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COMMENTS OF SUSAN VON STRUENSEE, JD, MPH

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The increasing pace of FinTech development has triggered a worldwide race among policy makers to overhaul their own regulatory landscape in order to be as innovation-friendly as possible. Consequently, a vast array of new tools and regulatory practices have emerged over the last years. The paper provides a critical systematisation of regulatory strategies and toolkits that have emerged so far (such as regulatory sandboxes and innovation hubs), stressing the increasing role played by legal marketing as a by-product of regulatory competition. Furthermore, the article describes and supports the paradigm of pro-competitive regulation underlying Open Banking projects in the EU, UK, Australia and other jurisdictions as the true game-changer approach that can unlock the potential of FinTech innovation.

Keywords: FinTech; BigTech; regulation; sandbox; innovation hub; Open Banking; pro-competitive regulation

Respectfully submitted,

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Regulating FinTech: from legal marketing to the pro-competitive paradigm.

Abstract. The increasing pace of FinTech development has triggered a worldwide race among policy makers to overhaul their own regulatory landscape in order to be as innovation-friendly as possible. Consequently, a vast array of new tools and regulatory practices have emerged over the last years. The paper provides a critical systematisation of regulatory strategies and toolkits that have emerged so far (such as regulatory sandboxes and innovation hubs), stressing the increasing role played by legal marketing as a by-product of regulatory competition. Furthermore, the article describes and supports the paradigm of pro-competitive regulation underlying Open Banking projects in the EU, UK, Australia and other jurisdictions as the true game-changer approach that can unlock the potential of FinTech innovation.

Keywords: FinTech; BigTech; regulation; sandbox; innovation hub; Open Banking; pro-competitive regulation.

1. Introduction.

The use of technology to provide financial services (FinTech) represents one of the most fascinating interplays in economic history in the last 150 years.[1] Since the introduction of the telegraph in 1838 and the first transatlantic cable in 1866, technological innovation has marked the development of global financial markets throughout the 19th century.[2] Similarly, the automatic teller machine introduced by Barclays in 1967 represented one of the most important financial innovations in the banking sector.[3] Starting from 1987, traditional regulated financial players have progressively based their activity on digital infrastructure and electronic communication.[4] Since then, the financial industry has become the top purchaser of IT products worldwide and technology innovation has gained an indisputable importance throughout the whole scope of services traditionally delivered by financial intermediaries.

Even if the convergence of technology and the financial sector has a long history, in the past decade, the exponential growth in the digital economy has led not only to the disruption of several industries (advertising, media, retail and wholesale business), but it has significantly affected the financial industry. The main driver of change on the supply side relates to the rise of several technological developments.[5] Namely, the systematic

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[1] Douglas W Arner, Janos N Barberis, Ross P Buckley, and Dirk A Zetzsche, 'Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation', (2017) 23 Fordham Journal of Corporate & Financial Law 3147.

[2] Douglas W Arner, Janos N Barberis, and Ross P Buckley, 'The Evolution of FinTech: A New Post-Crisis Paradigm?', (2016) 47 Georgetown Journal of International Law 1271.

[3] James Shepherd-Barron, 'Meet the true star of financial innovation — the humble ATM', (2017) Financial Times, <https://www.ft.com/content/052f9310-5738-11e7-80b6-9bfa4c1f83d2> accessed 14 January 2020.

[4] Arner, Barberis, and Buckley (n 2).

[5] Financial Stability Board, 'FinTech and market structure in financial services: Market developments and potential financial stability implications', (2019) <https://www.fsb.org/2019/02/fintech-and-market-structure-in-financial-services-market-developments-and-potential-financial-stability-implications/> accessed 15 January 2020.

use of application programming interfaces (APIs), enabling interoperability, smooth data sharing, cloud computing, as well as new patterns of consumer behaviour based on smartphone usage, have significantly changed the interactions between providers and users.[6] On the demand side, the digitalisation of retail commerce has influenced customer experience and expectation with reference to speed, convenience, and user-friendliness of banking services. Moreover, demographic factors such as the increasing digital literacy of millennials has contributed to strengthening the demand for FinTech services.[7]

In light of these factors, FinTech innovation is set to allow market entry by new players and new business models to emerge. Notably, technological developments allow the unbundling of financial services, which have traditionally been conceived as being provided by banks and financial conglomerates. Indeed, empirical research found that FinTech services are becoming widespread among retail customers in specific market niches all around the world (e.g. crowdfunding, cross-border payments, P2P lending, financial services targeted on unbanked individuals who lack a credit history).[8] Digital platforms and electronic aggregators are acting as distribution channels of financial services, and robo-advisors are harnessing customer information and digital footprints (i.e. online traces made of writing texts about oneself) in order to provide tailored services. Moreover, firms can make use of FinTech to perform domestic and cross-border payment services (by means of pre-funded e-money or digital wallets), retail and commercial banking (by establishing innovative lending and borrowing platforms), customer relationship (by providing price comparison, switching services and credit risk rating), wholesale banking and markets, wholesale payment, clearing and settlement infrastructure.[9] Last but not least, the lending sector is set to be radically disrupted by big data analytics and new platform-based business methods. Indeed, strong competitive pressure is likely to surface as a wide range of lending platforms is entering the market, including marketplace lenders and P2P.[10] By harnessing big data analytics, machine learning algorithms, and alternative data sources, these new players aim to fill the unmet demand for loan to individuals and SMEs.[11]

FinTech also comprehends well-established technology firms with extensive customer networks, such as the Google, Amazon, Facebook, Apple (so-called BigTechs), which are looking to take advantage of their platforms in order to provide financial services. Contrary to ordinary FinTechs, they can scale up very quickly by leveraging network effects, brand recognition, state-of-the-art technology and large proprietary customer data

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[6] Oscar Borgogno and Giuseppe Colangelo, 'Data sharing and interoperability: Fostering innovation and competition through APIs', (2019) 35 Computer Law & Security Review 5.
[7] Financial Stability Board (n 5) 11.
[8] Greg Buchak, Gregor Matvos, Tomasz Piskorski, and Amit Seru, 'Fintech, regulatory arbitrage, and the rise of shadow banks', (2018) 130 Journal of Financial Economics 453.
[9] European Parliament, 'FinTech: the influence of technology on the future of the financial sector', (2017) 16, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A8-2017-0176+0+DOC+PDF+V0//EN> accessed 17 January 2020.
[10] Stijn Claessens, Jon Frost, Grant Turner, and Feng Zhu, 'Fintech credit markets around the world: size, drivers and policy issues', (2018) BIS Quarterly Review, <https://www.bis.org/publ/qtrpdf/r_qt1809e.htm> accessed 17 January 2020.
[11] Julapa Jagtiani and Catharine Lemieux, 'The roles of alternative data and machine learning in fintech lending: Evidence from the LendingClub consumer platform', (2019) 48 Financial Management 1009.

sets.[12] In some jurisdictions, such as China and other emerging markets and developing economies in south east Asia, east Africa and Latin America, the expansion of BigTechs has been rapid.[13] Contrary to FinTechs, platform-based companies enjoying substantial market power in their core industries (e-commerce, social networks, smartphones and wearables, etc.), are set to raise more urgent issues to regulators and policy makers.[14] By harnessing their rich portfolios of financial resources and data sets, they could enter financial markets very quickly with new products and services, combining different types of financial and non-financial products and services. In light of the disruption brought in the past within other industries, it is likely that the banking sector could face serious competitive pressure from BigTechs.

Against this background, financial regulation has witnessed a thorough reform process in the aftermath of the 2008 financial crisis, particularly in the US and EU.[15] Overall, the business activity of traditional banks has been progressively characterised by an increased regulatory burden. Policy makers have increased the compliance obligations of banks and have altered their commercial incentives and business structures. The paradigm of the universal banking model has been tackled with ring-fencing obligations and has increased regulatory capital requirements. Moreover, as the intense use of collateralised debt obligations were considered one of the main triggers of financial contagion due to the detachment of credit risk from the underlying loan originator, new rules have been enacted to curb systemic risk generated by the most significant and interconnected financial institutions.[16] On top of this, new resolution regimes were put in place in both EU and US in order to ensure the orderly failure of banks: traditional financial institutions are now under the obligation to set forth recovery and resolution plans and conduct stress tests to evaluate their viability.[17]

The combination of tightened regulation on the financial system in the aftermath of the 2008 crisis and the recent breakthroughs in technology have led to the surfacing of FinTech non-banking financial intermediation. Traditional banks have been mandated to cut risky lending, invest in more liquid assets and maintain higher equity capital. As a result, new FinTech players have had the chance to enter financial markets by providing specific services that might compete with legacy players while avoiding transformation services of banks and thus escaping stricter regulation on capital and liquidity requirements (i.e. Basel III framework).[18]

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[12] Financial Stability Board, 'BigTech in finance: Market developments and potential financial stability implications', (2019) 3-4, <https://www.fsb.org/2019/12/bigtech-in-finance-market-developments-and-potential-financial-stability-implications/> accessed 25 January 2020.

[13] Bank for International Settlements, 'Big tech in finance: opportunities and risks', (2019) <https://www.bis.org/publ/arpdf/ar2019e3.htm> accessed 15 January 2020.

[14] Expert Group on Regulatory Obstacles to Financial Innovation, 'Thirty Recommendations on Regulation, Innovation and Finance', (2019) 79-80, <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> accessed 20 February 2020.

[15] John Armour, Dan Awrey, Paul Davies, Luca Enriques, Jeffrey N Gordon, Colin Mayer, and Jennifer Payne, *Principles of Financial Regulation*, (2016) Oxford University Press, 416-17.

[16] Kristin N Johnson, 'Macroprudential Regulation: A Sustainable Approach to Regulating Financial Markets', (2013) University of Illinois Law Review 881.

[17] John Armour (2015), 'Making bank resolution credible', (2015) in Niamh Moloney, Eilis Ferran, and Jennifer Payne (eds) *The Oxford Handbook of Financial Regulation*, Oxford University Press, 454.

[18] Buchak, Matvos, Piskorski, and Seru (n 8).

The aim of this paper is twofold. Firstly, it aims to provide a systematic and critical framework of FinTech regulation. This would allow to put the array of current regulatory tools and strategies surfaced so far into a comprehensive picture. Secondly, the article stresses the increasing role played by legal marketing in emphasising new regulatory tools. Hence, it suggests that pro-competitive regulation can be the true game-changer approach, able to unlock the potential of FinTech innovation.

The paper is structured as follows. Section 2 evaluates the main benefits and drawbacks of financial technology (including the specific challenges posed by BigTechs) that policy makers need to consider when dealing with FinTech. Section 3 provides a systematisation of current regulatory practices by setting forth the three main strategy options available and assessing the new toolkits developed by the most dynamic jurisdictions (i.e. regulatory sandboxes, innovation hubs, Open Banking). Section 4 explains why the pro-competitive paradigm shines out in terms of originality and economic potential in the current landscape. Section 5 concludes.

2. The promises and perils of FinTech.

The emergence of players that offer digitally enabled financial services poses both opportunities and risks.

FinTech is expected to provide benefits in terms of competition, efficiency, transparency, and financial inclusion.[19] First, by facilitating the entry of firms and unlocking competition within retail banking markets, FinTech may promote the offer of new and more tailored products and services, and curb the so-called "loyalty penalty", which happens when longstanding customers bear higher prices than more engaged ones for the same services.[20] Second, by exploiting digital technologies and widening the offer of products and service, FinTech-based solutions may enable access to finance through new means and at a lower cost, promoting financial inclusion.[21] Notably, FinTech can open

[19] See e.g. Expert Group on Regulatory Obstacles to Financial Innovation (n 14) 10 and 90-92; Financial Stability Board, 'Financial Stability Implications from FinTech', (2017) <https://www.fsb.org/2017/06/financial-stability-implications-from-fintech/> accessed 21 February 2020. See also Tobias Berg, Valentin Burg, Ana Gombović, and Manju Puri, 'On the Rise of FinTechs – Credit Scoring using Digital Footprints', (2019) Michael J Brennan Irish Finance Working Paper Series Research Paper No 18-12, <https://ssrn.com/abstract=3163781> accessed 21 February 2020; Xavier Vives, 'The Impact of Fintech on Banking', (2017) 2 European Economy 97.

[20] UK Competition and Markets Authority, 'Tackling the loyalty penalty', (2018) <https://www.gov.uk/government/news/cma-to-investigate-loyalty-penalty-super-complaint> accessed 21 February 2020. See also Oscar Borgogno and Giuseppe Colangelo, 'Consumer Inertia and Competition-Sensitive Data Governance: The Case of Open Banking', (2020) Working Paper <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3513514> accessed 21 February 2020.

[21] See Isil Erel and Jack Liebersohn, 'Does Fintech Substitute for Banks? Evidence from the Paycheck Protection Program', (2020) NBER Working Paper No. 27659 <http://www.nber.org/papers/w27659> accessed 15 August 2020, finding that FinTech financial services are disproportionately used in areas with fewer bank branches, lower incomes, and a larger minority share of the population, as well as in industries with little ex ante small-business lending. In particular, the authors analyze the response of FinTech to financial services demand created by the introduction of the Paycheck Protection Program (PPP), which is part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act enacted in the U.S. as a response to the COVID-19 shock and offers guaranteed and potentially-forgivable small-businesses loans to provide a direct incentive for small businesses to keep their workers on the payroll. The paper reports that borrowers were more likely to get a FinTech-enabled PPP loan if they were located in ZIP codes where local banks were unlikely to originate PPP loans.

certain products to individuals that were previously unbanked or under the radar of traditional banking services. This stems from better profiling techniques and credit scoring based on cross data analysis. Furthermore, FinTech-enabled by-products, such as price-comparison tools and interoperability, can mitigate consumers' unwillingness and inability to switch among several firms and shop around to get the most convenient deals.[22] Third, by entrusting consumers with augmented switching powers enabled by data-driven solution, markets might benefit in terms of increased integration and operational efficiency.[23] Finally, since FinTech disintermediates the financial supply chain, it decreases financial frictions by allowing a more efficient provision of financial services and creating an effortless customer experience.[24] Financial shocks can be substantially dampened by FinTech diversification and decentralisation.[25] Accordingly, transparency diminishes information asymmetries, thereby enabling more accurate pricing and allocation of risk throughout the market.

When it comes to BigTechs' entry into financial markets, further positive impetus might arise in terms of market competitiveness. Large tech companies could amplify the benefits that come with FinTech innovation by leveraging their role in cloud computing-based services, data collection and inference analysis. BigTechs might further benefit from flexibility, cost reductions, standardisation and scalability. Consequently, competition dynamics are likely to benefit from their engagement in financial markets, stimulating responses from incumbent side and ultimately increasing financial inclusion.

However, alongside opportunities, FinTech innovation may also raise concerns. While some potential risks are entirely new, others are the same, already created by the provision of financial services through traditional means but are exacerbated by the digitalisation of transaction activities.[26]

First, changing patterns of competition in the banking industry as a result of the emergence of FinTech may hinder financial stability due to regulatory arbitrage, adverse selection and moral hazards.[27] Financial stability concerns raised by digital innovation require to be targeted through a holistic perspective, encompassing both micro-prudential

[22] Canadian Competition Bureau, 'Technology-led innovation and emerging services in the Canadian financial services sector', (2017) <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04315.html> accessed 4 February 2020.

[23] See European Commission, 'FinTech Action plan: For a more competitive and innovative European financial sector', COM (2018) 109 final, 2, arguing that FinTech can prove beneficial for the setting up of the EU Capital Market Union.

[24] According to Peter Ramsey, 'What the challenger banks did differently', (2020) <https://builtformars.co.uk/banks/> accessed 5 June 2020, FinTechs, on average, make opening account far easier than traditional banks in terms of both number of clicks required and time waiting in the setup process. Notably, the study counts a 96-click gap and a 34-day gap between the shortest and longest setup processes.

[25] Financial Stability Board (n 19) 13-15.

[26] Expert Group on Regulatory Obstacles to Financial Innovation (n 14) 10-11.

[27] See e.g. Financial Stability Board (n 5); Financial Stability Board (n 19); Xavier Vives, 'Competition and stability in modern banking: A post-crisis perspective', (2019) 64 International Journal of Industrial Organization 55. However, see Nicola Pierri and Yannick Timmer, 'Tech in Fin before FinTech: Blessing or Curse for Financial Stability?', (2020) CESifo Working Paper No 8067, <http://www.cesifo.org/en/publikationen/2020/working-paper/tech-fin-fintech-blessing-or-curse-financial-stability> accessed 29 February 2020, suggesting that technology adoption in lending can enhance financial stability through the production of more resilient loans. See also Claessens, Frost, Turner, and Zhu (n 10) 38, providing evidence against the argument that regulatory arbitrage strengthens FinTech activity, thereby arguing that more stringent banking regulation might deter fintech credit activity.

and macro-prudential regulation.[28] A sudden increase in competitive pressure can trigger instability as incumbents may take in excessive risks to counter fight newcomers.[29] Coordination problems affecting depositors and investors, in turn, would expose the industry to panic runs. Further, maturity mismatch in FinTech lending can outbreak as platforms start using their balance sheet for intermediation or engage in securitisation. Conversely, liquidity mismatch would become an issue only in the unlikely event FinTech players started holding clients' money.[30] Moreover, operational risk is set to grow in importance as information sharing, outsourcing, and big data analytics become widespread.[31] Indeed, cybersecurity and data protection are taking centre stage as the most vulnerable parts of the financial system. On the regulatory side, legal perimeters and oversight techniques might need to adapt as long as FinTech business methods fall outside the scope of current legislation.[32] Finally, any future attempt to gauge macro-financial risk arising from contagion channels, systemically important entities, excess volatility or procyclicality has to take into account FinTech-enabled activities.[33]

The entry of BigTechs raises additional systemic concerns.[34] Indeed, the presence of strong economies of scale, extreme indirect network effects, remarkable economies of scope due to the role of data as a critical input, and conglomerate effects, make digital markets highly concentrated, prone to tipping and not easily contestable. This tendency towards concentration may increase 'too big to fail' risks if large online platforms enter into financial services, since an idiosyncratic shock hitting a BigTech can have repercussions for the entire system. Further, BigTech partnerships with incumbent banks may create new operational and financial links and dependencies.[35]

Second, the systematic digitalisation of financial transactions raises risks of discrimination, manipulation and exploitation of vulnerable customers, in addition to those traditionally related to the potential lack of financial education.[36] Indeed, due to the high levels of opaqueness characterising algorithm-based decisions, consumers may be exposed to ambiguous and overly complex decision-making mechanisms. Furthermore, persons who are un-networked and do not use technologies for various reasons (e.g. lack of digital literacy, lack of accessibility to digital devices, lack of trust in digitalised services) could be denied access to financial services. Moreover, the digital financial transformation increases the exposure to risks of data breaches and frauds, which may

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[28] See Luca Enriques, Alessandro Romano, and Thom Wetzer, 'Network-Sensitive Financial Regulation', The Journal of Corporation Law (forthcoming), laying down a complete taxonomy of prudential regulation hinging on network theory.

[29] Xavier Vives, 'Digital disruption in financial markets', (2019) 11 Annual Review of Financial Economics 243.

[30] Financial Stability Board (n 19) 13-15.

[31] Ross P Buckley, Douglas W Arner, Dirk A Zetzsche, and Eriks Selga, 'TechRisk', (2020) Singapore Journal of Legal Studies 35.

[32] European Banking Authority, 'Report on Regulatory perimeter, regulatory status and authorisation approaches in relation to FinTech activities', (2019) <https://eba.europa.eu/eba-publishes-report-on-regulatory-perimeter-regulatory-status-and-authorisation-approaches-in-relation-to-fintech-activities> accessed 2 March 2020, 31-33.

[33] Financial Stability Board (n 19) 15.

[34] Buckley, Arner, Zetzsche, and Selga (n 31); Financial Stability Board (n 12) 22-26; Vives (n 29).

[35] Financial Stability Board (n 12) 22-26.

[36] See e.g. recently Talia Gillis, 'False Dreams of Algorithmic Fairness', (2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3571266> accessed 10 July 2020.

undermine confidence and represent a threat to the stability of the financial system.[37] Hence, both cybersecurity and data protection have become sources of systemic risk in the financial system that regulators need to carefully address.[38]

Finally, antitrust concerns are posed by the entry of BigTechs into financial services.[39] By exploiting their established networks, the massive quantities of data generated by them, and the access to analytical tools and forefront technologies to process customer and transaction data, large online companies are able to propose a very broad range of tailored offerings integrated with one another. Hence, BigTechs may implement anti-competitive strategies, leveraging their market power by bundling new services with traditional products, engaging in self-preferencing, or hindering access to their platforms.[40]

3. Updating the regulatory toolbox?

The spread of FinTech-enabled financial services and business models is heavily dependent on the regulatory perimeter adopted by each jurisdiction. The flourishing of FinTech depends on whether non-banking players that provide lending or payment activities by means of technological breakthroughs fall under regulatory oversight and, in turn, are subject to heavy bank-like prudential regulation. Indeed, FinTech innovation has been powered not only by technology development and by efficiency, but also by regulatory arbitrage.[41] For instance, the surge in FinTech lending witnessed in the U.S. and the decline of traditional banks' market share is correlated with a light regulatory burden on FinTech shadow banks.[42] In the same vein, non-banks have benefitted from the technological developments driving the transition from cash to electronic payments, as the performance of core payment functions has become less expensive.[43]

So far, cutting-edge FinTech activities are not regulated consistently under most jurisdictions around the globe. Among these, we find crypto-assets, technological services providers, technological support, RegTech (firms using AI to extract content from financial documents; big data analysis; platforms using machine learning to prevent fraud; firms using AI for credit risk analysis), platform-enabled services (crowdfunding, peer-to-peer lending), marketplace service providers (two-sided platforms connecting

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[37] European Commission, 'FinTech Action plan: For a more competitive and innovative European financial sector', COM (2018) 109 final, 2-3. See also European Banking Authority, 'Guidelines on ICT and security risk management', (2019) <https://eba.europa.eu/sites/default/documents/files/documents/10180/2522896/32a28233-12f5-49c8-9bb5-f8744ccb4e92/Final%20Guidelines%20on%20ICT%20and%20security%20risk%20management.pdf> accessed 20 February 2020.
[38] Buckley, Arner, Zetzsche, and Selga (n 31).
[39] Oscar Borgogno and Giuseppe Colangelo, 'The Data Sharing Paradox: BigTechs in Finance', (2020) European Competition Journal (forthcoming).
[40] See Borgogno and Colangelo (n 6); Expert Group on Regulatory Obstacles to Financial Innovation (n 14) 80; Miguel de la Mano and Jorge Padilla, 'Big Tech Banking', (2018) 14 Journal of Competition Law and Economics 494; Vives (n 29).
[41] Armour, Awrey, Davies, Enriques, Gordon, Mayer, and Payne (n 15) 435.
[42] Buchak, Matvos, Piskorski, and Seru (n 8).
[43] Dan Awrey and Kristin van Zwieten, 'Mapping the Shadow Payment System', (2019) Cornell Legal Studies Research Paper No. 44, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3462351&download=yes> accessed 3 March 2020.

borrowers and lenders, business and potential customers), intermediation services, comparison services, and credit reference services.[44] Admittedly, as all these activities share an ancillary nature compared to financial services, they are out of the traditional regulatory perimeter.[45] For instance, they can be limited to the provision of technical support, IT solutions, and automatised compliance. In the same vein, big data analytics services employed in finance do not fall necessarily under ordinary financial regulation.

Given that FinTech developments come with pros and cons, policy makers, scholars and regulators are still gauging how to deal with it. As the regulatory enacted approach might significantly affect innovation, competition and consumer welfare, it is worth systematising the current regulatory strategies that have surfaced worldwide so far. Furthermore, such an issue is closely intertwined with regulatory competition between jurisdictions in order to attract human capital, foster investments, and economic growth. As is already happening in the realm of electronic money institutions within the European Internal Market, we may assist strong proactive intervention to attract firms and FinTech providers by jurisdictions through regulatory dampening.[46] This normative option could give rise to dangerous inconsistencies with reference to market access of FinTech credit institutions. Against this background, policy makers ought to be aware of the trade-offs embedded with more or less interventionist approaches.

3.1. Regulatory strategies.

In its very essence, policy makers and regulators have three options to choose from, namely *laissez-faire*, functional or tailored regulatory strategy.[47]

Under the first one, firms are free to develop and make use of FinTech breakthroughs under the ordinary regulatory framework. Accordingly, as long as the service at issue is not widespread and does not raise serious economic and systemic concerns, the supervisory authority sticks to a wait-and-see approach.[48] However, this strategy does not entail a passive attitude towards digital innovation in financial markets. Regulators and policy makers are expected to keep overseeing the industry in order to target any potential risk for financial stability, data protection, competition and consumer welfare ahead of time. Moreover, this method does not prevent regulators from issuing guidelines, reports and communication aimed at warning market players and coordinating actions with other authorities (especially when it comes to sensitive matters, such as anti-money laundering

[44] European Banking Authority (n 32) 13-14.
[45] European Banking Authority (n 32) 16.
[46] Luca Enriques, 'Welcome to Vilnius: Regulatory Competition in the EU Market for E-Money', (2019) <https://clsbluesky.law.columbia.edu/2019/11/04/welcome-to-vilnius-regulatory-competition-in-the-eu-market-for-e-money/> accessed 3 March 2020.
[47] Marlene Amstad, 'Regulating Fintech: Objectives, Principles, and Practices', (2019) Asian Development Bank Institute Working Paper Series No 1016, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3541003> accessed 4 March 2020; Arner, Barberis, Buckley, and Zetzsche (n 1) 43-46.
[48] See Arner, Barberis, Buckley, and Zetzsche (n 1) 43-44, pointing at China as a leading example of this more permissive approach, especially until 2015. Admittedly, the Chinese government decided to prioritize FinTech innovation and growth in order to tackle relative inefficiencies of the Chinese financial system. As noted by Claessens, Frost, Turner, and Zhu (n 10) 36, FinTech development is greater in jurisdictions where accessing credit is more difficult and less advanced (as in China).

and consumer protection).[49] Admittedly, leaving such a dynamic and rapidly evolving area as FinTech wholly unregulated exposes regulators and market players to hidden risks related to interconnectedness that might undermine the foundation of the financial system in term of instability, market monopolisation and disruptive competition. Thus, this strategy is more suited to target newly-born developments of FinTech innovation rather than fully-fledged changes of the industry.

Conversely, a functional approach requires regulators to understand how FinTech business models and players work, both collectively and separately within the industry, in order to evaluate how to strengthen financial stability. Whenever economic activities raise same risks, they would need the same regulatory response. This means that regulators should not focus on particular institutions (such as commercial banks, insurance service providers, payment service providers), but they should rather target market-wide behaviour and practices.[50] Therefore, the same regulation should apply regardless of whether the activities are led by an incumbent financial institution or a FinTech.

This approach is widely adopted by regulators throughout the world with the goal of ensuring a level playing field for incumbents and newcomers.[51] From a theoretical perspective, indeed, this strategy promises to curb arbitrage opportunities and elusion from the side of market players willing to harness innovative business models and technology-enabled commercial opportunities. However, the functional approach requires that regulators have strong analytic and computational skills as well as a broad understanding of all the financial landscape, in order to safely detect potential risks, otherwise, it is highly likely that any premature regulatory intervention would end up by jeopardising innovation and obstructing efficiency enhancing market developments. On top of this, it might be the case that some new promising activities should be incentivised in light of the benefits they can bring to society overall, in terms of competition, innovation and consumer choice. The rigid application of a "same risk, same regulation" approach would force regulators to nip innovative services in the bud, without weighing potential benefits with their expected harm.

According to the third paradigm, regulators are expected to identify the original features of specific market developments and accordingly design pieces of regulation, tailored on such new technology-enabled functionalities. This approach builds on the finding that functional perspective delivers its objectives as long as certain activities operate in the same way as traditional ones. However, new products and services can raise risks and

[49] This approach has been widely enacted by European regulators. See European Supervisory Authorities, 'Joint Committee Final Report on Big Data', (2018) <https://esas-joint-committee.europa.eu/Publications/Reports/Final%20Report%20on%20Big%20Data.pdf> accessed 6 March 2020, 7; European Supervisory Authorities, 'Warning on Virtual Currencies', (2018) <https://eba.europa.eu/esas-warn-consumers-of-risks-in-buying-virtual-currencies> accessed 6 March 2020, 7.

[50] Armour, Awrey, Davies, Enriques, Gordon, Mayer, and Payne (n 15) 445.

[51] See recently Expert Group on Regulatory Obstacles to Financial Innovation (n 14) 67-68, arguing that technology-driven change may provoke a need to adapt financial regulation, in order to ensure a level playing field between incumbents and new market entrants and between different types of market participants, hence recommending the European Commission and the European Supervisory Authorities to take the necessary steps to ensure that regulation of the financial sector follows the principle of 'same activity creating the same risks should be regulated by the same rules.'

concerns not falling within the umbrella of traditional regulation. Therefore, in the absence of specifically designed rules, the industry is set to bear a twofold hurdle.

Firstly, old-fashioned regulation could hamper the socially beneficial effects of new FinTech-enabled services by keeping barriers to entry high, together with a low level of competition within the market.

Secondly, major risks posed by FinTech players could not be adequately addressed by traditional regulation due to the inherently original character of new services and products thereby exacerbating the weaknesses of the financial system. Henceforth, regulators should put FinTech to good use for society by developing new approaches and regulatory strategies able to cover the full spectrum of the matter ("new functionality, new rules"). Indeed, several national authorities have already started to strike a balance between the risks and potential benefits of FinTech by envisaging special licences for FinTechs.[52] A vast pile of new regulatory tools harnessing the principle of proportionality in financial regulation has emerged in the last years, from innovation hubs to piloting programs and regulatory sandboxes.[53] In their very essence, these toolkits meet the need of facilitating innovation within the financial market by requiring regulators to work side by side with firms in shaping the FinTech regulatory ecosystem.

It is worth highlighting that these three approaches are not mutually exclusive. They should rather be regarded as the building blocks of a modern regulatory toolbox surfaced over the last years. Depending on the level of development and the potential of a FinTech breakthrough, they can be deployed complementary or used in succession by regulators. A clear example of this strategy comes from the EU regulatory approach to crowdfunding. Only after having followed the impact on the industry and the reaction of individual member states did European authorities start evaluating whether the current financial regulation framework could have been applied effectively to these new platforms.[54]

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[52] In order to facilitate market entry by FinTech newcomers, in 2018, the Swiss parliament entrusted the Swiss Financial Market Supervisory Authority (FINMA) with the power of granting a special licence with relaxed requirements in favour of innovative financial companies. The FinTech licence allows institutions to accept public deposits of up to CHF 100 million, provided that these are not invested, and no interest is paid on them. See FINMA, 'Guidelines for FinTech licence applications pursuant to Article 1b of the Banking Act', (2018) <https://www.finma.ch/en/~/media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/w_bewillligungfintech_20181203_de.pdf?la=en> accessed 6 March 2020. Similarly, the US the Office of the Comptroller of the Currency (OCC) announced on 31 July 2018 that firms performing at least one core activities (taking deposits, lending money or paying checks) would be eligible to apply for special purpose national bank charters: see Office of the Controller of the Currency, 'Policy statement on financial technology companies' eligibility to apply for national bank charters', (2018) < https://www.occ.gov/news-issuances/news-releases/2018/pub-other-occ-policy-statement-fintech.pdf> accessed 20 August 2020. See also Luca Enriques and Wolf-Georg Ringe, 'Bank-Fintech Partnerships, Outsourcing Arrangements and the Case for a Mentorship Regime', (2020) ECGI Working Paper Series in Law No. 527 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3625578> accessed 20 August 2020, pointing out that such FinTech charters may give raise to regulatory arbitrage and unlevel playing field among different jurisdictions.

[53] Ross P Buckley, D Arner, R Veidt, and D Zetzsche, 'Building Fintech Ecosystems: Regulatory Sandboxes, Innovation Hubs and Beyond', (2019) European Banking Institute Working Paper Series No 53, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3455872> accessed 12 March 2020

[54] European Commission, 'Unleashing the potential of Crowdfunding in the European Union', COM (2014) 172 final; European Commission, 'Crowdfunding in the EU Capital Markets Union', Staff Working Document SWD(2016) 154 final; European Commission, 'Identifying market and regulatory obstacles to

Eventually, a new piece of regulation has been envisaged in order to ensure a level playing field as well as a cross-border development within the Internal Market.[55] In the same vein, European regulators have started gauging the impact and the regulatory concerns involving crypto-assets.[56]

3.2. Innovation tools: sandboxes and hubs.

Over the last years, new regulatory tools known as innovation facilitators, have been designed by policy makers and regulators to bear the rise of FinTech.[57] From a broad perspective, they draw on a proactive approach of public authorities towards innovation in financial services.[58] Furthermore, rather than letting market participants struggle autonomously with a vast array of sector-specific rules, innovation facilitators require regulators to work side-by-side with firms in order to evaluate how to deal with FinTech-enabled products and services. More specifically, innovation facilitators take the form of regulatory sandboxes and innovation hubs. By making use of these tools, authorities can monitor FinTech development and target supervisory and regulatory issues at an early stage.[59]

Regulatory sandboxes are operative schemes, developed and enacted by a competent authority in order to gauge the real-world functioning of innovative financial services, products or business methods.[60] The underlying goal is to benefit from a privileged point of view for firms and regulators within a monitored market space to better identify opportunities and risks generated by new commercial activities. Such a scheme can be shaped depending on the features of each objective and it is generally composed of a

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cross-border development of crowdfunding in the EU', (2017) <https://ec.europa.eu/info/sites/info/files/171216-crowdfunding-report_en.pdf> accessed 10 March 2020.

[55] European Commission, Proposal for a regulation of the European parliament and of the Council on European crowdfunding service providers (ECSP) for business, COM (2018) 113 final.

[56] The matter was first targeted by the European Banking Authority, 'EBA Opinion on virtual currencies', (2014) <https://eba.europa.eu/sites/default/documents/files/documents/10180/657547/81409b94-4222-45d7-ba3b-7deb5863ab57/EBA-Op-2014-08%20Opinion%20on%20Virtual%20Currencies.pdf?retry=1> accessed 10 March 2020. Recently, more detailed recommendations were put forward by the European Banking Authority, 'Report with advice for the European Commission on crypto-assets', (2019) <https://eba.europa.eu/sites/default/documents/files/documents/10180/2545547/67493daa-85a8-4429-aa91-e9a5ed880684/EBA%20Report%20on%20crypto%20assets.pdf?retry=1> accessed 10 March 2020.

[57] Regulatory sandboxes were firstly developed and enacted by the UK Financial Conduct Authority. See Financial Conduct Authority, 'Regulatory sandbox', (2015) <https://www.fca.org.uk/publication/research/regulatory-sandbox.pdf> accessed 12 March 2020). So far, EU has taken the lead in the enactment of regulatory sandboxes. Five authorities have started operational regulatory sandboxes (Denmark, Lithuania, The Netherlands, Poland and the United Kingdom), while Norway, Austria, Estonia, Hungary and Italy have detailed preparations underway. See European Banking Authority, 'Fintech: Regulatory sandboxes and innovation hubs', (2019) <https://www.esma.europa.eu/sites/default/files/library/jc_2018_74_joint_report_on_regulatory_sandboxes_and_innovation_hubs.pdf> accessed 5 March 2020, 16.

[58] Among other new proposals recently put forward by scholars, it is worth mentioning the FinTech "mentorship programme" developed by Enriques and Ringe (n 52): a cooperative scheme under which incumbent banks extends their own regulatory licence to fintech players in exchange for consideration (e.g. an equity stake, an exclusivity agreement, or a fee) so that the latter would be subjected to direct supervisory oversight.

[59] European Banking Authority (n 32) 10.

[60] European Banking Authority (n 57) 5.

preliminary and a testing phase.[61] The former allows the parties to agree on the technical details as well as on the regulatory burdens that are going to be temporarily slackened to allow the testing.[62] As a result, legal costs due to the uncertainty of the implementation of laws and regulations dealing with new services are significantly diminished, thereby lowering frictions towards FinTech innovation for firms. The latter is the core part of the regulatory sandbox as both public authorities and firms can assess the feasibility of innovative propositions in terms of market response and compliance with supervisory and regulatory principles. By doing so, firms get the opportunity to mitigate risks by developing appropriate safeguards able to avoid consumer harm. Finally, the results of the testing phase together with the feedback of the authorities involved are made publicly available so as to spread as much as possible the informative effect of the regulatory endeavour carried out for the benefit of businesses and society at large.[63]

Despite the proactive attitude towards innovation underlying regulatory sandboxes, there are some issues that can diminish their effectivity.[64] First, if not properly implemented, regulatory sandboxes can jeopardise level playing field goals as they would create two tiers between undertakings benefitting from the sandbox and those outside it.[65] Second, it is crucial that public authorities engaged in regulatory sandboxes are transparent and straight forward regarding the guidance provided to firms, especially with reference to its binding character, otherwise, this tool is likely to end up increasing legal uncertainty and litigation in case of shifted views by regulators over time.[66]

Furthermore, even though it is still early to gauge the beneficial impact of regulatory sandboxes, it is worth sounding a word of caution with reference to their underlying objectives. They can prove useful as long as authorities and policy makers keep in mind a clear hierarchy of priorities and regulatory goals.[67] When dealing with FinTech

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[61] In the span of few years, one of the quickest transplantations of a legal mechanism in history took place. After UK and EU countries, Australia followed suit immediately with the Australian Securities and Investments Commission (ASIC) introducing in 2016 a regulatory sandbox regime for FinTech products, allowing eligible businesses to test particular financial services or credit activities in a less onerous regulatory environment for up to 12 months without an Australian financial services (AFS) licence or credit licence. In 2016, Singapore, Malaysia, and Thailand issued regulatory rules regarding regulatory sandboxes. In 2018, in Northeast Asia, Taiwan, Hong Kong and South Korea issued laws on regulatory sandboxes, immediately after the Japan's financial authority launched the 'FinTech Proof-of-Concept Hub'.
[62] See Wolf-Georg Ringe and Christopher Ruof, 'Regulating Fintech in the EU: the Case for a Guided Sandbox', European Journal of Risk Regulation (forthcoming) praising the "institutionalised" dialogue between regulators and firms enabled by sandboxes.
[63] See Arner, Barberis, Buckley, and Zetzsche (n 1) 101; Financial Conduct Authority, 'Regulatory sandbox lessons learned report', (2017) <https://www.fca.org.uk/publication/research-and-data/regulatory-sandbox-lessons-learned-report.pdf> accessed 10 March 2020.
[64] European Banking Authority (n 57) 35-36.
[65] In order to reap the benefits of regulatory competition and experimentation within the EU while preserving legal certainty across the Internal Market, Ringe and Ruof (n 62) advocate for a "guided sandbox" operated by the Member States, but in close interaction with the European Commission (through the three European Supervisory Authorities) as "monitors and guardians".
[66] From a comparative perspective, C-H Tsai, C-F Lin, and H-W Liu, 'The Diffusion of the Sandbox Approach to Disruptive Innovation and its Limitations', Cornell International Law Journal (forthcoming) points out that the implementation of regulatory sandboxes transplanted from common law jurisdictions into different domestic contexts are likely to reflect into regulatory inertia, regulatory capture, and path dependence. The Authors argue that these problems might render a country's rule of law and regulatory strategy unstable and affected by inapplicability, uncertainty, and under-implementation.
[67] Hilary J Allen, 'Sandbox Boundaries', Vanderbilt Journal of Entertainment & Technology Law (forthcoming).

innovation, one should never forget that financial stability and consumer protection are of paramount importance from a society perspective. Contrary to other markets that do not present such strong externalities, competition and innovation concerns should be carefully adjusted according to prudential considerations. Provided this ideal is duly implemented within innovation facilitators design, any backlash on financial stability and consumer protection can be avoided. In fact, nothing prevents regulators from making use of sandboxes in order to improve their own ability of overhauling prudential policies as well as consumer protection tools.[68]

Moving to innovation hubs, they can be understood as dedicated points of interaction with public authorities where firms can seek non-binding guidance and raise enquires on licencing, regulating and supervisory expectations.[69] These tools are meant to increase business understanding of regulators' priorities and supervisory practices with reference to new business models, delivery mechanisms and services.[70] At the same time, they allow authorities to get 'real time' insights on recent trend in regulatory issues against the backdrop of rapid technological advancement (such as artificial intelligence, big data analytics, machine learning, and distributed ledger technologies).

As innovation hubs provide for a case-by-case analysis of each newly-born phenomenon, they have been praised for being more prone to promote innovation than regulatory sandboxes.[71] However, two major concerns may emerge. First, as they require authorities to tackle complex regulatory issues involving new activities related to technology breakthroughs in advance, it could be not only unfeasible for them to provide clear guidance, but it might also divert resources from their core supervisory tasks. This is because regulators may simply lack the expertise and skilled staff needed to address such kind of questions in a meaningful way or fall into the capture of businesses. Furthermore, as the matter underlying FinTech-enabled services is often cross-sectional, regulatory dialogue between different authorities is likely to be needed when it comes to innovation facilitators.[72]

Finally, given the leeway in shaping innovation facilitators overall, there is a risk of exacerbating material and interpretative divergences among regulators in different jurisdictions, thereby boosting regulatory arbitrage.[73] As new FinTech providers are likely to compare several jurisdictions before deciding where to settle down, national

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[68] See Financial Conduct Authority (n 63) 6; Oscar Borgogno, 'Usefulness and Dangers of Smart Contracts in Consumer Transactions', (2019) in Larry A DiMatteo, Michel Cannarsa, and Cristina Poncibò (eds), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital Platforms*, Cambridge University Press, 289.

[69] European Banking Authority (n 57) 7, reported that innovation hubs have been established by competent authorities in 21 EU Member States and 3 EEA States.

[70] European Banking Authority (n 57) 5.

[71] Buckley, Arner, Veidt, and Zetzsche (n 53).

[72] With specific reference to regulatory sandboxes, see Expert Group on Regulatory Obstacles to Financial Innovation (n 14) 20. However, the critique can be extended to innovation hubs as well. See European Banking Authority (n 57) 34.

[73] Even though regulatory arbitrage is not necessarily a harmful phenomenon, when it comes to financial markets and small jurisdiction it can be extremely perilous. Indeed, the harm caused domestically by the collapse of a financial institution can be much lower than the harm generated outside to interconnectedly close economies. See Armour, Awrey, Davies, Enriques, Gordon, Mayer, and Payne (n 15) 565-566. See also Expert Group on Regulatory Obstacles to Financial Innovation (n 14) 69-70, urging upon the importance of guaranteeing a level playing field throughout Europe with regard to the instalment or use of sandboxes, hence harmonising the system of sandboxes.

regulators are likely to harness sandboxes to attract business through privileged regulatory treatment. By so doing, regulatory sandboxes could exacerbate regulatory competition among different states and put financial stability at danger.[74] In order to partially cope with this concern as well as the inherent cross-sectional character of FinTech, it is crucial that more regulatory entities are involved at the same time in the implementation of innovation facilitators, such as competition, prudential, financial conduct and data protection authorities.[75] As a result, these regulatory mechanisms prove once more to be energy intensive for domestic regulators.

3.3 The Open Banking paradigm.

At this point, it is worth analysing interventions aimed at facilitating the entry of firms in banking markets in the first place, before worrying about how to regulate them. Indeed, when it comes to retail consumers, the viability of many FinTech business methods relies on ready access to account data held by banks. By enjoying a gatekeeper function to transaction data, incumbents are unwilling to share these data with potential competitors, hence some authorities and policy makers found that a market solution is unlikely to emerge by itself.

Notably, the revised European Payment Service Directive (PSD2) introduced the access-to-account rule under which account servicing payment service providers, such as banks, must allow third parties to obtain real-time data on customers' accounts as well as provide access to such accounts by executing payment orders initiated through payment initiation service providers interfaces, on the condition that the customer has provided explicit consent and that the account is accessible online.[76] Furthermore, building on the PSD2 framework, the UK Competition and Markets Authority adopted the Open Banking remedy to standardise data sharing interactions between banks and third-party service providers.[77] Namely, the eight major British banks were mandated to jointly develop a single, open, standardised API freely available for the whole industry.

Open Banking represents a new financial ecosystem which hinges upon the development of FinTech innovation and is rooted on interoperability and data-enabled services stemming from the enhanced power conferred on customers to exploit their own transaction personal data by allowing third parties to access it.[78] Within an Open Banking

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[74] In response to this concern, with the aim of promoting multilateral coordination, EU established the European Forum for Innovation Facilitators (EFIF) in January 2019, in order to provide a platform for supervisors to meet and regularly share technological expertise and experiences from engagement with firms, and to reach common views on the regulatory treatment of innovative products.

[75] European Banking Authority (n 57) 34.

[76] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC [2015] OJ L 337/35. See Oscar Borgogno and Giuseppe Colangelo, 'Data, Innovation and Transatlantic Competition in Finance: The Case of the Access to Account Rule', (2020) 31 European Business Law Review 573.

[77] UK Competition and Markets Authority, 'The Retail Banking Market Investigation Order 2017', (2017) <https://www.gov.uk/government/publications/retail-banking-market-investigation-order-2017> accessed 20 February 2020.

[78] Euro Banking Association, 'Understanding the Business Relevance of Open APIs and Open Banking for Banks', (2016) <https://www.abe-eba.eu/media/azure/production/1522/business-relevance-of-open-apis-

environment, customers can easily perform banking activities with different providers, relying on a single online app to collect all the data necessary to manage their finances, bringing together payment accounts and other products like mortgages, pensions and investments.

The way paved by the EU and the UK has been recently embraced by other regulators that expressed interest in developing frameworks that put consumers in control of their account data by means of standardised APIs. In particular, the Australian Government Productivity Commission recommended the adoption of an Open Banking regime that gives consumers access to their data, with the capacity to see that data moved from one provider to another.[79] Following this path, the new Australian Consumer Data Right introduced a wide data portability right, which will firstly be applied to the banking sector, and the Australian Competition and Consumer Commission enacted the rules requiring the four major banks to share product reference data (which includes information such as interest rates, fees and charges, and eligibility criteria for banking products like credit cards and mortgages) with accredited data recipients.[80] By the same token, the Mexican FinTech Law (*Ley de Instituciones de Tecnología Financiera*), that came into force on 10 March 2018, requires financial entities and FinTech institutions to establish APIs to allow, with the prior consent of users, connectivity and access to interfaces developed or managed by other financial entities and FinTech players. In the same vein, the Canadian Competition Bureau has invited policy makers to take significant steps to welcome FinTech by enacting broader open access regimes to financial data through APIs.[81] As a result, the Canadian Minister of Finance appointed an Advisory Committee to guide the Government's review into the merits of Open Banking.[82] Furthermore, in 2017 Japan amended the Banking Act to promote open innovation, enabling FinTechs to access financial institution systems via API connection. In the same vein, the Hong Kong Monetary Authority launched the Open API Framework in 2018, providing specific guidance to enable collaboration between banks and third-party service providers, and the Monetary Authority of Singapore published an API Playbook and set up an API register to encourage banks to open up their systems. Finally, also Brazil is following suit with an

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and-open-banking-for-banks.pdf> accessed 5 March 2020; Euro Banking Association, 'Open Banking: Advancing Customer-Centricity. Analysis and Overview', (2017) <https://www.abe-eba.eu/media/azure/production/1355/eba_open_banking_advancing_customer-centricity_march_2017.pdf> accessed 5 March 2020; UK Open Banking Working Group, 'Unlocking the potential of open banking to improve competition, efficiency and stimulate innovation', (2016) <http://dgen.net/1/The-Open-Banking-Standard.pdf> accessed 5 March 2020.

[79] Australian Government Productivity Commission, 'Competition in the Australian Financial System', (2018) Report No 89, <https://www.pc.gov.au/inquiries/completed/financial-system/report> accessed 22 February 2020.

[80] Australian Competition and Consumer Commission, 'Competition and Consumer (Consumer Data Right) Rules 2020', (2020) <https://www.accc.gov.au/media-release/consumer-data-right-rules-made-by-accc> accessed 5 March 2020.

[81] Canadian Competition Bureau, 'Technology-led innovation and emerging services', (2017) <https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04315.html> accessed 5 March 2020.

[82] Government of Canada, 'Consumer-directed finance: the future of financial services', (2019) <https://www.canada.ca/en/department-finance/programs/consultations/2019/open-banking/report.html> accessed 10 March 2020. See also Advisory Committee to the Open Banking Review, 'A Review into the Merits of Open Banking', (2019) <https://www.canada.ca/en/department-finance/programs/consultations/2019/open-banking.html> accessed 10 March 2020.

Open Banking regulation that will be implemented gradually, from November 2020 to October 2021.[83]

The flourishing of Open Banking is aimed at transforming the relationship of consumers with financial intermediaries. Indeed, Open Banking implies a new kind of business ecosystem characterised by the widespread use of data-enabled services to deliver innovative and more competitive services to consumers. The EU and UK regulations share a narrow scope as their scope covers only payment accounts. Nonetheless, their underlying rationales and principles could be applied beyond banking, enabling consumers across markets to share their data with different providers in a secure, ongoing and standardised format.[84] Not surprisingly, UK already committed to taking stock of this approach by leading the debate on Open Finance.[85] This concept refers to the extension of third-party access and open banking-like data sharing mechanisms to a wider range of financial sectors and products (such as mortgages, insurance, savings, consumer credit, pensions and investments).

4. Towards a pro-competitive regulation.

Despite the enthusiasm showed by policy makers and scholars about innovation facilitators' ability to harness the potential of FinTech, their actual impact on the industry is largely yet to be seen.[86] Rather than being truly revolutionary, sandboxes and innovation hubs seem an appealing repackaging of the principle of proportionality traditionally applied by regulators when dealing with new business methods and services.[87] They are going to be useful only as long as there is a market demand for new services.[88] Furthermore, according to what we may call a legal marketing perspective, they may just reflect the need felt by national jurisdictions of appearing dynamic and open to innovation in order to attract investments and promising businesses.

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[83] See Banco Central do Brasil, 'Regulation on Open Banking', (2020) Joint Resolution No. 1 <https://www.bcb.gov.br/content/config/Documents/Open_Banking_CMN_BCB_Joint_Resolution_1_2020.pdf> accessed 6 June 2020; and 'Disciplines the scope of data and services of Open Banking', (2020) Circular No. 4,015 <https://www.bcb.gov.br/content/config/Documents/Open_Banking_BCB_Circular_4015_2020.pdf> accessed 6 June 2020. In April 2019, the Brazilian Central Bank disclosed the fundamental requirements for the implementation of Open Banking by means of the Communiqué 33,455 (<https://www.bcb.gov.br/content/config/Documents/BCB_Open_Banking_Communique-April-2019.pdf> accessed 6 June 2020).

[84] John Fingleton, 'From Open Banking to Open Everything', (2018) <https://medium.com/fingleton/from-open-banking-to-open-everything-3072079b7c58> accessed 5 March 2020.

[85] See Financial Conduct Authority, 'Call for Input: Open finance', (2019) <https://www.fca.org.uk/publication/call-for-input/call-for-input-open-finance.pdf> accessed 15 March 2020, setting up an external advisory group to drive forward the discussion about this new regulatory strategy.

[86] For instance, as highlighted by Buckley, Arner, Veidt, and Zetzsche (n 53), the first sandbox experience in the UK has reached only a truly tiny portion of the total number of financial services firms, a significant share of which are now either in liquidation or insolvent.

[87] European Banking Authority (n 32) 9-10.

[88] See Arner, Barberis, Buckley, and Zetzsche (n 1) 102-103, arguing that regulatory flexibility cannot substitute for demand or for a sound business model.

In recent years, legal marketing has arguably emerged as a key driver of regulatory activity around the world. Following the British example, several jurisdictions have opted for setting innovation-friendly regulatory environments for businesses and start-ups. It should not come as a surprise then that FinTech has gained central stage for testing these new tools. Against this backdrop, it is of the utmost importance to distinguish what is truly innovative and far-reaching from modest attempts to embellish national economies. This does not mean that innovation facilitators should be dismissed, but it must be acknowledged that they are not going to radically impact the substance of current regulatory practices or the evolutionary trends of financial markets.

Conversely, the Open Banking experience is worthy of consideration as it represents a bold leap into new regulatory avenues. By setting forth rules of access to data with the goal of allowing market entry by new players and giving central stage to regulators in overseeing their implementation, European regulators acted as frontrunners in defining a radically new approach to FinTech. Rather than playing catching up with new market trends and technology firms requests, this pro-competitive paradigm mandates for laying down a legal framework that lowers entry barriers according to the specific needs of each industrial sector. Indeed, the underlying goal of the regulatory measures enshrined in the PSD2, in the Australian intervention and in the UK Open Banking and Open Finance projects is to enable smooth data sharing between firms in order to tackle consumer inertia, thereby stimulating competition and innovation.[89]

In its very essence, the pro-competitive paradigm presents two key features that distinguish it in terms of originality and economic impact from old-fashioned toolkits. First, under this approach, policy makers together with regulators develop specific regulatory solutions to specific market problems (such as data bottleneck and consumer stickiness in the banking sector). Accordingly, market players are free to make use of these rules in order to develop new services, products and business methods. Second, regulators are mandated with the task of overseeing the implementation of these regulatory mechanisms tailored on the needs of FinTech development. Their intervention is crucial to ensure that incumbents or firms holding market power do not exploit these new measures to outsmart new entrants and supervisors. At the same time, regulators are not required to engage tightly with firms in order to help them in developing new products and services. By leaving this task to market participants, we avoid undue confusion between public authorities and businesses. As a result, this approach allows to circumvent the risks of regulatory capture and misleading signals to consumers and competitors posed by innovation facilitators.

Admittedly, pro-competitive regulation should not be regarded as a substitute for regulatory sandboxes or innovation hubs. They could perfectly complement each other, as the former is an ex ante intervention whereas the latter are ex post forms of public counselling offered to firms. However, the pro-competitive paradigm is better suited to address the cross-sectional issues concerning FinTech development and, more broadly, technology-led market innovation. Indeed, this new approach requires regulators and

[89] Borgogno and Colangelo (n 20).

policy makers to work side-by-side in order to shape sector-specific regulatory instruments that can unlock competition and innovation while avoiding spillover effects on consumer welfare and financial stability. On the contrary, innovation facilitators can only carry out a marginal task by increasing regulators' understanding of new technologies and nudging them to make full use of the proportionality principle when dealing with new services and business methods.[90]

5. Conclusion.

The increasing pace of FinTech development has triggered a worldwide race among policy makers to overhaul their own regulatory landscape in order to be as innovation friendly as possible.[91] Consequently, a vast array of new tools and regulatory practices have emerged over recent years, threatening to disrupt traditional approaches to regulation. This raises the need to figure out the true potential of each allegedly new practice so as to avoid any confusion between original, far-reaching avenues of market regulation and rebranding of old ideas prompted by legal marketing considerations.

We put these newly arisen tools into a systematic framework by distinguishing three different, but not mutually alternative strategies. First, the *laissez-faire* approach leaves firms free to develop and make use of FinTech breakthroughs under the ordinary regulatory framework. This strategy does not entail a passive attitude towards digital innovation in financial markets as regulators have to be watchful through continued oversight of the industry in order to target any potential risk ahead of time. Second, functional regulation calls for enacting the same regulatory response to all economic activities raising identical risks. Despite the reasonableness of this strategy, we cautioned against a too rigid implementation which could hinder positive innovation for the sake of misleading uses of the level playing field objective. Third, the tailored regulatory strategy requires public authorities to identify the original features of specific market developments and accordingly design pieces of regulation, tailored on such new technology-enabled functionalities. This strategy represents the Pandora's box from which the largest part of new regulatory measures involving FinTech is stemming.

The article screened the structure and effective functioning of the two most deployed tools that have surfaced so far, namely regulatory sandboxes and innovation hubs. The first are worthy of consideration as they allow to evaluate services and business methods with reduced risk of regulatory exposure. However, policy makers need to be aware that transparency and business neutrality are key to avoid any backfire on legal certainty and efficiency. The last should be understood as privileged points of interaction between regulators and firms willing to overcome regulatory doubts. Their greatest asset is also their biggest weakness, as the case-by-case and cross-sectional nature of hubs is

[90] Hilary J Allen, 'Regulatory Sandboxes', (2019) 87 The George Washington Law Review 579.

[91] However, see Saule T. Omarova, 'Technology v Technocracy: Fintech as a Regulatory Challenge', Journal of Financial Regulation (forthcoming), highlighting a fundamental tension since, while in the FinTech era, the financial system as a whole is growing ever bigger, moving ever faster, and getting ever more complex and difficult to manage, the emerging regulatory responses (ie sandboxes, special charters, and technological improvements in regulatory processes) to these macro-level changes continue to operate primarily on the micro-level. According to the Author, FinTech's principal impact appears not merely as a mechanical sum of various regulatory 'gaps' but as a fundamental structural challenge to the very paradigm of modern financial regulation.

extremely time consuming for sector specific regulators that have to engage in complex and time-consuming preliminary work to provide effective answers. Overall, these innovation facilitators are corollaries of the classic principle of proportionality that has permeated into administrative activity for decades. Most of the excitement surrounding them is due, indeed, to legal marketing considerations rather than to a truly original character.

Building on this systematisation of current regulatory strategies, we presented "pro-competitive regulation" as a new, far-reaching paradigm that promises to unlock the competitive and innovative potential of FinTech. By drawing on the experience of the PSD2 in the EU, the Open Banking and Open Finance projects in the UK, and similar measures recently enacted in Australia, Canada and in South East Asia countries, we focused attention on the data access rule introduced in the financial sector to lower entry barriers for FinTech firms and tackle consumer inertia. While acknowledging the need to avoid any early excitement about their success as they are still under implementation, we praised them as regulatory measures, specifically tailored to curb FinTech market failures in a coherent and original way.

Rather than requiring regulators to engage in mammoth tasks (such as offering general counselling to market participants in the process of product design and implementation), the pro-competitive paradigm focuses on ex ante regulation in order to lay down regulatory mechanisms able to open up the market to new entrants. It will be up to them to make use of these tools to develop and test innovative services and business methods in the market. Against this backdrop, innovation facilitators are set to perform the marginal (yet useful) task of helping regulators to adjust current rules according to the principle of proportionality.