In this context, the role of EFIF could be strengthened, in particular in speeding up the identification of strategic policy areas, in consolidating EU-wide platforms for outreach to the broader FinTech community and in multidisciplinary cooperation on crosscutting innovation-related issues.
- Although the establishment of an EU level regulatory sandbox may seem far-fetched as of now, the possibility of a successful testing, which enables market access across the EU, would make EU Member States, collectively, a more attractive destination for FinTech innovation. EFIF should leverage the opportunity to coordinate cross border testing between nationally operated sandboxes and consider the feasibility of EU-wide experimental projects on specific targeted issues. An interesting proposal for such a targeted experimental project is contained in the recent proposal by the Commission for a Regulation on a pilot regime for market infrastructures based on DLT.
- Enhanced transparency and adequate resources need to accompany an enhanced role of EFIFs to enable its effectiveness and for the purposes of accountability.

Since innovation facilitators currently operate on a national basis, this could lead to barriers to knowledge sharing and to the development of divergent regulatory and supervisory approaches to the innovative use of technology within the Single Market²⁰⁸. This, in turn, can lead to market fragmentation and impede the scaling-up of financial innovations across the EU²⁰⁹.

5.1. Assessment of the outcomes and impact

To date, no large-scale evaluation has been carried out to assess the outcomes and the impact of the operation of innovation facilitators in the EU²¹⁰. While the 2019 ESAs Joint report provides an overview of the different models and of the use of innovation facilitators in the EU, aggregated data about key elements that are necessary for such an analysis is not available. The currently available information is too patchy to allow for a comprehensive overview of the most commonly sought after innovative services, products or business models. Similarly, it does not allow for a proper quantification of the type and size of companies that make most use of innovation facilitators on an aggregate EU level. This is mainly due to the relatively short lifespan of innovation facilitators and to the fact that the statistics published by the supervisory authorities vary significantly (if any)²¹¹.

In terms of **product scope**, the ESAs report that the majority of questions raised within innovation hubs are related to innovative payment and credit services, online platforms (i.e. for crowdfunding, peer-to-peer transfers or insurance), robo-advice, customer identification tools, DLT, Big Data analytics, smart contracts and cloud technology²¹². A glimpse of the types of innovative products, services or business models that have been or are currently being tested in a sandbox, is available in the activity reports on the operation of the sandboxes published by some of the authorities. They include, for example, crypto-assets related activities and crowdfunding²¹³ or projects revolving around machine learning and blockchain²¹⁴.

In terms of **entities concerned**, the ESAs report that the predominant users of innovation hubs have been start-ups, while regulated firms often continue to use their usual supervisory channels²¹⁵. Some innovation hubs publish annual reports on their functioning (for example, AT²¹⁶, IE²¹⁷, CY²¹⁸), which contain some information and statistics on the type of companies and products that have used the hub. Such publications are valuable for the purposes of accountability and can serve as a basis for the regular internal reviews of the functioning and resourcing of the innovation facilitator to ensure it

²⁰⁸ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

²⁰⁹ See in more detail 2019 ESAs Joint Report, paras 109-111.

²¹⁰ On a global level, the UNSGSA FinTech Working Group and CCAF 2019, Early lessons, examines the potential impact of innovation hubs, regulatory sandboxes and RegTech on inclusive FinTech and presents early lessons learned. In the context of a single jurisdiction, a study carried out on the UK sandbox 2018 by Deloitte and Innovative Finance, A Journey Through the FCA Regulatory Sandbox: The Benefits, Challenges, and Next Steps, October 2018, available at <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/financial-services/deloitte-uk-fca-regulatory-sandbox-project-innovate-finance-journey.pdf>.

²¹¹ 2019 ESAs Joint report.

²¹² Ibid.

²¹³ For example, see DNB/AMF [Report Continuing dialogue Innovation Hub and Regulatory Sandbox: lessons learned after three years](#), August 2019, p. 10, which reports that in the past 3 years "several dozens of operators explicitly indicated in their requests that they were interested in the Regulatory Sandbox".

²¹⁴ See Danish FT Lab, First experiences under <https://www.dfsa.dk/Supervision/Fintech/FT-lab>.

²¹⁵ 2019 ESAs Joint report.

²¹⁶ See the Austrian FMA, FinTech Point of Contact 2018, Enhancing innovation, May 2019 <https://www.fma.gv.at/download.php?d=3928>.

²¹⁷ Central Bank of Ireland, Innovation Hub 2019 Update, <https://www.centralbank.ie/docs/default-source/regulation/innovation-hub/innovation-hub-2019-update.pdf?sfvrsn=5>.

²¹⁸ Report on the Activities of CYSec's Innovation Hub, February 2020, <https://www.cysec.gov.cy/CMSPages/GetFile.aspx?quid=15229ef9-9f28-434b-bead-8af0f92af4cc>.

remains fit for purpose. The amount and granularity of information available about the entities that have applied and been admitted to a regulatory sandbox in the EU is very limited²¹⁹.

Moreover, granular information about the **regulatory flexibility applied to sandbox entities** is generally not available. Individual authorities publish a list of requirements from which a derogation may be granted²²⁰, or provide some guidance on how the regulator will exercise its discretion²²¹. The prompt publication by the supervisors of the names and details of the companies and the projects admitted to testing has its challenges. For example, the UK FCA that publishes promptly information about all the participants admitted to testing in each cohort²²², has been criticised with the argument that such a publication may create the appearance of supervisory approval of the tested project, thereby providing competitive advantage to sandbox companies²²³. In addition, some authorities report difficulties with the prompt publication of testing results, as information could be commercially sensitive and contain proprietary or confidential information²²⁴. Still, making such information available would be valuable to allow for an assessment of the outcomes of innovation facilitator frameworks in the EU. In addition, given the preferential treatment that sandbox entities receive, it is a matter of public accountability that the process is kept transparent²²⁵.

When innovation facilitators become more established, it would be opportune to carry out a **proper assessment of the outcomes and impact of the operation of innovation facilitators in the EU**. In the meantime, arrangements need to be made to ensure that **granular and comparable information** is available **about certain key indicators** that are necessary for such an assessment. Relevant in this context appear to be the number, size and types of entities, which use the innovation facilitators, as well as the main and most common innovative services, products or business models. In the context of regulatory sandboxes, it is also relevant to have data about the type of regulatory relief granted (if any), the considerations justifying granting it as well as the applied testing safeguards, including the reasoning behind. Although it would contain data of sensitive nature, scholars argue that public disclosure can be made in terms of the regulators' strategic learning without infringing confidentiality or jeopardising firms' commercially sensitive information²²⁶. Within the Single Market, in particular, it is important to understand the impact of supervisory discretion and the levers of proportionality on the development of emerging technologies and on the new delivery mechanisms, while maintaining robust and consistent standards²²⁷.

Therefore, a balanced approach regarding the timing and detail of such publication needs to be found to enable the necessary transparency for accountability and review purposes while preserving the level

²¹⁹ For example, see DNB/AMF [Report Continuing dialogue Innovation Hub and Regulatory Sandbox: lessons learned after three years](#), August 2019, p. 10, which reports that in the past 3 years "several dozens of operators explicitly indicated in their requests that they were interested in the Regulatory Sandbox". The Danish FT-Lab publishes announcements when a company is admitted to testing in the sandbox and currently lists two companies, see under First experience with FT Lab: <https://www.finanstilsynet.dk/Tilsyn/Information-om-udvalgte-tilsynsomraader/Fintech/FT-Lab>.

²²⁰ See for example about the Hungarian regulatory sandbox, [MNB Decree on diverging rules of compliance with obligations under certain MNB Decrees](#).

²²¹ See for example about the Dutch regulatory sandbox, https://www.dnb.nl/en/binaries/More-room-for-innovation-in-the-financial%20sector_tcm47-361364.pdf.

²²² See FCA Sandbox under <https://www.fca.org.uk/firms/innovation/regulatory-sandbox>.

²²³ An argument is made that a firm's admission to a regulatory sandbox and the associated regulatory oversight has prestige value and, rightly or wrongly, is frequently perceived as providing a regulatory stamp of approval and de facto endorsement the underlying product or service. See more Ahern 2020, quoting Kelly, J., A 'Fintech Sandbox' might sound like a Harmless Idea. It's Not, Financial Times, 5 December 2018.

²²⁴ DNB/AMF [Report Continuing dialogue Innovation Hub and Regulatory Sandbox: lessons learned after three years](#), August 2019, p. 15.

²²⁵ Lim, Low 2019, Regulatory Sandboxes.

²²⁶ Chiu 2017.

²²⁷ [EBA response to the EC consultation on the digital finance strategy/action plan](#), June 2020.

playing field and the confidentiality of commercially sensitive information. In any event, such information should be shared within the EFIF, for several purposes:

- to collect the data necessary for an assessment of the outcomes and operation of innovation facilitators in the Single Market;
- to support the ESAs monitoring and supervisory convergence work; and
- to contribute to the formulation of an adequate EU policy response to FinTech.

5.2. Common principles and standards on the design and operational parameters

As shown in Chapter 4, key elements of the design and operational parameters of innovation facilitators (i.e. objectives, scope, access and eligibility conditions, regulatory relief and safeguards, mechanisms for knowledge sharing) matter in order to ensure consistency in the regulatory treatment of FinTech across the Single Market²²⁸. In the context of regulatory sandboxes in particular, the Expert Group on Regulatory Obstacles to Financial Innovation recommended that the EU develop a harmonised system for their design and operation, so that national supervisory authorities “follow common principles and standards, while the rules and procedures are as streamlined and transparent as possible”²²⁹. While a harmonised framework can have certain advantages in terms of ensuring a level playing field across the Single Market and facilitating cross-border business²³⁰, it also presents certain challenges. The current differences in the models chosen by each Member State for the design and operation of a regulatory sandbox are closely linked to the supervisory mandate, tools and powers of the competent authority / authorities in that country. They differ significantly and developing a system, which can work across all Member States, may not be straightforward. Similar considerations can be made regarding harmonised principles on the design and operation of innovation hubs.

Going forward, however, there will be some merit for the ESAs to build on their recommendations for best practices for the design and operation of innovation facilitators, as set out in the 2019 Joint report and further develop them. Some common principles about key elements of the design and operation parameters of innovation facilitators would be necessary. In particular, common standards regarding the statistics and key indicators that are to be published and shared within the EFIF would enable the collection of comparable and granular data, which is necessary to carry out an assessment of the innovation facilitators’ framework (see previous Chapter 5.1.). Moreover, such common standards appear valuable in relation to the arrangements for adequate knowledge sharing of the learnings from innovation facilitators beyond the entities directly engaged with the facilitator, as well as with other relevant authorities. An assessment of what would be the most appropriate instrument to achieve such common principles and standards is beyond the scope of this study: whether formalising certain of the ESAs recommendations on best practices into ESAs guidelines, or the envisaged, but not yet adopted Commission report on best practices (see Chapter 3.3.), or else.

In the meantime, the monitoring role of the ESAs and their work toward enhancing supervisory convergence remains of crucial importance. Moreover, when upcoming regulatory sandboxes are being developed under the SRSP Regulation (as mentioned in Chapter 3.1.), the technical assistance provided by the Commission services should strive to incorporate the best practices developed by the ESAs into the planned designs.

²²⁸ Lim, Low 2019, Regulatory Sandboxes.

²²⁹ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

²³⁰ Expert Group on Regulatory Obstacles to Financial Innovation 2019, p. 70.

5.3. Strengthening the role of EFIF

As discussed earlier in the study, the experience and knowledge gained through the innovation facilitators could inform an appropriate regulatory response to new technological developments. While the innovation facilitators operate nationally, an important part of the policy response is developed at EU level. As the EU is progressing to implement the EU Digital Finance Strategy, the direct experiential and strategic learnings from the operation of innovation facilitators could play an important role for evidence-based policymaking. Moreover, where the experience with sandbox testing demonstrates certain obstacles originating from the EU regulatory framework, national competent authorities cannot grant derogations. In this context, the EFIF can play an essential role as a platform for knowledge sharing across Member States, in order to foster the development of a common regulatory and supervisory response.

The April 2020 Commission [public consultation](#) on a new Digital Finance Strategy included a dedicated section on the experience with innovation facilitators and on possible future measures in relation thereto. The input provided by the ESAs in response to that consultation contains some ideas on how the **role of EFIF can be further strengthened**, building on the first experiences with its operation. For example, it can play a role in speeding up the **identification of strategic policy areas**, such as “areas, in which action may be needed to address risks to consumers, to market integrity or to financial stability, or to address recurrent obstacles or gaps impeding the scaling-up of FinTech across the EU”²³¹. It can also help identify innovation trends and regulatory and supervisory issues that require a cross-sectoral position²³². Evidently, a strengthened role of the EFIF’s would need to be accompanied by enhanced transparency of its work to enable monitoring of its effectiveness and by adequate staffing and resources to enable it to carry out effectively its additional tasks.

Moreover, EFIF can also have a role in the context of **multi-disciplinary cooperation** on crosscutting innovation-related issues (e.g. use of AI, cyber security, e-ID, data protection), for example by enabling cooperation and knowledge sharing with the relevant EU entities, such as the European Data Protection Board (EDPB) and European Union Agency for Cybersecurity (ENISA)²³³. For example, the learnings from such multi-disciplinary cooperation could feed into the preparatory work aiming to enable EU-wide interoperable use of digital identities, which is envisaged by the EU Digital Finance Strategy²³⁴. The Strategy also proposes enlarging the entities, involved as observers in the EFIF’s work, including the Commission services responsible for competition and other national authorities beyond the financial sector²³⁵.

In addition, EIFI can provide a **consolidated EU platform for outreach** to the broader FinTech community. Currently, EU wide initiatives for outreach and knowledge sharing with the FinTech community are scattered across multiple forums (for example, the Commission EU FinTech Lab²³⁶, the EBA [FinTech Knowledge Hub](#)²³⁷, etc.). While, it does not necessarily have to replace more targeted outreach initiatives in individual sectors, it can certainly bring some more unified EU-dimension to

²³¹ Expert Group on Regulatory Obstacles to Financial Innovation 2019.

²³² [EBA response to the EC consultation on the digital finance strategy/action plan](#), June 2020.

²³³ See specific suggestions on this matter in the [EBA response to the EC consultation on the digital finance strategy/action plan](#), June 2020 and more broadly on multidisciplinary supervisory cooperation in the insurance sector in [EIOPA’s response to the European Commission’s Digital Finance Strategy consultation](#), June 2020.

²³⁴ See Section 4.1. of the EU Digital Finance strategy, p. 5.

²³⁵ See Section 4.1. of the EU Digital Finance strategy, p. 8.

²³⁶ Set up in June 2018 by the Commission, further to its [FinTech Action Plan](#), as a platform for technology solution providers to present certain innovations to national regulators and supervisors during, the COM, the ESAs and the ECB.

²³⁷ Hosted by the EBA, the Hub aims to enhance engagement between the competent authorities and FinTech firms (new and incumbents), technology providers and other relevant parties.

FinTech regulatory outreach. In this context, the EU Digital Finance Strategy envisages the establishment of a new EU digital finance platform, in cooperation with the EFIF, which is to serve as an ongoing online channel for interaction with the new digital finance ecosystem²³⁸. The expectation is that over time, it could grow into a broader platform for cooperation and a data space that could be used by industry or supervisory authorities to test innovation²³⁹. The EU Digital Finance Strategy considers maintaining the EU Fintech Lab operated by the Commission to “continue help upgrade supervisors’ technical skills”²⁴⁰. In such case, the transparency around its activities needs to be improved²⁴¹.

5.4. Cross-border and EU-wide experimental projects

Furthermore, the EFIF can play an important role in **addressing the potential risks of market fragmentation** and the difficulties in scaling and deployment of innovative products across the EU. In this context, the Expert Group on Regulatory Obstacles to Financial Innovation recommended that the Commission and the ESAs should further consider the establishment of an EU-level regulatory sandbox²⁴². While the idea of such an EU entity might seem far-fetched as of now, (not the least because of the lack or minimal direct supervisory powers of the ESAs), one can certainly imagine some arrangements for cross-border testing between nationally operated regulatory sandboxes. The possibility of a successful testing, which enables market access across the EU, would make EU Member States, collectively, a more attractive destination for FinTech innovation²⁴³. The EFIF terms of reference²⁴⁴ already provide for the possibility to organise, on a voluntary basis, **cross-border or joint testing** across existing regulatory sandboxes. The EU Digital Finance Strategy envisages the development of a “procedural framework for launching cross-border testing and other mechanisms facilitating firms’ interaction with supervisors from different Member States” by mid-2021²⁴⁵. In this context, a reference is made to a global cross-border testing initiative, which forms part of the [Global Financial Innovation Network \(GFIN\)](#)’s work. Although, at first, this initiative faced challenges to be effectively implemented (see more in Chapter 6), such challenges may be easier to overcome in the more harmonised EU regulatory framework.

Moreover, EFIF could consider the feasibility of **EU-wide experimental projects on strategic or targeted issues** with significant cross-border impact, involving all interested competent authorities, whether they have a national sandbox or not. An interesting proposal in this context, forms part of the Digital Finance package adopted by the Commission, aiming to introduce a common EU pilot regime for the experimentation of DLT market infrastructures²⁴⁶. While a detailed analysis of this proposal is beyond the scope of this study, it is worth highlighting a few elements of this proposal as an example of a proposed targeted experimentation framework at EU level. The proposed pilot regime aims to allow for experimentation with the application of DLT in financial services based on certain safeguards, and enabling the ESMA and competent authorities to gain experience on the opportunities and specific risks created by crypto-assets that qualify as financial instruments, and by their underlying technology.

²³⁸ See Section 4.1. of the EU Digital Finance strategy, p. 8.

²³⁹ Ibid.

²⁴⁰ Ibid.

²⁴¹ On the Commission website, there is no further information about the meetings of the Lab since its [first meeting](#).

²⁴² Expert Group on Regulatory Obstacles to Financial Innovation 2019.

²⁴³ Lim, Low 2019, Regulatory Sandboxes.

²⁴⁴ See EFIF Terms of Reference under: <https://esas-joint-committee.europa.eu/Publications/efif/EFIF%20Terms%20of%20Reference.pdf>.

²⁴⁵ See Section 4.1. of the EU Digital Finance strategy, p. 8.

²⁴⁶ Proposal for a Regulation of the European Parliament and of the Council on a pilot regime for market infrastructures based on distributed ledger technology, COM(2020)594, 2020/0267 (COD), available at: https://ec.europa.eu/finance/docs/law/200924-distributed-ledger-technology-proposal_en.pdf.

The envisaged experimentation framework sets out:

- a circumscribed scope for granting specific permissions to operate multilateral trading facilities and securities settlement systems using DLT;
- a range of limits and safeguards taking into account the need to ensure consumer and investor protection, market integrity, and financial stability, such as limits on types of financial instruments and volumes;
- a harmonised framework regarding the requirements, from which national competent authorities can grant exemptions and the essential requirements, which cannot be waived;
- alternative measures that need be taken “to meet the objectives pursued by the provisions from which an exemption is requested”, as well as additional requirements to address the novel forms of risks raised by the use of DLT.
- arrangements for cooperation between DLT operators, competent authorities and ESMA;
- the specific permissions would be valid across the Union for a time-limited period of 6 years;
- the temporary nature of the pilot framework is combined with a planned review thereof to analyse whether it should be extended, terminated or amended or made permanent (with or without) adjustments.

The proposal for a pilot project is now up for consideration by the co-legislators, together with the Proposal for Regulation on Markets in Crypto-assets²⁴⁷ and it remains to be seen, what the outcome will be.

²⁴⁷ Proposal for Regulation on Markets in Crypto-assets, COM(2020)593, available at https://ec.europa.eu/finance/docs/law/200924-crypto-assets-proposal_en.pdf.

6. GLOBAL REGULATORY COOPERATION

KEY FINDINGS

- The inherently borderless and functionally fluid nature of FinTech challenges the traditionally territorially bound exercise of supervisory and regulatory jurisdiction. Divergences in the regulatory frameworks could impede the development and diffusion of beneficial innovations in financial services and limit the effectiveness of efforts to promote financial stability.
- Enhanced cross-jurisdictional regulatory cooperation on FinTech matters can be beneficial to create an international FinTech enabling environment by adopting effective policy responses. It can also facilitate knowledge transfer and the sharing of international best practices to uphold standards, mitigate risks of regulatory arbitrage and avoid a ‘race-to-the-bottom’.
- Since the advent of FinTech, supervisory cooperation arrangements at international level have progressed into more a structured dimension. An example of a multilateral initiative is the Global Financial Innovation Network (GFIN), which among others includes a work stream on global cross-border testing. Its challenges and experience could provide useful insights for the possible EU cross-border testing work, as part of the EFIF tasks.
- Another relevant initiative carried out within the framework of international bodies, is the BIS Innovation Hub. It involves the major global central banks working together on selected FinTech issues, where the impact of a coordinated global response, or the absence thereof, could be most significant.
- Although in the current international environment the prospects for tangible and far-reaching outcomes from global regulatory cooperation may not be optimistic, the potential benefits from such cooperation in FinTech make continuous efforts worthwhile.
- The most promising channel for a more effective international cooperation appears to be at the level of the relevant supervisory authorities, in view of the common challenges they face in the supervision of FinTech.

The “inherently borderless and functionally fluid nature” of FinTech challenges the traditional way of territorially bound exercise of supervisory and regulatory jurisdiction²⁴⁸. The markets that the innovators wish to serve stretch well beyond the limits of national regulatory regimes for FinTech innovation²⁴⁹. Divergences in the “regulatory frameworks could impede the development and diffusion of beneficial innovation in financial services, and limit the effectiveness of efforts to promote financial stability”²⁵⁰. Therefore, international organisations and standard setting bodies, as well as scholars consistently emphasise the importance of enhanced cross-jurisdictional regulatory cooperation on FinTech matters²⁵¹.

Indeed, greater cross-jurisdictional cooperation can be beneficial to create an international FinTech-enabling environment by adopting effective policy responses²⁵². This could foster opportunities, while

²⁴⁸ Omarova 2020, Technology v. Technocracy.

²⁴⁹ Allen 2020, Sandbox Boundaries.

²⁵⁰ FSB Report “Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities’ Attention, June 2017.

²⁵¹ Ibid. IMF/WB Bali Fintech Agenda, October 2018. Taylor, Wilson, Holtinen, Morozova 2019, Institutional arrangements. Omarova 2020, Technology v. Technocracy.

²⁵² IMF/WB Bali Fintech Agenda, October 2018.

limiting the risks that could arise from divergences in regulatory frameworks and potential inconsistencies in the cross-border application of laws and regulations²⁵³. Given the “commonalities and global dimension of many FinTech activities”, cooperation can help raise awareness about emerging issues, as well as facilitate knowledge transfer and the sharing of international best practices²⁵⁴. It can also play a role to uphold standards, mitigate risks of regulatory arbitrage, and a ‘race-to-the-bottom’²⁵⁵.

With the advent of FinTech, a number of supervisory authorities signed bespoke FinTech related bilateral co-operation agreements with authorities in other countries (e.g. Australia, France, Indonesia, Singapore²⁵⁶ and the UK).²⁵⁷ As the FinTech sector grows and develops, such agreements provided a basis for the emergence of more structured forums for international supervisory cooperation specifically targeting FinTech. A leading example is the [Global Financial Innovation Network \(GFIN\)](#), which was launched in January 2019 by an international group of financial regulators upon the initiative of the UK FCA²⁵⁸. Its purpose is to facilitate a new practical method for collaborative knowledge sharing between supervisors²⁵⁹. By now, the network includes 50 financial supervisors as members and some international organisations as observers²⁶⁰. However, only a handful of EU national competent authorities participate in the network and none of the EU financial regulatory bodies is listed as an observer.

One specific work stream of GFIN has been the development of an environment for **cross-border testing of innovative products** (previously known as the “global sandbox” concept), in which 17 regulators from different jurisdictions take part. The initiative was launched based on industry interest for creating an environment, which would allow firms to “simultaneously trial and scale new technologies in multiple jurisdictions, gaining real-time insight into how a product or service might operate in the market”²⁶¹. The pilot project carried out in spring 2019 did not bear real practical outcomes - none out of the 8 selected entities managed to provide a testing plan that would satisfy the testing conditions of all the jurisdictions concerned (i.e. readiness to test or formal partnership with a financial institution)²⁶². As GFIN is implementing the learning experiences thereof into the arrangements for the second run of the cross-border testing project, it may be useful for EFIF to monitor the developments in this area in the context of coordinating possible cross-border testing mechanisms between the Member States.

Furthermore, **international bodies** (such as the FSB and the GPFII) **and international standard setting organisations** (such as the BCBS, IAIS, IOSCO and CPMI) also have an important role to play in providing “avenues for authorities to get together to share experiences and consider implications for

²⁵³ IMF/WB Bali Fintech Agenda, October 2018.

²⁵⁴ IMF/WB Bali Fintech Agenda, October 2018. Taylor, Wilson, Holttinen, Morozova 2019, Institutional arrangements.

²⁵⁵ Taylor, Wilson, Holttinen, Morozova 2019, Institutional arrangements. Sceptical about this Allen, 2020, Sandbox Boundaries.

²⁵⁶ For example, to date, Singapore has signed 33 Fintech MoUs see more under: <https://www.mas.gov.sg/development/fintech/fintech-cooperation-agreements>.

²⁵⁷ FSB Report “Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities’ Attention, June 2017.

²⁵⁸ For more details, see Allen, 2020, Sandbox Boundaries.

²⁵⁹ See GFIN Terms of Reference for Membership and Governance of GFIN

<https://static1.squarespace.com/static/5db7cdf53d173c0e010e8f68/t/5db92a0d519a7150a9072bc6/1572416023693/qfin-terms-of-reference.pdf>.

²⁶⁰ See the list of current members under <https://www.theqfin.com/members#MembersMain>.

²⁶¹ GFIN Cross-border testing work stream, Report “Cross-border testing: Lessons Learned”, January 2020, available at: <https://www.theqfin.com/s/GFIN-CBT-Pilot-lessons-Learned-publication-09012020-FINAL.pdf>.

²⁶² Ibid.

financial markets”²⁶³. Many of them have been operating FinTech-dedicated teams or networks²⁶⁴. Among those, the most relevant example in the context of this study would be the [BIS Innovation Hub](#) scheme, established by 60 central banks. This initiative brings potential for developing a global coordinated response to certain challenges presented by the technological transformation of the financial sector. It pools resources and knowledge from a major part of the central banks globally, which provides a basis for an enhanced engagement and a global dissemination of a coordinated policy response. Moreover, its main workstreams focus on FinTech issues, where the impact of a coordinated global response, or the absence thereof, could be most significant - for example, the tokenisation of assets, including central bank digital currencies (CBDCs) and stablecoins, digital IDs, the digitalisation of trade finance, the use of ‘Big Data’ and machine learning in financial supervision.

Given the trend of withdrawal from multilateralism and the broader international tensions in recent years, it is not surprising that some scholars are sceptical about how tangible and far-reaching the outcome of global regulatory cooperation could be²⁶⁵. Although regulatory cooperation in financial services has been somewhat shielded from the broader geopolitical strains, the cooperation’s intensity has been muted, ever since the main elements of the post-global financial crisis reforms were completed. Still, the potential benefits of such cooperation on FinTech make continuous efforts worthwhile. Under these circumstances, perhaps the most promising channel for a more effective international cooperation is at the level of the relevant supervisory authorities across the globe, in view of the common challenges they are facing in the supervision of FinTech.

²⁶³ FSB Report “Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities’ Attention, June 2017.

²⁶⁴ Ibid.

²⁶⁵ Allen 2020, Sandbox Boundaries.

7. CONCLUSIONS

The unprecedented speed and disruptive potential of emerging technologies in the financial sector are a challenge to the traditional regulatory responses to new developments. FinTech has brought additional complexity to an already complex financial landscape. The use of technologies in finance presents new risks and alters traditional risks inherent to the financial sector. FinTech also adds complexity in terms of the wide variety of entities involved: already regulated entities (the incumbents), new start-up entities (financial and non-financial), and large technology providers.

A regulatory response to innovation in financial services requires a balanced approach, which weighs up the potential benefits of innovation against the risks for consumers, investors and the stability of the financial system as a whole. In this complex environment, the main challenge for regulators is to develop new methods of identifying, monitoring and addressing the changing dynamics in the financial system. Assessing the risks brought by FinTech requires a deep understanding of the processes and of the application of the technologies used to deliver the innovative services.

To respond to the technological innovation in finance, regulators have resorted to innovative regulatory approaches, in particular by setting up innovation hubs and regulatory sandboxes, collectively referred to as 'innovation facilitators'. Such initiatives aim to enhance supervisors' engagement with FinTech entities to support firms, which are new to the complex world of financial regulation, and to provide guidance on the applicability of the existing regulation to new services, products and business models. This can help lower the high barriers to entry in the sector and reduce legal uncertainty, thereby spurring competition, and encouraging potentially beneficial innovation and broader consumer choice. For supervisors, innovation facilitators bring an opportunity to enhance their understanding of the use of innovative technologies in finance. This can help supervisors identify emerging risks and opportunities, adjust their monitoring approach and contribute to designing an appropriate policy response to FinTech. However, innovation facilitators are one among many elements of the regulatory response to financial innovation and cannot replace broader initiatives to develop a comprehensive regulatory framework for FinTech.

As innovative disruption in the financial sector bears potential for both benefits and risks, so do the innovative regulatory approaches taken by regulators. The increasing level of adoption of innovation facilitators and the proliferation of different models in recent years have prompted a number of concerns, such as the potential for regulatory arbitrage and 'race-to the bottom' style competition among jurisdictions, distortion of the level playing field, and more broadly, consumer protection and financial stability. Within the Single Market, there are concerns that the operation of innovation facilitators at national level could lead to the development of divergent supervisory practices and market fragmentation impeding the scaling-up of financial innovations across the EU.

Academic research argues that the set up and operation of innovation facilitators should be based on a strategic framework for governance and accountability aimed at preserving objectivity and rationality in regulatory decision-making and policy formulation. In particular in the case of regulatory sandboxes, such a framework should minimise any rollback of prudential and consumer protection regulation and maximise the ability of financial regulators to learn about new technologies. Moreover, a proper framework for governance and accountability of the innovation facilitator is vital to enable the regulator to evaluate internally the performance and achievements of the innovation facilitator as well as for the purposes of accountability.

This study examines the most relevant elements of the design and operational parameters of innovation facilitators in the context of their potential risks and benefits: objectives, scope, access conditions, nature of regulatory relief and testing parameters (if applicable), as well as the means for knowledge sharing. Certain choices made in relation to the design and operational parameters of

innovation facilitators may emphasise certain risks and would require that corresponding measures be included as part of the design to counter that effect.

- Clear and transparent **objectives** need to be combined with sufficient resources and tools to enable effective operation as well as with mechanisms for evaluation and review of the outcomes.
- Sectoral restrictions of the innovation facilitator's **scope** further accentuate existing regulatory borders and could hamper cross-sectoral innovations. Where joint operation by all sectoral regulators is not possible, enhanced mechanisms for supervisory knowledge sharing across the different financial sectors are necessary.
- 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. Where **eligibility criteria** are part of the design for access to an innovation facilitator, they should be clearly defined and transparent and robust arrangements for vetting applications are essential. Moreover, adequate knowledge sharing mechanisms to the broader FinTech community are necessary to bridge the knowledge gaps emerging between entities within the facilitators and those outside, to minimise negative impact on level playing field. Better communication of 'lessons learned' to the wider market would also facilitate an improved understanding of supervisory expectations and can help support the promotion of a compliance culture throughout the FinTech ecosystem.
- The main concern that the operation of regulatory sandboxes could compromise regulatory standards and safeguards is related to the **regulatory relief** granted to sandbox entities. The regulatory sandboxes currently operating in the EU apply customized sandbox regimes: i.e. the application of the existing rules is adapted to the individual propositions admitted to testing in the sandbox. Compared to other sandboxing models, for supervisors their main benefit relates to the direct experiential learning acquired through the close engagement in the sandbox.
- Generally, within the EU, the room of manoeuvre to grant regulatory relief, which is available to the supervisor, is rather limited and mainly involves the use of proportionality levers. Still, customised sandbox regimes bear a certain risk of inconsistent, divergent practices applied to peer entities and across Member States. Ensuring consistency in the application of the customisation tools as well as in setting up the testing parameters and equal treatment in similar situations is key to minimise the risks related to the operation of a regulatory sandbox, in particular with regard to level playing field and broadly for supervisory convergence. Therefore, robust and adequate mechanisms for **knowledge transfer** within the regulator and amongst the different teams/units involved is important for the coherent and consistent application of the framework.
- The novel complexities generated by FinTech often impact on a broader area of public policies, which lie outside the regulatory perimeter of the authority operating the innovation facilitator. Therefore, coordination and knowledge sharing across multiple arms of government and regulatory agencies (financial and nonfinancial), is needed. Supervisory cooperation and knowledge sharing with other relevant authorities are necessary to address emerging crosscutting issues in other financial sectors or other related policy areas (e.g. competition, data protection).
- Regular reviews and evaluation of the operation of the facilitator's framework are important in order to take into account the gathered experience and new developments, and if necessary, to make adjustments.
- To date, no large-scale evaluation has been carried out to assess the outcome and impact of the operation of innovation facilitators in the Single Market. Granular and comparable aggregated data

about key elements that are necessary for such an analysis is currently not available. This is mainly due to the short life span of the innovation facilitators and the divergent modalities for publications of statistics (if any).

- When innovation facilitators become more established, it would be opportune to carry out a proper **assessment of the outcomes and impact of the operation** of innovation facilitators in the EU. In the meantime, arrangements need to be made to ensure that granular and comparable information is available about certain key indicators that are necessary for such an assessment. Relevant in this context appear to be the number, size and types of entities, using the innovation facilitators, as well as the most common innovative services, products or business models. In the context of regulatory sandboxes, it is also relevant to have data about the granted regulatory relief, the applied safeguards, including the reasoning behind. The EFIF appears to be the EU body best placed to collect such data. The collection of such information would allow for an appropriate assessment of the impact of the operation of innovation facilitators, support the ESAs monitoring and supervisory convergence work, and could contribute to the formulation of an adequate EU policy response to FinTech.
- While a harmonised EU framework for the operation of innovation facilitators can have advantages, it also presents challenges. There will be some merit for the ESAs to build on their recommendations for best practices for the design and operation of innovation facilitators, as set out in the 2019 Joint report and further develop them. Some **common principles and standards** about key elements of the design and operation parameters of innovation facilitators would be valuable. In particular, common standards regarding the statistics and key indicators that are to be published and shared would enable the collection of comparable and granular data. Moreover, common principles for adequate knowledge sharing of the learnings from innovation facilitators beyond the entities engaged with the facilitator and between relevant authorities are worth considering.
- The EFIF brings further potential to the efforts to ensure enhanced supervisory cooperation and convergence. Its role as a platform for knowledge sharing could be strengthened, in particular in order to contribute to the formulation of EU wide policy approach on FinTech. EFIF can play a role in speeding up the identification of strategic policy areas (i.e. to address risks to consumers, to market integrity or to financial stability), in gathering knowledge about innovation trends and in identifying areas that require cross-sectoral consistency. Building on existing initiatives, EIFI can provide a consolidated EU platform for outreach to the broader FinTech community. EFIF can also play a role in the context of multi-disciplinary cooperation on innovation-related issues, and on topics cutting across a broad range of policy areas.
- Although the establishment of an EU level regulatory sandbox may seem far-fetched as of now, the possibility of a successful testing, which enables market access across the EU, would make EU Member States, collectively, a more attractive destination for FinTech innovation. EFIF should leverage the opportunity to coordinate cross border testing between nationally operated regulatory sandboxes and could consider the feasibility of EU-wide experimental projects on specific targeted issues, for example, where the need for cross-border consistency is most relevant.
- On a global scale, enhanced cross-jurisdictional regulatory cooperation on FinTech matters can be beneficial to create an international FinTech enabling environment and to mitigate risks of regulatory arbitrage. Engagement with, and up-close monitoring of, the work carried out via global supervisory initiatives (such as the GIFIN and BIS Innovation Hub), could provide useful insights for the policy formation work at EU level.

REFERENCES

Literature

- Allen, H.J., *Sandbox Boundaries*, Vanderbilt Journal of Entertainment & Technology Law 22, Vol. 2 (2020): pp. 299-322. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3409847.
- Allen, H.J., *Regulatory Sandboxes*, June 2019, George Washington Law Review Vol. 87, pp. 579-645. Available at: <https://www.gwlr.org/wp-content/uploads/2019/06/87-Geo.-Wash.-L.-Rev.-579.pdf>.
- Ahern, D. M., *Regulators Nurturing FinTech Innovation: Global Evolution of the Regulatory Sandbox as Opportunity Based Regulation*, March 2020. European Banking Institute Working Paper Series – no. 60. Available at SSRN: <https://ssrn.com/abstract=3552015>.
- Bromberg, L., Godwin, A., Ramsay, I., *Fintech Sandboxes: Achieving a Balance Between Regulation and Innovation*, December 2017, Journal of Banking and Finance Law and Practice Vol.28, No. 4, 2017, pp. 314-336. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3090844.
- Brummer, Ch., Yadav, Y., *Fintech and the Innovation Trilemma*, October 2017, 107 Georgetown Law Journal 235, 2019, Vanderbilt Law Research Paper No. 17-46, Georgetown Law and Economics Research Paper No. 11-23. Available at SSRN: <https://ssrn.com/abstract=3054770>.
- Buckley, R., Arner, D., Veidt, R., Zetsche, D., *Building FinTech Ecosystems: Regulatory Sandboxes, Innovation Hubs and Beyond*, November 2019. University of Luxembourg Law Working Paper No. 2019-010, European Banking Institute Working Paper Series 2019 No. 53, UNSW Law Research Paper No. 19-72, University of Hong Kong Faculty of Law Research Paper No. 2019/100, Washington University Journal of Law and Policy, Vol. 61, 2020. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3455872.
- de Koker, L., Morris, N., Jaffer, S., *Regulating Financial Services in an Era of Technological Disruption*, Law in Context, February 2020, Vol. 36, No 2, pp. 90-112. Available at: <https://journals.latrobe.edu.au/index.php/law-in-context/article/view/98>.
- Ehrentraud, J., Garcia Ocampo, D., Garzoni, L., Piccolo, M., *Policy responses to FinTech: a cross-country overview*, Bank for International Settlements, Financial Stability Institute, FSI Insights on policy implementation No 23, January 2020. Available at: <https://www.bis.org/fsi/publ/insights23.pdf>.
- Chiu, I. H-Y., *A Rational Regulatory Strategy for Governing Financial Innovation*, December 2017, European Journal of Risk Regulation, Vol. 8, pp. 743-765. Available at: <https://doi.org/10.1017/err.2017.50>.
- Jenik, I., Lauer, K., *Regulatory Sandboxes and Financial Inclusion*, CGAP Working Paper, October 2017. Available at: <https://www.cgap.org/sites/default/files/Working-Paper-Regulatory-Sandboxes-Oct-2017.pdf>.
- Lim, B., Low, Ch., *Regulatory Sandboxes*, in: Madir, J. (ed.), *Fintech: Law and Regulation*, September 2019, Elgar Financial Law and Practice series. Available at: https://www.elgaronline.com/view/edcoll/9781788979016/27_chapter14.xhtml.
- Omarova, S.T., *Technology v. Technocracy: FinTech as a Regulatory Challenge*, March 2020, Journal of Financial Regulation, Vol. 6/1, pp. 75–124. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3545468.

- Ringe, W.-G., Ruof, Ch., *A Regulatory Sandbox for RoboAdvice*, May 2018, EBI Working Paper No 26. Available at: <https://ssrn.com/abstract=3188828>.
- Taylor, Ch., Wilson, Ch., Holttinen, E., Morozova, A., *Institutional arrangements for Fintech regulation and supervision*, IMF Fintech Notes 19/02, December 2019; Available at: <https://www.imf.org/~media/Files/Publications/FTN063/2019/English/FTNEA2019002.ashx>.
- Witz, D., *Sandbox Games for RegTech*, in: Barberis, J., Douglas A., Buckley, R. (eds.), *The REGTECH Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries in Regulation*, John Wiley & Sons, Incorporated, 2019. Available at: <http://ebookcentral.proquest.com/lib/euoparl/detail.action?docID=5847783>.
- Zetzsche, D., Buckley, R., Arner, D. and Barberis, J., *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, August 2017, *Fordham Journal of Corporate and Financial Law*, Vol. 23, pp. 31-103. Available at: <https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1450&context=jcfl>.

Other documents

- Basel Committee on Banking Supervision, *Sound practices: Implications of FinTech developments for banks and bank supervisors*, February 2018. Available at: <https://www.bis.org/bcbs/publ/d431.pdf>.
- European Commission, *FinTech Action Plan: For a More Competitive and Innovative European Financial Sector*, COM(2018/109). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0109>.
- European Commission, *Digital Finance Strategy for the EU*, COM(2020)591. Available at: https://ec.europa.eu/finance/docs/law/200924-digital-finance-strategy_en.pdf.
- ESAs Joint Committee report, *FinTech: Regulatory sandboxes and innovation hubs*, January 2019. Available at: <https://esas-joint-committee.europa.eu/Publications/Reports/JC%202018%2074%20Joint%20Report%20on%20Regulatory%20Sandboxes%20and%20Innovation%20Hubs.pdf>.
- Expert Group on Regulatory Obstacles to Financial Innovation (2019), *30 Recommendations on regulations, innovation and finance*, Final Report to the European Commission, December 2019. Available at: https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/191113-report-expert-group-regulatory-obstacles-financial-innovation_en.pdf.
- *Final Report of the Committee of Wise Men on the Regulation of the European Securities Markets*, February 2001, Brussels. Available at: https://www.esma.europa.eu/sites/default/files/library/2015/11/lamfalussy_report.pdf.
- Financial Stability Board (FSB), *Monitoring Fintech*. Available at: <https://www.fsb.org/work-of-the-fsb/policy-development/additional-policy-areas/monitoring-of-fintech/>.
- FSB Report, *Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities' Attention*, June 2017. Available at: <https://www.fsb.org/wp-content/uploads/R270617.pdf>.
- UNSGSA FinTech Working Group and CCAF. (2019). *Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech*. Office of the UNSGSA and CCAF: New York, NY and Cambridge, UK. Available at:

https://www.unsgsa.org/files/2915/5016/4448/Early_Lessons_on_Regulatory_Innovations_to_Enable_Inclusive_FinTech.pdf.

ANNEX 1: LIST OF REGULATORY SANDBOXES AND INNOVATION HUBS IN THE EU AND EFTA COUNTRIES

Table 2: List of innovation hubs

#	Country	Innovation Hub	Banking	Insurance	Securities	Website
	EU					
1.	AT	√ CP	√	√	√	https://www.fma.gv.at/querschnittsthemen/fintechnavigator/
2.	BE	√ CP	√	√	√	https://www.fsma.be/en/fintech-contact-point
3.	BG	√		√	√	https://www.fsc.bg/bg/finansovi-inovacii/innovation-hub/
4.	CY	√			√	https://www.cysec.gov.cy/en-GB/cysec/innovation-hub/
5.	CZ	√ CP	√	√	√	https://www.cnb.cz/en/supervision-financial-market/financial-innovation
6.	DE	√ CP	√	√	√	https://www.bafin.de/DE/Aufsicht/FinTech/Kontaktformular/fintechKontakt_node.html
7.	DK	√	√	√	√	https://www.dfsa.dk/Supervision/Fintech/Formaal
8.	EE	√	√	√	√	https://www.fi.ee/en/finantsinspeksioon/financial-innovation
9.	EL	√	√	√		https://www.bankofgreece.gr/en/main-tasks/supervision/fintech-innovation-hub
					√	http://www.hcmc.gr/en_US/web/portal/epikoinonia-entypa
10.	ES	√			√	https://www.cnmv.es/Portal/Fintech/Innovacion.aspx?lang=en
11.	FI	√	√	√	√	https://www.finanssivalvonta.fi/en/fintech-financial-sector-innovations/innovation-help-desk-advises-on-licence-issues/
12.	FR	√	√	√		https://acpr.banque-france.fr/en/authorisation/fintech-and-innovation/fintech-innovation-hub
					√	https://www.amf-france.org/en/professionals/fintech/my-fintech-space
13.	HR	√		√	√	https://www.hanfa.hr/fintech1/
14.	HU	√	√	√	√	https://www.mnb.hu/en/innovation-hub
15.	IE	√	√	√	√	https://www.centralbank.ie/regulation/innovation-hub
16.	IT	√	√			https://www.bancaditalia.it/compiti/sispaga-mercato/fintech/index.html?com.dotmarketing.htmlpage.language=1
17.	LT	√	√	√	√	https://www.lb.lt/en/fintech-and-innovation

#	Country	Innovation Hub	Banking	Insurance	Securities	Website
18.	LU	√	√		√	https://www.cssf.lu/en/financial-innovation-fintech/#innovation-hub
19.	LV	√	√	√	√	https://www.fktk.lv/en/licensing/innovation-and-fintech/expert-advice/
20.	MT	√	√	√	√	https://www.mfsa.mt/fintech/regulatory-sandbox/
21.	NL	√	√	√	√	https://www.dnb.nl/en/supervision/innovationhub/index.jsp#
22.	PL	√	√	√	√	
23.	PT	√	√	√	√	https://www.portugalfinlab.org/
		CP			√	https://www.bportugal.pt/en/page/fintech
24.	RO	√			√	https://asfromania.ro/en/fintech-hub
				√		https://insurtech-hub.asfromania.ro/despre-insurtech-hub/
25.	SE	√	√	√	√	https://www.fi.se/en/fis-innovation-center/
26.	SK	√	√	√	√	https://www.nbs.sk/en/financial-market-supervision1/fintech
27.	SL	√	√			https://www.bsi.si/en/about-us/banka-slovenijes-fintech-innovation-hub
	EFTA					
28.	IS	√	√	√	√	https://www.fme.is/thjonustuvefur/fintech-thjonustubord
29.	LI	√ CP	√	√	√	https://www.fma-li.li/de/fintech-und-tvtg/fintech-in-liechtenstein.html
30.	NO	√	√	√	√	https://www.finanstilsynet.no/tema/fintech/veiledning-til-fintech-virksomheter/
31.	CH	√	√	√	√	https://www.finma.ch/en/authorisation/fintech/
32.	UK		√	√	√	https://www.fca.org.uk/firms/innovate-innovation-hub

Source: Author's own elaboration based on the 2019 ESAs Joint report and publicly available information.

Note: **CP** refers to dedicated contact point models.

Table 3: List of regulatory sandboxes - operational and planned

#	Country	Sandbox	Banking	Insurance	Securities	Website
	EU					
1.	AT	Planned	√	√	√	https://www.parlament.gv.at/PAKT/VHG/XXVII/I/I_00193/index.shtml#tab-Uebersicht
2.	BE	N				
3.	BG	Announced		√	√	https://www.minfin.bg/en/news/10967
4.	CY	N				
5.	CZ	N				
6.	DE	N				
7.	DK	√	√	√	√	https://www.dfsa.dk/Supervision/Fintech/FT-lab
8.	EE	Planned	√	√	√	https://www.ebrd.com/news/2019/moving-the-regulatory-debate-forward-ebrd-and-estonia-are-working-on-their-first-sandbox.html
9.	EL	Planned	√	√	√	https://www.bankofgreece.gr/en/main-tasks/supervision/regulatory-sandbox
10.	ES	Planned			√	https://www.mineco.gob.es/stfls/mineco/prensa/ficheros/noticias/2018/200218_np_sandbox.pdf
11.	FI	N				
12.	FR	N				
13.	HR	N				
14.	HU	√	√	√	√	https://www.mnb.hu/en/innovation-hub/regulatory-sandbox
15.	IE	N				
16.	IT	Planned	√	√	√	http://www.dt.mef.gov.it/it/dipartimento/consultazioni_pubbliche/consultazione_regolamento.html
17.	LT	√	√	√	√	https://www.lb.lt/en/regulatory-sandbox
18.	LU	N				
19.	LV	√	√	√	√	https://www.fktk.lv/en/licensing/innovation-and-fintech/innovation-sandbox/
20.	MT	√	√	√	√	https://www.mfsa.mt/fintech/regulatory-sandbox/
21.	NL	√	√	√	√	https://www.dnb.nl/en/supervision/innovationhub/maatwerk-voor-innovatie-regulatory-sandbox/index.jsp
22.	PL	Planned	√	√	√	https://www.knf.gov.pl/en/MARKET/Fintech/Regulatory_Sandbox

#	Country	Sandbox	Banking	Insurance	Securities	Website
23.	PT	Planned	√	√	√	https://dre.pt/application/conteudo/132133788
24.	RO	N				
25.	SE	N				
26.	SK	Considering				
27.	SL	N				
	EFTA					
28.	IS	N				
29.	LI	N				
30.	NO	√	√	√	√	https://www.finanstilsynet.no/tema/fintech/finanstilsynets-regulatoriske-sandkasse/
31.	CH	√	√		√	https://www.finma.ch/en/news/2019/03/20190315-mm-fintech/
32.	UK	√	√	√	√	https://www.fca.org.uk/firms/innovation/regulatory-sandbox

Source: Author's own elaboration based on the 2019 ESAs Joint report and publicly available information.

ANNEX 2: 2019 ESAS JOINT REPORT - SUMMARY OF THE ESTABLISHED PRINCIPLES FOR THE OPERATION OF INNOVATION FACILITATORS

The ESAs Joint report of 2019 identified a set of principles for the establishment and operation of innovation facilitators, a summary of which is listed below.

General principles for all innovation facilitators

- Rigorous analysis of the appropriate expertise, powers, processes and structure prior to the establishment of the innovation facilitator.
- Ensuring appropriate visibility and communication strategy to relevant market participants.
- Clearly identified point of contact.
- Clearly defined and published objectives, functions and tools, eligibility criteria and scope.
- Clear communication about the nature of the guidance provided by the facilitators, in particular its non-binding nature.
- Appropriate internal records about the operation of the innovation facilitator.
- Dissemination of the learnings from the innovation facilitator within the competent authority and to the market (i.e. in the form of FAQs, learning platforms, industry round tables).
- Regular review of the functioning and resourcing of the innovation facilitator to ensure it remains fit for purpose.

Principles specific to innovation hubs

- Clearly defined key information, which needs to be submitted by the companies seeking guidance from the innovation hub.
- Reasonable response time.
- Where the questions do not fall in the remit of the competent authority operating the innovation hub, referral to be made to the relevant competent authority.

Principles specific to regulatory sandboxes

- Clearly defined and published eligibility criteria for entry.
- Clearly defined and published key information which needs to be submitted by the companies in support for the application to participate in the regulatory sandbox; receipt of applications to be acknowledged and decision to accept or not to the regulatory sandbox communicated within a reasonable timeframe.
- Testing criteria may be determined on a case-by-case basis to mitigate potential risks.
- Requirement by the sandbox entity to disclose to consumers the fact that the services are being tested in a regulatory sandbox and the implications for the consumer thereof (i.e. risk mitigating measures applied or testing and exit).
- Requirement for sandbox firms to develop plans for controlled exit from the regulatory sandbox, including appropriate level of consumer protection, in particular in case of discontinuation of the service.
- No disapplication of regulatory requirements under EU law should be allowed; levers of proportionality may be applied in the same way as to firms outside the sandbox.

The unprecedented leap and the disruption potential of the emerging technological developments in finance have challenged the existing institutional and regulatory arrangements in the financial sector. Jurisdictions across globe have adopted various initiatives to keep abreast of the rapid technological developments and to encourage the development of their FinTech ecosystems. This study examines the setting up of regulatory sandboxes and innovation hubs as part of the overall strategies pursued by jurisdictions in response to the FinTech developments.

This document was prepared by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the Committee on Economic and Monetary Affairs (ECON).

PE 652.752
IP/A/ECON/2019-35

Print ISBN 978-92-846-7138-0 | doi:10.2861/412588 | QA-04-20-531-EN-C
PDF ISBN 978-92-846-7139-7 | doi:10.2861/14538 | QA-04-20-531-EN-N