Ex Ante "Regulation"? The Legal Nature of the Regulatory Sandboxes or How to "Regulate" Before Regulation Even Exists

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Abstract

Prior to the Global Financial Crisis, financial innovation was driven by so many factors, but the Global Financial Crisis changed the regulatory pendulum, which has swung to deeper regulation and also changed the way we think about financial innovation. The financial innovation – with its bright and destructive outcomes – is an integral part of the competition in the financial market. But the race is such that the regulatory authorities are in a rather disadvantaged position if we just think of the old fashioned regulatory paradigm. In this context, the question is what – new – legal institutions – such as the regulatory sandbox – could provide financial stability and a proper legal regulation to unregulated financial products and services.

Keywords

financial regulation and supervision; financial stability; FinTech; regulatory sandbox

1 Introduction

Prior to the Global Financial Crisis (hereinafter: GFC), financial innovation was driven by so many factors, such as rapid economic growth, a growing reliance on financial intermediation, the improving well-being of the population, trade and capital account liberalisation, changes in international monetary regimes, financial deregulation in most

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countries, globalisation, and of course technical innovation. The common understanding of the impacts of the financial innovations was very positive, *resulting in a deregulatory approach to financial regulation*. The GFC changed the regulatory pendulum, which has turned to a more detailed and systemic risk-based – macroprudential (Mérő, 2017) – regulation, and also changed the way we think about – the possible risks of – financial innovation.

Financial innovation – with its bright[2] and destructive outcomes[3] – and financial technology is an integral part of the competition in the financial market. But the need to balance between preserving financial stability, protecting consumers and promoting innovation is such that the regulatory authorities are in a rather disadvantaged position if we just think of the traditional regulatory paradigm. In this context, the question is how to "regulate" the financial innovation, in preserving financial stability, protecting consumers and promoting innovation, before the appropriate legal regulation even exists. The new "buzzword" is the regulatory sandbox, which is now a wide spreading framework set up by the financial sector regulators (hereinafter: regulatory authority or competent authority) across Europe and the world.

In this study, we assess the new regulatory tool's – *the regulatory sandbox* – legal basics. To achieve this aim, the study is divided into two main chapters. The first chapter, *FinTech* defines the term of financial technology, sets up its classification, summarises its benefits and treats, and overlooks the types of regulatory approaches to FinTech. The second chapter, *Regulatory Sandbox* includes the definition of regulatory sandbox and analyses the introduced or proposed regulatory sandbox's legal attributes within the context of European Union members.

2 FinTech

2.1 Term and classification

Financial technology (hereinafter: FinTech) does not have a commonly accepted academic definition (Rácz, 2018), but in the literature, it generally or broadly means the exploitation of *innovative technology* in the framework of financial services, especially internet- and smartphone-enabled financial innovations (Nicoletti, 2017). FinTech refers to – also broadly speaking – technology-enabled financial solutions, which is often seen today as the new marriage of financial services and information technology (Arner et

2 See for example the ATMs, credit cards, e-bank, mobile banking which are based on digitalisation in the banking sector.

3 See for example the financial derivatives (asset-backed securities, mortgage-backed securities, collateralised debt obligations) which had a major role in the outbreak of the GFC.

al., 2015).[4] Or just shortly, FinTech is a new industry that applies technology to improve financial – front, middle and back-office (Eszes et al., 2018) – activities (Schueffel, 2016).

Expressis verbis FinTech also does not have a legal definition, but, we can find legal definitions of *"innovative financial product or service"*. According to the Arizona *House Bill 2434* (legiscan.com, 2018) "innovative financial product or service" means a financial product or service that includes an innovation. "Innovation" means the use or incorporation of new or emerging technology or the reimagination of uses for existing technology to address a problem, provide a benefit or otherwise offer a product, service, business model or delivery mechanism that is not known by the attorney general to have a comparable widespread offering in this state. New York *Assembly Bill 9899* (legiscan.com, 2017) – which is not a past act, but an introduced one – uses the term of "financial technology products or services" but with the same meaning as the aforementioned bill.

To define the term of FinTech, the aforementioned legal definitions are useful. In my opinion – and in the context of this paper – *financial technology means the use or incorporation of new or emerging technology or the reimagination of uses for existing technology to address a market failure, provide a benefit or otherwise offer a financial product, service, business model or delivery mechanism that is not known by the financial regulation.*

After we approximately define the term of FinTech, it is necessary to take a survey of the *current products and services* which fill the criteria of the previously defined term. There cannot be an exhaustive list of the products and services that do and do not include the scope of FinTech, but the literature has identified different innovations as surely fitting under the FinTech umbrella: for example, crowdfunding, P2P (peer-to-peer) lending, robo-advisory services, artificial intelligence and machine learning, new digital advisory and trading systems, internet and mobile communications payments, infrastructure for derivatives and securities trading and settlement, innovative digital currencies, cryptocurrencies and the blockchain, finance and investment platforms, big data analytics.[5]

While the broad term FinTech can be useful to describe a wide range of innovations, *to draw the legal conclusions,* we have to further specify the individual innovations. In view of the above, it is useful to classify FinTech developments by the main existing economic functions they provide. According to the Financial Stability Board, *FinTech activities can be organised into five categories of financial services:*

a) *payments, clearing, and settlement* (e.g. Alipay, PayPal, blockchain and cryptocurrencies, infrastructure for derivatives and securities trading and settlement)
b) *deposits, lending and capital raising* (e.g. crowdfunding; P2P lending)
c) *insurance* (e.g. mobile and web-based financial services)
d) *investment management* (e.g. e-trading, robo-advice, digital ID verification), and
e) *market support* (e.g. robo advice, smart contracts, big data analysis)

[4] Nonetheless, innovation in financial services is not a new "revolution", but an evolution. After the GFC the third stage of FinTech, FinTech 3.0 has begun. See for details Arner et al., 2017.

[5] See Arner et al., 2015 and Brummer and Gorfine, 2014.

It is important to highlight, that there has been the rapid growth of global investment[6] in FinTech, and also the rapid growth of innovations touching more of or all of these categories of financial services.[7] Because of the high importance of financial innovations to the competition in the financial market and to the stability of the whole financial market, it is necessary to sum up in a nutshell its benefits and threats.

2.2 Benefits and threats

In theory, technology-based innovation in financial services yields benefits for economic growth and financial stability through many transmission channels, including by reducing some of the failures of the financial market (e.g. information asymmetries, incomplete markets, negative externalities). On the other hand, the potential for FinTech to undermine financial stability throughout micro- and macro-financial risks is also quite impressive. So following the conceptual basics, it is necessary to summarise the *benefits and the threats of the FinTech* innovations.

The FinTech innovations have the potential to improve the level of decentralisation and diversification, efficiency, transparency of the financial system, furthermore could improve the access to and confidence in financial services. The new FinTech products, services, and business models may lead to more decentralisation and diversification, which may reduce market concentration and could mitigate the impact of future financial shocks (FSB, 2017). The decrease of market concentration also adheres to the "too big" problem. FinTech innovations could induce meaningful efficiency improvement in the financial system with the rationalisation of back office functions, optimisation of decision-making processes, reduction of the branch network and searching costs and faster completion of transactions (Fáykiss et al., 2018: 48). Higher transparency reduces information asymmetries and enables risks to be more accurately assessed and better priced, also improving the ability of market participants to manage risk. Access to and convenience of financial services affects the financial inclusion of households and businesses, which is important for supporting sustainable economic growth.

Taking into account the above-mentioned benefits, according to Christensen's well-known theory,[8] it is clear that FinTech innovation can be assigned to the categories

6 According to the FinTech Global, global FinTech investments increased steadily between 2014 and 2017 from $19.9bn to $39.4bn at a CAGR of 18.5%. This trend accelerated in the first half of 2018 when $41.7bn was invested across 789 deals (fintech.global, 2018).

7 See for example the use of blockchain technology in different financial services (Király, s. a.).

8 For the term disruptive technology introduced in the article "Disruptive Technologies: Catching the Wave", see Bower and Christensen, 1995. Later Christensen replaced the term disruptive technology with disruptive innovation, see Christensen, 1997.

of *efficiency innovation* and *sustaining innovation*.[9] FinTech innovation is capable of fundamentally changing existing business models, make financial products and services more accessible and of course affordable. This specialty in the context of the European Union is also supported by the legislation, especially the PSD2 [Directive (EU) 2015/2366]. For this reason, FinTech could also belong to Christensen's third category, i.e. *disruptive innovations.*[10] FinTech innovations could cause serious – micro and systemic – risks, which *could harm financial stability.* From a legal perspective, it is primarily the latter innovations – so this specialty of FinTech – that merit special attention, since the market actors applying this kind of innovations are partially or fully outside the control of the regulatory and supervisory authorities, while they may have a significant influence on the financial stability of the entire financial intermediary system (Hungarian National Bank, 2017).

The negative impact of the FinTech innovation of the financial intermediary system may appear at the individual level of the financial institution *(micro financial risks or micro-prudential risks)* or at the systemic level of the financial system as a whole *(macro-financial risks or macroprudential risks).*

The micro-prudential risks are divided into two broad categories: financial risks and non-financial or operational risks. FinTech firms may develop without the necessary risk management expertise and under-estimate the level of risk they are taking on and may be vulnerable to different forms of *financial risks* (leverage, liquidity mismatch, maturity mismatch). As all businesses, so FinTech firms are subject to *operational risks* (data quality and data protection, cyber risks, third-party reliance, legal/regulatory risks). *Macroprudential risks* – depends on the type of financial innovation – could arise from intensifying procyclicality (with effects that could even spill-over to other sectors), contagion (algorithmic trading, social trading, etc. may lead to new and unexpected sources of contagion), appearance of new institutions and services with systemic significance (monopolies or oligopolies), intensifying opportunity of regulatory arbitrage, and excess volatility (FSB, 2017; BIS, 2018).

2.3 Regulatory responses to FinTech

According to the literature, *four main approaches* have emerged to balance support for innovation with the core mandates – financial stability and consumer protection – of financial regulators. Overall, it may have a meaningful effect on the long-term performance and competitiveness of the economy, how a given regulatory system

9 *Sustaining innovations* are the ones that replace old products with newer models. *Efficiency innovations* – the ones most common in our current economy – are the ones that reduce or simplify the processes in the creation and delivery of an existing service or product.

10 *Disruptive innovations* are not – essentially – breakthrough technologies that make good products better; rather they are innovations that make products and services more accessible and affordable, thereby making them available to a larger population. See www.christenseninstitute.org/disruptive-innovations/ [Accessed 13 Sept. 2019].

addresses the advent of FinTech innovations and how it can appropriately encourage their spread, while addressing the – systemic – risks efficiently (Fáykiss et al., 2018: 52). It is necessary to point out, that a few FinTech innovations, have been expressly designed to operate in the interstices of the law and avoid regulation, many other FinTech entrepreneurs are instead designing their businesses to operate within the regulated environment (Allen, 2019).

The first approach involves doing nothing or laissez-faire. This approach basically means not regulating FinTech or the FinTech firms just simply have to comply with the traditional financial regulation, often with highly restrictive results. *The second approach* provides the regulators a certain amount of flexibility on a case-by-case basis. The regulators equipped by the legislature with a mandate to grant no-action letters, restricted licenses, special charters or partial exemptions for FinTech firms. In *the third approach* – the structured experimentalism – regulators can provide a structured piloting exercise, a regulatory "safe space" for experimentation with new approaches involving the application of technology to finance. *The fourth approach* reforms the existing regulations or new regulations are developed (Zetzsche et al., 2017: 11–14).

In my view, the first approach – with the exception of some cases – is not the proper form to handle the aforementioned risks that FinTech creates. It is necessary to underline that according to the principle of legality, and rule of law, of course, finance is legally constructed and does not stand outside the law, the existing legal environment will shape – and often form a constitutive part of – the FinTech products and services that can be offered. The second approach is based on the regulator's case-by-case discretion – legally granted forbearances such as no-action letters, restricted licenses, or legally not necessarily granted special charters – but this comes with the difficulties of ensuring the equal treatment, also comes with the risks of errors, which could distort competition or the permitted conduct may prove harmful to clients or the financial system as a whole. Moreover, the second approach's case-by-case nature is not suitable for market-wide use and fails to provide long-term legal certainty for FinTech businesses and also cannot be used for international standardisation (Zetzsche et al., 2017: 11–14). The third approach, the structured experimentalism is *a new and innovative approach to test* a product, a service or business models in a "real" but "created" legal framework with the possibility to get to the market after the test period. This approach allows FinTech to step in the – restricted – market with its innovative service, product or business model, without any sanctions, in return they incorporate appropriate safeguards to reduce the risk of their innovative business and also the regulatory authority gets important information, *ex ante* the special legal regulation even exists. The regulatory sandbox is not a typical legal institution, but an innovation in legal regulation as FinTech in the financial industry. Finally, *the fourth approach* emphasises the existing regulations or new regulations are developed. If the third and the fourth approach follows one another, it could be called the *smart regulation*.

3 Regulatory Sandbox

3.1 The concept and term

Concepts like sandboxes come from the computer industry where sandboxes are created to test new developments interacting with a mirrored copy of the whole operative system, including databases and other software programs but without being able to affect any elements already running. First – in 2015 – the U.K. Financial Conduct Authority used the term "regulatory sandbox" when it introduced its own one (FCA, 2015; Bromberg et al., 2017: 314–336).

Since then, the concept spread across more than 20 countries from Europe to Asia.[11] Among the members of the European Union, the *Netherlands* (dnb.nl) and *UK* (fca.org.uk) are operating their regulatory sandbox, *Hungary* (mnb.hu), *Spain* (s03.s3c.es) and *Lithuania* (lb.lt) already made a proposal to set up their own ones. The paper only analyses the previously mentioned five countries' legally relevant regulations and proposals.

According to the literature and the regulatory practice, in a finance regulatory sandbox there is a "safe space" for experimentation with new approaches involving the application of technology to finance.[12] More accurately, a regulatory sandbox is a framework set up by a financial sector regulator to allow small-scale, live testing of innovations by private firms in a controlled environment (operating under a special exemption, allowance, or other limited, time-bound exception) under the regulator's supervision (Jenik and Lauer, 2017). In other words, the regulatory sandbox enables innovators to assess the viability of their financial product, a business model in a "test environment" controlled by the regulatory authority, while enjoying exemption from certain regulatory obligations for a specific period of time (Fáykiss et al., 2018: 54).

Taking into account the abovementioned criteria, we attempt to define the term of *regulatory sandbox as a program established by the law or set up by the competent authority that allows a person to temporarily test innovative financial technology products, services or business models on a limited basis under the laws of the European Union and the member state.*

Despite the attempt to define the term of the regulatory sandbox, the immanent legal nature of this legal institution is *difficult to summarise,* mainly because of the differences between the jurisdiction's legal thinking. Furthermore, *there is no specific legal regulation – in force –* of a regulatory sandbox, the competent authorities who have already implemented a regulatory sandbox, use only the existing discretions they have. The first jurisdiction could be Spain who legally regulates the details of the regulatory sandbox. Nevertheless, *the paper attempts to collect the legal – not necessary based on a legal norm – attributes of the regulatory sandbox in the aforementioned European Union member states.*

11 For example Abu Dhabi, Hong Kong, Malaysia, Netherlands, Switzerland and the U.K.

12 See Zetzsche et al., 2017: 13 and also FCA, 2015.

3.2 Legal attributes of the Regulatory Sandboxes in the member states of the European Union

According to the research, the legal attributes which are necessary to be analysed are:

a) the *objective of the regulatory sandbox*
b) the *conditions of the regulatory sandbox* (participants, eligibility criteria, test period, protection of service users) and
c) special tools of the regulatory authority

The first is to review *the objectives* of the regulatory sandbox, in which there are not any major differences. The basic objectives of the regulatory sandboxes in the analysed member states of the European Union – in the operating and the proposed ones – are better access to finance, foster competition and growth, better understanding of financial innovations.

The second is to review *the conditions* of the regulatory sandbox. In this context the paper analysed:

a) who could participate in the regulatory sandbox
b) what are the eligibility criteria
c) how long is the test period, and
d) what are the special demands to protect the users of the service?

Basically, the analysed member states of the European Union follow the same rules, both *authorised or supervised financial market participants and FinTech start-ups* could enter in the regulatory sandbox, so the participants are not restricted.

The core eligibility criteria are the *innovative nature* of the FinTech product, service or business model. Innovative nature means the use or incorporation of new or emerging technology or the reimagination of uses for existing technology to address a problem, provide a benefit or otherwise offer a product, service, business model or delivery mechanism that is not known by the regulatory authority.[13] The *benefit of the public,* which contains the promotion of financial stability and effective market competition, and *the benefits of the consumer and investor* (safer and cheaper financial services) are also essential criteria. The *necessity of and preparation for testing in a real environment* is also important. Reasoned arguments must be presented about the existence of barriers related to legal regulation (soft and hard law), which prevent achieving the objectives, and without testing in real environment and assistance from the financial market supervisory authority, such barriers are impossible or very difficult to eliminate.

The test period is generally *up to 6 months with the possibility of extension to 12 months.* The quite long period of testing promotes the gathering of a large user base, which may even lay the foundation for longer-term operation, and this horizon also provides an opportunity for exploring and managing potential operational anomalies.

[13] See the term FinTech.

The regulatory sandbox as a legal institution of structured experimentalism requires real consumers and real market participation. In order to work, there must be *rules to protect service users.* In most regulatory sandboxes, there are some limitations to the number of customers and capital, also the regulatory authorities require some financial safeguards (bank guarantee, insurance, etc.).

The aforementioned legal attributes are quite similar in the analysed jurisdictions, but the legal tools are different and also crucial to the effectiveness of the regulatory sandbox. The cause is the Union legislation which does not allow the performance of financial activities without a license, and there are no exceptions. It is the competence of national law to grant the regulatory authority, the competence to issue a temporary licence or restricted operating licence. These legal institutions are necessary to set up a regulatory sandbox with the participation of FinTech firms.

According to the national law or the proposals, there are – and could be – differences in the entrance to the regulatory sandbox. The first model is based on an *administrative decision* (temporary licence, restricted authorisation, no-action letter) if it is granted by the national law. The other model is based on an *arrangement* or a *contract* between the regulatory authority and the participant. The effectiveness of the regulatory sandbox is based on how flexible – *ex ante* – the legal “regulation” or legal environment can be set up by the regulatory authority’s administrative decision or administrative contract within the regulatory sandbox. This is verifiable with regards to interpreting national laws and rules, but there is almost no flexibility to the national and no flexibilities to the laws of the European Union. The regulatory sandbox *alone* – in the context of the European Union law – is typically too limited in scope and scale to promote meaningful innovation.

After a participant efficiently finished the testing in the regulatory sandbox, the crucial thing is its legal effects. How can the FinTech firm get a *special authorisation* (restricted or full license) to provide the product or service and in what – not anymore ex ante – legal conditions. This requires a detailed legal regulation *which is currently not provided either by the national law or the European law* to the regulatory authorities – generally and not just by specific sectors – in the analysed countries.

4 Conclusion

The paper highlighted the term of financial technology, set up its classification, summarised its benefits and threats, and reviewed the types of regulatory approaches to FinTech. The paper also defined the term of the regulatory sandbox and analysed the introduced or proposed legal attributes of the regulatory sandbox within the context of European Union members. The regulatory sandbox is a new and innovative legal institution to handle the threats and utilise the benefits of financial innovation. The regulatory sandbox allows the regulatory authority to create a special legal environment – ex ante the real legal regulation – for the FinTech firms to test, along

with the protection of the users. But in the context of the European Union law, the effectiveness of national regulatory sandboxes is quite limited. The regulatory sandbox is a reasonable and useful regulatory approach, which can also be effective, if the regulatory authorities receive the competence to build on the regulatory sandbox and step to the next stage of the so-called *smart regulation,* and have the competence to reshape the regulation with the balance of public interest and financial innovation and give the competence to issue restricted or full licences, *by the law.*

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