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Regulating FinTech: Lessons from Africa

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Regulating FinTech: Lessons from Africa

ANTON DIDENKO*

TABLE OF CONTENTS

I.	ABSTRACT	313
II.	INTRODUCTION	314
III.	METHODOLOGY	316
IV.	THE MEANING OF FINTECH	317
	A. <i>What is FinTech?</i>	317
	B. <i>Introduction to FinTech Regulation</i>	319
	C. <i>Feasibility of Dedicated FinTech Regulation</i>	323
V.	REGULATING FINTECH: UNDERLYING CHALLENGES	326
	A. <i>FinTech Regulation: Four Key Questions</i>	327
	1. <i>What is the Overall Objective of FinTech Regulation?</i>	327
	2. <i>Regulate Now or “Wait and See”?</i>	329
	3. <i>Which FinTech Areas Require Priority in Terms of Regulatory Attention?</i>	331
	4. <i>Are the Key Challenges Internal (Domestic) or External (International)?</i>	332
	B. <i>Challenges to FinTech Regulation</i>	333

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1.	<i>FinTech Regulation and the Rule of Law</i>	333
2.	<i>Rule of Law Challenges</i>	333
a.	<i>The Need for Legal Clarity, Certainty and Predictability</i>	333
1.	<i>Regulatory Fragmentation and Regulatory Arbitrage</i>	333
2.	<i>Uncertainty About Where New Projects Fall in the Existing Regulatory System</i>	334
3.	<i>Lack of Clear and Accessible Regulatory Guidance/Lack of Communication from the Regulator</i>	336
4.	<i>Lack of International Coordination</i>	336
5.	<i>Rapid Development of Technology</i>	338
6.	<i>FinTech Diversity</i>	338
b.	<i>Unequal Treatment</i>	339
1.	<i>Legislation/Regulation Favors Certain Participants</i>	339
2.	<i>Balancing Risk and Reward of Regulation</i>	339
3.	<i>Selecting Technologies and Sectors Eligible for Regulatory Support</i>	340
4.	<i>Access to Existing Infrastructure</i>	340
5.	<i>Preferential Treatment/Participation in Regulatory Sandboxes</i>	340
c.	<i>Limits on the Exercise of Power</i>	341
1.	<i>Regulator's Mandate and Authority to Regulate FinTech</i>	341
3.	<i>Other Regulatory Challenges</i>	341
a.	<i>Protecting End-Users</i>	341
1.	<i>Investor/Service Provider Accreditation</i>	341
2.	<i>Fraud Prevention</i>	342
b.	<i>Ancillary Laws/Regulations</i>	342
1.	<i>Ensuring Ease of Doing Business</i>	342
2.	<i>Data Privacy and Data Protection</i>	343
3.	<i>Know Your Customer/Anti-Money Laundering/Countering the Financing of Terrorism Requirements</i>	343
c.	<i>Organizational Matters</i>	344
1.	<i>Decentralized Nature of Fin-Tech</i>	344
2.	<i>Holdout Start-Ups</i>	344
3.	<i>Catching Up with the Development of Technology and Timely Identification of Systemic Risks</i>	344
4.	<i>Adjustment of Existing Laws</i>	345
5.	<i>Insufficient Intra-State Cooperation Among Regulators</i>	346
6.	<i>Lack of International Regulatory Coordination</i>	346
VI.	GLOBAL TRENDS IN FINTECH REGULATION.....	346
VII.	REGULATION OF FINTECH IN KENYA AND SOUTH AFRICA	350
A.	<i>Kenya and South Africa as Key FinTech Jurisdictions in the Region</i>	350

1.	<i>The Role of FinTech in Sub-Saharan Africa</i>	350
2.	<i>Kenya and South Africa as Regional FinTech Centers</i>	352
B.	<i>Some Observations Relating to FinTech Regulation in Kenya and South Africa</i>	353
1.	<i>General Observations for Both Kenya and South Africa</i>	353
a.	<i>No Uniform Approach to Defining FinTech</i>	353
b.	<i>No Centralized Approach to FinTech Regulation</i>	353
c.	<i>No Single Regulatory Policy on FinTech</i>	354
d.	<i>Interest in FinTech Sandboxes</i>	354
e.	<i>Potential for New Principles-Based Regulation</i>	354
f.	<i>Cybercrime Risks</i>	355
2.	<i>South Africa</i>	356
a.	<i>Social and Economic Impact Assessment</i>	356
b.	<i>Legal Status of Virtual Currencies</i>	357
c.	<i>Mobile Money Regulation</i>	359
d.	<i>Crowdfunding Regulation</i>	359
e.	<i>Organizational Matters</i>	360
3.	<i>Kenya</i>	361
a.	<i>Mobile Money</i>	361
b.	<i>Regulate or “Wait and See”</i>	362
c.	<i>Virtual Currencies</i>	363
d.	<i>Crowdfunding Regulation</i>	363
e.	<i>Organizational Matters</i>	364
C.	<i>Suggestions for Developing FinTech Regulation in Kenya and South Africa</i>	364
VIII.	CONCLUSION	368

I. ABSTRACT

Technological innovation in finance (“FinTech”) has been on the rise in recent years, creating new challenges for regulators. These challenges vary significantly depending on the region in question and type of economy, not least because different technologies are applied to tackle different problems. This Article focuses on regulatory frameworks of two leading jurisdictions in terms of FinTech development in Sub-Saharan Africa: Kenya and South Africa. As the developments in the region cannot be analyzed in isolation from the global trends in FinTech regulation, this Article approaches the matter systematically. It starts by clarifying the existing terminology and preparing a comprehensive matrix of various challenges in FinTech regulation: in doing so, it does not take the interests of innovation promotion for granted and adopts a balanced approach, weighing various—often mutually exclusive—considerations against each other. This

Article also argues that rule of law challenges, rather than technical problems, remain the key obstacles to adequate FinTech regulation. It then proceeds to discuss the specific regulatory issues in two African jurisdictions that are current regional leaders in the FinTech space—Kenya and South Africa. Finally, this Article concludes by synthesizing a set of recommendations for improving the FinTech regulatory systems in the two countries, in the light of the earlier matrix of regulatory challenges. Many findings in this Article (such as the need for improved methodology of social and economic impact analyses and various policy considerations for structuring the FinTech regulation) are relevant outside the African context and have universal application.

II. INTRODUCTION

In recent years, FinTech has become a popular catch-all term for technology-enabled financial solutions like cryptocurrencies, mobile money or online lending platforms. FinTech's distinguishing features include: (1) the different (technology-based) nature and speed of innovation, (2) disintermediation and disruption of traditional methods of delivery of financial services, (3) convergence of various (e.g. financial and telecommunications) industries, (4) relatively low costs and barriers to entry, and (5) borderless operation and ability to cross national boundaries with ease.¹

The amount of global investment in FinTech has been growing rapidly in recent years. A recent report suggests that already more than 50% of all customers globally are using at least one FinTech firm.² The overall volume of investments in FinTech fluctuates (it dropped from USD 46.7 billion in 2015 to USD 24.7 billion in 2016,³ then rose to USD 31 billion in 2017⁴), but remains significant. Over the last four years, the compound

1. See Chris Brummer & Daniel Gorfine, *FinTech: Building a 21st-Century Regulator's Toolkit*, MILKEN INSTITUTE CENTER FOR FINANCIAL MARKETS 4–6 (Oct., 2014), <http://assets1b.milkeninstitute.org/assets/Publication/Viewpoint/PDF/3.14-FinTech-Reg-Toolkit-NEW.pdf> [<https://perma.cc/W5F9-H344>].

2. *World FinTech Report 2017*, CAPGEMINI & LINKEDIN 12 (2017), https://www.capgemini.com/wp-content/uploads/2017/09/world_fintech_report_2017.pdf [<https://perma.cc/U7DK-SECZ>].

3. *The Pulse of FinTech Q4 2016: Global Analysis of Investment in Fintech*, KPMG 4 (2017), <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2017/02/pulse-of-fintech-q4-2016.pdf> [<https://perma.cc/CB8P-Z82N>].

4. *The Pulse of FinTech Q4 2017: Global Analysis of Investment in Fintech*, KPMG 5 (2018), https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2018/02/pulse_of_fintech_q4_2017.pdf [<https://perma.cc/D92Y-BWDS>].

annual growth rate of funding of FinTech start-ups alone exceeded 40%, reaching over USD 40 billion in cumulative investment.⁵

FinTech, like any new financial, technological and legal reality, is inherently disruptive for any system of law. In many cases, it does not fit easily into the existing regulatory framework and challenges the regulators to produce an appropriate response. The adequacy and timeliness of such legal response determine not only the viability of the FinTech solution, but also its potential impact and capacity to contribute to positive social change. Quite often, however, regulatory feedback to financial innovation is incomprehensible, inconsistent or comes too late.

As a result, the development of adequate FinTech-specific rules has become a challenge for regulators all over the world, with widely differing approaches across jurisdictions. In Sub-Saharan Africa, the new technologies, like mobile money, have greatly improved the levels of financial inclusion, reducing the proportion of the unbanked population.⁶ At the same time, while FinTech presents new opportunities, the number of highly successful FinTech businesses across the region remains low. In addition, new technologies are not adopted evenly. The same FinTech solution may struggle to achieve sufficient local demand in some jurisdictions (e.g. Vodacom's and MTN's mobile money platforms in South Africa), while gaining overwhelming support in others (e.g. Safaricom's M-Pesa in Kenya).

A full-scale analysis of the complex matter of FinTech regulation across Sub-Saharan Africa in a single paper would be unrealistic. Therefore, this Article will focus on the regulatory frameworks of two leading jurisdictions in terms of FinTech development in the region: Kenya and South Africa. However, the developments in these two countries cannot be analyzed in isolation from the global trends in FinTech regulation. This Article's objectives are thus threefold: (1) to identify the types of challenges faced by regulators around the world in addressing FinTech, (2) to examine the FinTech regulatory frameworks in Kenya and South Africa, revealing the challenges specific to these jurisdictions, and (3) to suggest practical recommendations for the development of these frameworks.

5. *Redrawing the Lines: FinTech's Growing Influence on Financial Services: Global FinTech Report 2017*, PWC 3 (2017), <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2017.pdf> [<https://perma.cc/329R-B7MM>].

6. See Nick Hughes & Susie Lonie, *M-PESA: Mobile Money for the "Unbanked" Turning Cellphones into 24-Hour Tellers in Kenya*, 2 INNOVATIONS: TECH., GOVERNANCE, GLOBALIZATION, no. 1-2 63, 63 (2007).

III. METHODOLOGY

The research of this Article is based on the analysis of existing literature on the subject, as well as interviews and roundtable discussions with various stakeholders in the FinTech space in Kenya and South Africa.⁷ This study is supported and informed by the most recent developments in the area of FinTech regulation in Africa and across the globe, including reports and studies produced in 2017 and early 2018. While the overall focus is on the regulation in Kenya and South Africa due to their leading status as FinTech centers in Sub-Saharan Africa, this Article does tackle a number of relevant issues outside that region. The general issues addressed in this Article include: (1) a discussion on the meaning of FinTech in Part IV, (2) the analysis of various challenges in FinTech regulation, with a particular focus on rule of law issues, in Part V, (3) the list of global trends in FinTech regulation in Part VI, and (4) several of the suggestions in Part VII.

In this Article, “regulation” is understood in the broad sense as formal and binding rules made by a government or other authority (whether domestic or international) in order to control the way something is done, or the way people behave. This definition implies that “regulators” are not limited to governmental offices, departments and agencies, but also include legislatures and, where sufficient authority has been transferred to a supranational level, the duly authorized international bodies. At the same time, the reference to “formal and binding” rules means that any informal regulatory measures (such as industry self-regulation or market forces and customs) are excluded. Consequently, entities that lack the power to issue binding rules (such as non-governmental international organizations) are not considered “regulators” for the purposes of this Article.

In light of the objectives and methods discussed above, the remainder of this Article is structured as follows. Part IV provides an overview of the concept of FinTech and discusses the feasibility of developing dedicated FinTech-specific regulation. Part V outlines the key approaches to FinTech regulation and summarizes the main underlying challenges. Part VI lists the current global developments in the regulation of FinTech. Part VII contains a more detailed discussion of the various challenges and trends in the regulation of FinTech in Sub-Saharan Africa, focusing on Kenya and South Africa, and suggests a number of measures that can be

7. This Article does not contain a comprehensive overview of the FinTech regulation in the selected jurisdictions. Rather, the highlighted challenges and regulatory instruments were selected as illustrative examples based on our discussions with the various stakeholders and the analysis of existing literature.

used to improve the existing legal regime. The Conclusion contains some general observations from the conducted research.

IV. THE MEANING OF FINTECH

A. *What is FinTech?*

The financial services sector is a common adopter of new technologies. However, the understanding of what can be characterized as “new technology” has significantly changed over time. In the nineteenth century, the telegraph and the underwater transatlantic cables created the critical infrastructure for global financial communications, while half a century ago the introduction of automatic teller machines (“ATMs”) revolutionized some routine bank processes.⁸ Technological innovation is not a recent development in the world of finance.⁹

The term “FinTech”, on the contrary, is relatively new: some authors trace its origins back to the 1990s,¹⁰ while others have found references to this word as early as 1972.¹¹ Despite its common use in the modern world of finance, FinTech¹² as a concept has not been uniformly understood. Over the recent years, different interpretations have attempted to capture its meaning.

One popular approach is to broadly define FinTech as a form of integration of technology into the area of financial services.¹³ However, since such

8. Douglas W. Arner, János Barberis & Ross P. Buckley, *The Evolution of FinTech: A New Post-Crisis Paradigm*, 47 GEO. J. INT'L L. 1271, 1274 (2016).

9. Some authors view the term “technology” broadly and include even the introduction of the first currency and writing materials. See, e.g., Brian Knight, *FinTech: Who Regulates It and Why It Matters*, MILKEN INSTITUTE CENTER FOR FINANCIAL MARKETS 1 (Apr. 2016), <http://assets1c.milkeninstitute.org/assets/Publication/Viewpoint/PDF/FinTech-Who-Regulates-It-and-Why-It-Matters2.pdf> [<https://perma.cc/8WZR-MBL4>]. According to this approach, the history of integration of technology in finance counts several millennia.

10. Arner, Barberis & Buckley, *supra* note 8, at 1272.

11. In a 1972 article by Abraham Leon Bettinger FinTech was defined as “an acronym which stands for financial technology, combining bank expertise with modern management science techniques and the computer.” See Patrick Schueffel, *Taming the Beast: A Scientific Definition of Fintech*, 4 J. INNOVATION MGMT. 32, 36 (2016).

12. Similar terms have been developed to refer to the various applications of technology in other sectors: HealthTech, InsurTech, RegTech, etc.

13. According to a study by the World Economic Forum, FinTech refers to “companies that provide or facilitate financial services by using technology.” See WORLD ECON. FORUM, *The Future of FinTech: A Paradigm Shift in Small Business Finance* 10 (Oct. 2015), http://www3.weforum.org/docs/IP/2015/FS/GAC15_The_Future_of_FinTech_Paradigm_Shift_Small_Business_Finance_report_2015.pdf [<https://perma.cc/6PD6-CGPV>]. Koffi describes FinTech as “intersection between finance and technology.” See Hua Wifried

integration has existed in one form or another for at least 150 years, FinTech could refer to any application of technology to finance, from telegraphic transmissions to virtual currencies.¹⁴ FinTech is commonly used today to refer to the more recent technological advancements in finance, such as online peer-to-peer lending platforms or automated robo-advisory¹⁵ services; therefore, this definition might be overly inclusive.

Another approach is to give the term a more specific meaning in an attempt to avoid confusion—for example, by reference to the “innovative” or “disruptive” effects or application of the new technology.¹⁶ In this capacity,

Serge Koffi, *The Fintech Revolution: An Opportunity for the West African Financial Sector*, 6 OPEN J. APPLIED SCI. 772. Arner, Barberis and Buckley similarly define FinTech as “application of technology to finance.” See Arner, Barberis & Buckley, *supra* note 8, at 1274.

14. In its report on virtual currency schemes, the European Central Bank (“ECB”) defines virtual currencies as “a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community.” See EUROPEAN CENT. BANK, VIRTUAL CURRENCY SCHEMES 13 (2012), <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf> [<https://perma.cc/C6JG-XA74>]. In 2015, the ECB revised its approach by getting rid of the word “money” as well as references to the “unregulated” status and defined virtual currencies differently, as “a digital representation of value, not issued by a central bank, credit institution or e-money institution, which, in some circumstances, can be used as an alternative to money.” See EUROPEAN CENT. BANK, VIRTUAL CURRENCY SCHEMES: A FURTHER ANALYSIS 25 (2015), <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf> [<https://perma.cc/5WTU-NJ6Q>].

15. Robo-advisory services are automated investment advisory (portfolio management) services operating with little or no human intervention. See *The Rise of Robo-Advice: Changing the Concept of Wealth Management*, ACCENTURE, https://www.accenture.com/_acnmedia/PDF-2/Accenture-Wealth-Management-Rise-of-Robo-Advice.pdf [<https://perma.cc/39F5-5RRC>]; *Robo-Advisors: The Rise of Automated Financial Advice*, IPSOS (July 2017), https://www.ipsos.com/sites/default/files/2017-07/IpsosMarketing_POV_Robo_Advisors.pdf [<https://perma.cc/659A-5RYQ>]. In a recent study the mechanics of a robo-advisory service were described as follows: “once you enroll for the service, you enter your risk profile and, using advanced algorithms, the platform offers alternative personalized investment portfolios for you to choose from . . . and continues to rebalance your portfolio as required . . . digitally (online or mobile), without you having to talk to a live person.” See *Hype vs. Reality: The Coming Waves of “Robo” Adoption*, A.T. KEARNEY 2 (2005), <https://www.atkearney.co.uk/financial-institutions/robo-advisory-services-study> [<https://perma.cc/558J-7TSR>].

16. Bunea, Kogan and Stolin refer to FinTech as a “shorthand for technological innovations in finance and/or for the business sector comprised of firms that enable such innovations.” See Sinziana Bunea, Benjamin Kogan & David Stolin, *Banks Versus FinTech: At Last, It’s Official*, SLIDESHARE 3, <https://www.slideshare.net/AlexanderJarvis/banks-vs-fintech-at-last-its-official> [<https://perma.cc/GN3Z-7HG3>]. According to Lee and Teo, “FinTech refers to innovative financial services or products delivered via new technology.” See David Lee Kuo Chuen & Ernie G.S. Teo, *Emergence of FinTech and the LASIC Principles*, 3 J. FIN. PERSPECTIVES: FINTECH 2, 4, (2015), <https://fsinsights.ey.com/dam/jcr:a64c713c-7bb9-42bd-ba45-afafcb1fe103/emergence-of-fintech.pdf> [<https://perma.cc/F6YS-JJSM>]. Philippon states that “FinTech covers digital innovations and technology-enabled business model innovations in the financial sector.” See Thomas Philippon, *The FinTech Opportunity 2* (July 2016), <http://pages.stern.nyu.edu/~tphilipp/papers/FinTech.pdf> [<https://perma.cc/E2J2-ZSB6>].

FinTech stands for technologies which add novelty to the existing financing instruments and processes. This implies a certain *qualitative difference* between the “old” financing models and products on the one hand, and the “new” solutions resulting from the application of technology on the other. This approach is also problematic, however, since the solutions labelled as “old” will not always be the same in all jurisdictions and will vary depending on the period in question. It is also unclear which technological solutions are deemed “innovative” enough to fall into the FinTech category, since novelty is a relative criterion.

The problem of defining FinTech has recently formed the basis of a dedicated study, which revealed the lack of a common understanding of this term even at a basic conceptual level; various sources refer to it as a sector, an industry, a technology, a business or a set of activities.¹⁷ This study produced the following generic formula based on the synthesis of commonalities in the other existing definitions: “Fintech [*sic*] is a new financial industry that applies technology to improve financial activities.”¹⁸ Although this definition attempts to consolidate the different approaches into one, it—just like the other existing definitions—remains rather vague; it is unclear what exactly makes FinTech an industry, what can be considered an “improvement” in financial activities, or even what is a “financial activity.”

B. Introduction to FinTech Regulation

However defined, FinTech forms part of the financial services sector—an area that has traditionally attracted significant regulatory attention and is often associated with comprehensive regulatory oversight. Despite this, regulators across the globe are increasingly developing new approaches to tackle FinTech. While a “hands-off” tactic is certainly possible, several reasons justify the creation of FinTech-specific rules:

17. Schueffel, *supra* note 11, at 45.

18. *Id.*

1. Existing regulatory regimes often do not support the new FinTech products and business models. For example, distributed ledger technology (“DLT”)¹⁹ may be used by the financial services providers not only to enhance existing internal processes (in which case the regulatory implications might be minimal), but also to change or replace the overall set-up of market participants and infrastructures, creating entirely new risks;²⁰
2. FinTech solutions allow easy access to financial services to unsophisticated parties who may require additional protection (e.g. investments and transactions in virtual currencies);²¹
3. Regulators need to develop new (and alter the existing) regulatory approaches to cope with the fast-paced developments in the financial services sector resulting from FinTech (e.g. in case of rapid growth of online lending platforms);²²
4. FinTech may decentralize, disintermediate, and, to a certain degree, anonymize the delivery of financial services, which may force some regulators to develop new ways of exercising “domestic”

19. DLT is a technology based on records (“ledgers”) of electronic transactions kept in a shared, i.e., decentralized (“distributed”), network of participants and utilizing computer-based encryption techniques. See ESMA, *Report: The Distributed Ledger Technology Applied to Securities Markets 4* (2017), https://www.esma.europa.eu/system/files_force/library/dlt_report_-_esma50-1121423017-285.pdf [<https://perma.cc/KAQ2-EE8A>].

20. *Id.* at 5, 18.

21. As explained in a recent report by the UK Financial Markets Law Committee (“FMLC”), “[v]irtual currency transactions, owing to their technological nature, are irreversible and offer no legal protections for consumers against human error.” Consequently, consumers “do not have the benefit of the most common forms of redress in cases of financial loss, mistake or fraud because e-wallet providers, exchanges and trade platforms are not regulated and do not have a physical presence.” FIN. MARKETS LAW COMM., *ISSUES OF LEGAL UNCERTAINTY ARISING IN THE CONTEXT OF VIRTUAL CURRENCIES* 18 n.34 (2016), http://www.fmlc.org/uploads/2/6/5/8/26584807/virtual_currencies.pdf [<https://perma.cc/M43W-UJ4W>].

22. Such growth can be observed in China, where the instances of fraud and mismanagement in the field of online lending have signaled the need for regulatory intervention. See WORLD ECON. FORUM, *The Complex Regulatory Landscape for FinTech: An Uncertain Future for Small and Medium-Sized Enterprise Lending*, GEO. UNIV. CTR. FOR FIN. MARKETS & POLICY WHITE PAPER 24 (Aug. 2016), http://www3.weforum.org/docs/WEF_The_Complex_Regulatory_Landscape_for_FinTech_290816.pdf [<https://perma.cc/TW2Q-CNYG>]. A prominent example is the scandal involving the once largest peer-to-peer lending platform Ezubao, which turned out to be a Ponzi scheme that had collected almost 60 billion yuan (over USD 9 billion) from more than 900,000 investors. In September 2017, a Beijing court sentenced 27 participants in the fraudulent scheme to various terms in jail, including two life sentences. See *Leader of China’s \$9 Billion Ezubao Online Scam Gets Life; 26 Jailed*, REUTERS (Sept. 12, 2017), <https://www.reuters.com/article/us-china-fraud/leader-of-chinas-9-billion-ezubao-online-scam-gets-life-26-jailed-idUSKCN1BN0J6> [hereinafter *Ezubao Online Scam*] [<https://perma.cc/JYF7-YF7T>].

control and oversight²³ (e.g. various applications of DLT, including smart contracts).²⁴

The opportunities offered by FinTech have been used by some commentators as the basis for predicting a possible end to existing banking practices and have prompted calls for a totally new approach to regulation:

Restoring a functioning financial system in the digital age requires a fundamental overhaul of financial regulation. If regulators do not progress to the digital age, our financial system will remain in its current dysfunctional state.²⁵

In many situations, FinTech-specific regulatory measures are limited to clarifying the existing law as it applies in the context of new technologies, such as by adding new definitions like “virtual currencies”,²⁶ explaining the legal status of the new concepts (e.g. whether Bitcoin²⁷ is a commodity,

23. Virtual currency schemes are a good example. The European Central Bank has stressed that “the global scope that most of . . . virtual communities enjoy not only hinders the identification of the jurisdiction under which the system’s rules and procedures should eventually be interpreted, it also means the location of the participants and the scheme owner are hard to establish.” Consequently, the ECB has concluded that “governments and central banks would face serious difficulties if they tried to control or ban any virtual currency scheme, and it is not even clear to what extent they are permitted to obtain information from them.” See EUROPEAN CENT. BANK, *supra* note 14, at 42–43.

24. See also Brummer & Gorfine, *supra* note 1, at 6. On disintermediation effects of FinTech, see Chris Brummer, *Disruptive Technology and Securities Regulation*, 84 FORDHAM L. REV. 977, 1020–35 (2015).

25. Jonathan McMillan, *Banking in the Digital Age: the Failure of Financial Regulation*, THE GUARDIAN (Jan. 20, 2015), <https://www.theguardian.com/sustainable-business/2015/jan/20/finance-in-digital-age-while-regulation-stuck-in-industrial> [<https://perma.cc/Y7ED-SB9H>].

26. See *Proposal for a Directive of the European Parliament and of the Council amending Directive (EU) 2015/849 on the Prevention of the Use of the Financial System for the Purposes of Money Laundering or Terrorist Financing and amending Directive 2009/101/EC*, at art. 1(2)(c), COM (2016) 450 final (July 5, 2016) (defining virtual currencies as “a digital representation of value that is neither issued by a central bank or a public authority, nor necessarily attached to a fiat currency, but is accepted by natural or legal persons as a means of payment and can be transferred, stored or traded electronically”).

27. Bitcoin is a form of virtual currency which has no single administrator or repository. In a recent US case the mechanics of Bitcoin transactions were described as follows: “Bitcoins are held at, and sent to and from, bitcoin ‘addresses.’ A bitcoin ‘wallet’ is a software file that holds bitcoin addresses. Along with each bitcoin address, a bitcoin wallet stores the ‘private key’ for the address, essentially a password used by the holder to access the bitcoins held at the address, as well as the transaction history associated with the address. Whoever has the private key for a bitcoin address controls the bitcoins held at that address.” See *SEC v. Shavers*, No. 4:13-CV-416, 2014 U.S. Dist. LEXIS 130781, at *3 (E.D.Tex., Sept. 18, 2014).

a currency, a new type of money, or something entirely different)²⁸ or determining which regulators are authorized to address the new FinTech solutions.

In other cases, FinTech regulation ends up being more intrusive. In China, the machinations with one of the most popular lending platforms²⁹ prompted the tightening of the existing rules in 2016. Under the new rules, peer-to-peer platforms are unable to take deposits, offer wealth management services or issue asset-backed securities and are required to engage third party custodian banks.³⁰

In most cases, regulatory measures aimed at FinTech businesses do not take the form of a standalone “FinTech law” or “FinTech statute”.³¹ Instead, regulators generally try to adjust the existing legal framework to address the peculiarities of FinTech. This usually involves tackling FinTech on a product by product basis (e.g. regulating crowdfunding platforms as a form of lending activity), which consequently reduces the pressure to come up with a working definition of FinTech in the first place.

At the same time, there are instances where regulatory interventions target FinTech generally. An example is the concept of a FinTech “sandbox”, a safe supervised environment created by regulators that allows innovative businesses to test the new products and solutions prior to their full implementation.³² These sandboxes target a variety of entities and are generally not limited to a particular financial product. As a result, underlying

28. See *In re Coinflip, Inc.*, CFTC No. 15–29, 2015 WL 5535736 (Sept. 17, 2015) (explaining the U.S. Commodity Futures Trading Commission (CFTC) ruled “Bitcoin and other virtual currencies are . . . properly defined as commodities” for the purposes of the Commodity Exchange Act), *SEC v. Shavers*, 2014 U.S. Dist. LEXIS 194382, at 2 (for an example of a regulator classifying Bitcoin investments as “securities”), and I.R.S. Notice 2014–21, 2014–16 I.R.B. 938 (explaining the I.R.S. classified Bitcoin as a “property”).

29. See WORLD ECON. FORUM, *Complex Regulatory Landscape*, *supra* note 22; *Ezubao Online Scam*, *supra* note 22.

30. *China Takes Forceful Steps to Tame Unruly Peer-to-Peer Lending Sector*, REUTERS (Aug. 24, 2016), <http://www.reuters.com/article/us-china-banks-cbrc/china-takes-forceful-steps-to-tame-unruly-peer-to-peer-lending-sector-idUSKCN10Z17F?il=0> [<https://perma.cc/A6K7-HG4Y>].

31. It should be noted, however, that on March 23, 2017, a dedicated FinTech bill (the draft Financial Technology Law) was published in Mexico and made open for consultation. See Hogan Lovells, *Mexico’s Fintech Law Initiative: What You Need to Know*, HOGAN LOVELLS 33 (2017), <https://www.hoganlovells.com/~media/hogan-lovells/pdf/debt-capital-markets-global-insights/debt-capital-markets-global-insights-summer-2017.pdf> [<https://perma.cc/TEH6-NDKF>].

32. The Financial Conduct Authority (“FCA”) in the UK defines a regulatory sandbox as “a ‘safe space’ in which businesses can test innovative products, services, business models and delivery mechanisms without immediately incurring all the normal regulatory consequences of engaging in the activity in question.” See *Regulatory Sandbox*, FIN. CONDUCT AUTH. (Nov. 2015), <https://www.fca.org.uk/publication/research/regulatory-sandbox.pdf> [<https://perma.cc/HP8Y-UMJ5>].

sandbox rules tend to be broad enough to encompass most FinTech businesses. Regulators, however, when designing their sandbox rules, often avoid defining FinTech. The Financial Conduct Authority (“FCA”) in the UK, for example, avoids the term altogether, speaking of a “regulatory sandbox” instead.³³ The Monetary Authority of Singapore (“MAS”), on the contrary, uses the term “FinTech,” but defines it simply as “financial technology” without any further explanation.³⁴ The latter approach is also utilized by the Australian Securities and Investments Commission (“ASIC”).³⁵

C. Feasibility of Dedicated FinTech Regulation

In designing their response to FinTech, regulators need to be careful to avoid duplication of legal regimes, since FinTech businesses, like other businesses, continue to be governed by the rules applicable to all companies generally, as well as by the rules targeting financial services and their providers. This fact prompts an important question of identifying criteria that can be used to differentiate FinTech from any other business or activity: after all, FinTech regulation, by its nature, is merely an “add-on” to financial services regulation designed to address the specific characteristics of FinTech that require regulatory interference.

A seemingly straightforward solution would be to adopt a two-stage process: (1) devising a clear definition of FinTech, or criteria necessary and sufficient to separate this concept from any other; and (2) identifying those areas within FinTech which require regulatory intervention. However, the lack of a commonly accepted definition of FinTech in existing literature,

33. See *Regulatory Sandbox*, FIN. CONDUCT AUTH. (Feb. 14 2, 2018), <https://www.fca.org.uk/firms/regulatory-sandbox> [<https://perma.cc/2BDN-4MGT>].

34. See *FinTech Regulatory Sandbox Guidelines*, MONETARY AUTH. OF SING. 3 (Nov. 16, 2016), <http://www.mas.gov.sg/~/-/media/Smart%20Financial%20Centre/Sandbox/FinTech%20Regulatory%20Sandbox%20Guidelines.pdf> [<https://perma.cc/VHU4-JH3F>].

35. See *Testing Fintech Products and Services Without Holding an AFS or Credit Licence*, AUSTL. SEC. & INV. COMM’N 1 (Aug. 23, 2017), <http://download.asic.gov.au/media/4420907/rg257-published-23-august-2017.pdf> [<https://perma.cc/DVE4-87VY>]. More recently, another Australian regulator—the Australian Prudential Regulation Authority (“APRA”)—did provide an actual definition of FinTech in a public consultation document, but the term was used merely for illustrative purposes and was not linked to any regulatory consequences, thus eliminating the risk of providing an over- or under-inclusive definition. See *Licensing: A Phased Approach to Authorising New Entrants to the Banking Industry*, AUSTL. PRUDENTIAL REG. AUTH. 6, 11, 19 (Aug. 15, 2017), <http://www.apra.gov.au/About/APRA/Documents/Phased-licence-discussion-paper.pdf> [<https://perma.cc/8QHA-EFTT>].

which was discussed in section IV.A, shows that regulators might face difficulties even at the first stage of this process. To consider possible practical solutions, this Article will now consider two recent international consultations aimed to improve the FinTech regulatory framework, which have adopted different approaches to the problem of characterizing FinTech.

In June 2017, the Financial Stability Board (“FSB”) published a report defining FinTech as “technology-enabled innovation in financial services *that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services.*”³⁶ This definition goes beyond the generic reference to a certain mixture of finance and technology. Particularly, this definition adds further criteria to measure the novelty of innovation and its effects and seems to suggest that minimal changes to existing technology are not captured by the definition. With this approach however, the criteria used to differentiate FinTech from the other, less innovative, changes or applications of technology, are qualitative by nature and, as a result, retain an element of uncertainty. It is not entirely clear when the effect on financial services is deemed “material” enough to qualify as FinTech.

The European Commission (“EC”) approached the matter differently in its 2017 consultation paper.³⁷ On the one hand, it defined FinTech very broadly, as “technology-enabled innovation in financial services, regardless of the nature or size of the provider of the services.”³⁸ On the other hand, the EC paper differentiated between “non-disruptive FinTech,” which “triggers incremental innovation and increases efficiency,” and the so-called “disruptive FinTech” resulting in “more radical breakthroughs.”³⁹ This classification is largely grounded in the reality that technological innovation in the financial services sector is not uniform and can have very different effects, ranging in their magnitude and their potential impact on the market as a whole.⁴⁰ However, the main difference between this approach and the one adopted by the FSB is that FinTech is treated as a much broader concept, covering even the minimal innovation (the latter might not be treated as FinTech at all using the FSB terminology).

36. *Financial Stability Implications from FinTech: Supervisory and Regulatory Issues that Merit Authorities’ Attention*, FIN. STABILITY BD. 7 (June 27, 2017), <http://www.fsb.org/wp-content/uploads/R270617.pdf> [<https://perma.cc/7KPY-DRR3>] (emphasis added).

37. *FinTech: A More Competitive and Innovative European Financial Sector*, EUROPEAN COMM’N, https://ec.europa.eu/info/sites/info/files/2017-fintech-consultation-document_en_0.pdf [<https://perma.cc/34W4-4JS3>].

38. *Id.* at 4.

39. *Id.*

40. For a similar, broad approach to defining FinTech, see Koffi, *supra* note 13, at 772–73.

Both approaches are conceptually sound, as they are based on the understanding that financial innovation is a multifaceted notion. For the purposes of this Article, however, the fact that neither method has managed to provide a clear set of criteria differentiating the truly innovative solutions from the rest is of great importance. The lack of certainty can be particularly problematic in “borderline” situations, e.g. when an incumbent financial institution utilizes breakthrough artificial intelligence technologies to automate a routine procedure, such as fraud evaluation in payment transactions, which does not result in the creation of a new product or service, but merely enhances the existing processes.

The difficulties with measuring the transformative effects of innovation may suggest that development of “FinTech-specific” rules is unrealistic and that the better approach is to maintain the “standard” regulatory structure of financial services regulation built around different products and activities. However, despite the apparent difficulties, there are advantages in devising rules specifically targeting the effects of financial innovation (whether or not classified as FinTech). First, existing regulatory structures are often inflexible and may require adjustment every time a new disruptive technology is implemented. Second, some FinTech-based solutions may end up triggering multiple layers of regulation at once. For example, the so-called “initial coin offerings” (“ICOs”)⁴¹ can be simultaneously affected by rules governing cryptocurrencies and crowdfunding.

A possible solution in these circumstances is to address the diverse transformative effects of FinTech and implement a more flexible, principles-based approach.⁴² This approach may allow regulators to overcome the uncertainty surrounding the legal nature and characteristics of FinTech and instead begin focusing on the more important question: *what exactly* needs regulation? This question becomes particularly relevant in the context of new decentralized technologies (such as decentralized virtual currencies

41. An ICO is a method of raising finance for a new virtual (usually cryptographic) currency venture, whereby investors receive the newly issued virtual currency (known as “tokens”) in exchange for their investment (which can be in the form of money or even another virtual currency). See Dirk A. Zetsche et. al., *The ICO Gold Rush: It's a Scam, It's a Bubble, It's a Super Challenge for Regulators* (Univ. of Lux. Faculty of Law Econ. & Fin. Working Paper, No. 2017-011), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3072298 [<https://perma.cc/W765-R29S>].

42. See Brummer & Gorfine, *supra* note 1, at 6–7. For a discussion about principles-based regulation more generally, see, e.g., Julia Black, *The Rise, Fall and Fate of Principles Based Regulation* (LSE L., Soc'y & Econ. Working Paper No. 17/2010), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1712862 [<https://perma.cc/MD9P-3S2W>].

based on peer-to-peer networks)⁴³ that are particularly difficult to control. As in the case of the Internet, the solution might ultimately lie not in the regulation of technology as such, but rather in its application in a specific context.⁴⁴

The added benefit of this approach is its resilience in the face of further development and increasing complexity of terminology surrounding FinTech. A recent example of such development is the introduction of a new and potentially confusing term, “TechFin” to refer to a business model where non-financial businesses build relationships with existing clients, obtain massive amounts of data from them, and seek to commercialize those data via the financial services market (e.g. by selling it to financial service providers, offering financial services to customers directly or otherwise).⁴⁵ While interesting from the academic perspective, such a classification should not obscure the design of the regulatory response.

V. REGULATING FINTECH: UNDERLYING CHALLENGES

Having acknowledged and explained the difficulties in identifying the characteristic features of FinTech and the resulting regulatory implications, this Article will now take a broader look at the various challenges underlying FinTech regulation. For the purposes of the subsequent sections of this Article, FinTech will be understood in a broad sense, as technology-enabled

43. For example, Bitcoin, according to the ECB, “does not have a central authority in charge of money supply, nor a central clearing house, nor are financial institutions involved in the transactions, since users perform all these tasks themselves.” See EUROPEAN CENT. BANK, VIRTUAL CURRENCY SCHEMES, *supra* note 14, at 6. For general information on Bitcoin, see also Shavers, *supra* note 27, at *2.

44. In the case of the Internet, the major problem also lies in the nature of underlying technology that is difficult to control. In a seminal case *Reno v. ACLU*, 521 U.S. 844, 851 (1997), the U.S. Supreme Court described the Internet as “a unique medium—known to its users as ‘cyberspace’—located in no particular geographical location but available to anyone, anywhere in the world, with access to the Internet.” For an outline of resulting challenges, particularly in the area of state jurisdiction and control, see, e.g., Christopher Kuner, *The Internet and the Global Reach of EU Law*, (LSE L., Soc’y & Econ. Working Paper No. 4/2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2890930 [<https://perma.cc/SK2B-7J5R>]; DAN JERKER B. SVANTESSON, SOLVING THE INTERNET JURISDICTION PUZZLE 1 (2017). For a recent example of the implications of a government’s attempt to exercise jurisdiction over the Internet, see, e.g., *Russia Blocks Google, Amazon IP Addresses in Bid to Ban Telegram*, REUTERS (Apr. 17, 2018, 6:13 AM), <https://www.reuters.com/article/us-russia-telegram-ipaddresses/russia-blocks-google-amazon-ip-addresses-in-bid-to-ban-telegram-idUSKBN1HO1WM> [<https://perma.cc/JKT4-MXZE>].

45. See Dirk A. Zetzsche et. al., *From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance*, 9–11 (European Banking Inst. Working Paper 2017 No 6). It should be noted that the authors of the above paper acknowledge the difficulties with defining “TechFin” as a separate category and “prefer the term ‘TechFin’ to be understood more as one describing a perspective rather than serving as a formal definitional concept.” See *id.* at 6 n.16.

innovation in financial services, regardless of the degree of novelty resulting from it or the consequences for the market and other stakeholders; this is done in order to cover the broader spectrum of regulatory challenges.

A. FinTech Regulation: Four Key Questions

The four key questions below can help shape the regulatory approach to FinTech. A clear understanding and an informed response by regulators to all key questions will simplify and streamline the rulemaking process, putting it in perspective and creating a systematic approach.

1. What is the Overall Objective of FinTech Regulation?

FinTech regulation can be structured in a number of ways, depending on the objectives pursued by the regulator.

On the one hand, the regulatory regime can fulfill a *prudential role*, focusing on systemic risks and threats to the wider economy and protecting consumers. On the other hand, regulation can *actively promote FinTech*, either by eliminating artificial barriers for entry, or by establishing a preferential regime for FinTech businesses.⁴⁶ In the latter case, regulators act as facilitators and develop various techniques, like regulatory sandboxes mentioned earlier, to foster the development of the FinTech sector.⁴⁷ FinTech promotion, in turn, can be driven by two different objectives: (1) the need to increase market competition,⁴⁸ or (2) the desire to achieve greater levels of financial inclusion.⁴⁹

46. Brummer and Gorfine similarly distinguish between the “engagement” and the “enforcement” approaches to regulation. See Brummer & Gorfine, *supra* note 1, at 10–11.

47. For a more detailed discussion of various FinTech-promoting regulatory techniques, see Dirk A. Zetsche et. al., *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, 23 FORDHAM J. CORP. FIN. L. 31 (2017). The authors differentiate four alternative approaches to FinTech regulation: (i) doing nothing, (ii) cautious experimentation on a case-by-case basis (e.g. no-action letters), (iii) structured experimentation (e.g. regulatory sandboxes) and (iv) so-called “smart regulation” involving four stages (testing, a regulatory sandbox, a restricted license and a full license). *Id.* at 91, 98 (providing a more detailed discussion of various FinTech-promoting regulatory techniques).

48. See *Promoting Competition*, FIN. CONDUCT AUTH. (Dec. 11, 2017), <https://www.fca.org.uk/about/promoting-competition> [<https://perma.cc/9KBU-J2F7>].

49. When announcing the plans to introduce special purpose national charters to fintech companies in the US in late 2016, the Comptroller of the Currency Thomas Curry noted that “[f]intech companies hold great potential to expand financial inclusion, empower consumers, and help families and businesses take more control of their financial matters.” See Thomas J. Curry, *Comptroller of the Currency, Address at Georgetown University Law Center: Special Purpose National Bank Charters for Fintech Companies*, GEO. U. L.

The two objectives listed above may come into direct conflict, in which case a policy decision must be made as to which is the main objective of the FinTech regulation. This choice is driven by a variety of factors, including macroeconomic goals, such as the level of financial inclusion: it is conceivable that in economies with large numbers of unbanked population, the opportunity to provide access to financial services to the masses would outweigh the underlying risks of fraud and client abuse.

Whenever FinTech promotion is considered as the underlying regulatory objective, regulators need to carefully consider whether FinTech businesses might require some form of *preferential treatment* to make new products and solutions more attractive, at least to a certain extent. This is important since FinTech solutions can be developed by both incumbent financial institutions and start-ups. For smaller companies, it is not uncommon to be subject to lower regulatory requirements. The rationale for this varies from the intention to avoid overburdening companies without the resources to maintain a dedicated compliance team to the limited need for consumer protection due to their smaller customer base (and the corresponding lower overall impact on the market).

It is thus conceivable that FinTech businesses may be offered preferential treatment for a variety of reasons. For example, in certain regions, the local demand for financial services may be insufficient to keep the new technologies profitable. It would thus fall to regulators to both identify the areas or technologies where the new developments are desirable and to devise measures to promote them. Similarly, special rules for FinTech businesses may be established when the existing financial services regulation offers no flexibility and requires start-ups to obtain a full banking license to offer a new product.

Eligibility requirements for regulatory sandboxes⁵⁰ require careful balancing of policy considerations. If the key selection criteria are primarily based on the quality of the proposed business model or technological solution, then the resulting regulation ends up favoring either incumbent financial institutions that develop new FinTech products internally or start-ups that operate in collaboration with such financial institutions or incubators.⁵¹ Smaller companies operating independently lack the sophistication required to compete effectively and would end up being side-lined. This raises the question of regulatory priorities. If in the alternative, the key objective is to increase the level of competition, then sandboxes can be utilized as an

CTR. 3–4 (Dec. 2, 2016), <https://www.occ.treas.gov/news-issuances/speeches/2016/pub-speech-2016-152.pdf> [<https://perma.cc/HZQ3-MWR4>].

50. See FIN. CONDUCT AUTH., *supra* note 32.

51. These start-ups possess greater resources, including new product approval processes, as well as legal and regulatory compliance checks.

instrument for levelling the playing field for under-resourced FinTech businesses (when structured accordingly).⁵²

Overall, the regulator's first step in designing the FinTech regulatory model should be clearly setting its own priorities. What exactly does the regulator intend to achieve? Whose interests should be balanced? How should these interests be weighed against each other? These priorities need to be realistic—a broad declaration of support towards FinTech or a list of mutually exclusive objectives can send mixed signals to the market. Without a clear overarching objective, the regulation is likely to be inconsistent. There is a risk that, instead of aiming to reach certain goals, the new rules will simply attempt to “retrofit” the new technological developments into the existing regulation.

2. *Regulate Now or “Wait and See”?*

In a number of jurisdictions, some regulators have chosen a cautious “wait and see” approach to FinTech regulation; others have attempted to be more forward-looking.⁵³ While both strategies may yield benefits, it is important from the regulatory perspective to *weigh the expected benefits against the potential risks and costs* resulting from the adoption of the new technological solutions. This balance poses a difficult challenge. How does one perform the cost benefit analysis *ex ante* when empirical data are either limited or unavailable? What is the most appropriate methodology? A robust, independent and verifiable *ex ante* social and economic impact assessment (“SEIA”) can help a regulator decide whether to adopt new rules and can be particularly useful when comparing alternative regulatory solutions.

The outcome of a SEIA can also help to determine when regulators should intervene, and in what way. Premature regulation can stifle innovation, whereas delayed regulation can lead to missed growth opportunities, as well as failure to spot major (including systemic) risks. The traditional timelines of regulators may also be eclipsed by the speed of developments in the FinTech sector. The words of the FCA Chairman John Griffith-Jones are illustrative:

52. See generally Zetzsche et. al., *supra* note 47, at 69–77.

53. See *id.* at 47–58.

We have come to realise that the more detailed regulation that we have, the greater the challenge of keeping it all current [. . .] Rules that were designed for the paperwork era do not work necessarily for the online one.⁵⁴

Deciding the most appropriate time to regulate FinTech activities is greatly influenced by the speed at which certain technologies advance. One of the most recent developments is the launch of a new type of cryptographic virtual currency, Bitcoin Cash,⁵⁵ which was launched on August 1, 2017.⁵⁶ This was done due to competing plans to modernize Bitcoin⁵⁷ either by increasing the block size, or by moving certain information into a separate file transmitted alongside the block.⁵⁸ The change resulted in massive swings in Bitcoin prices and essentially gave birth to a new virtual currency overnight (with the mining⁵⁹ of block 478559). The implications involve a potential change in the mining landscape. Early reports suggest a great deal of consolidation whereby Bitcoin Cash was dominated by a very small number of players⁶⁰ (as opposed to the “standard” Bitcoin, where mining is largely decentralized).⁶¹

Additionally, another reason for sooner regulatory intervention may lie in the dispersed nature of FinTech businesses, which often take the form of small start-up companies with limited resources and legal expertise. In contrast to incumbent financial institutions, these market players are not

54. John Griffith Jones, FCA Chairman, *Address at Cambridge Judge Business School* (Feb. 13, 2017) <https://www.fca.org.uk/news/speeches/what-makes-good-conduct-regulation> [<https://perma.cc/TD8L-98R5>].

55. See BITCOINCASH, <https://www.bitcoincash.org> [<https://perma.cc/48TN-DU26>] (last visited Apr. 9, 2018).

56. Laura Shin, *A Second Version Of Bitcoin Has Launched. Could It Threaten The Original?*, FORBES (Aug. 2, 2017), <https://www.forbes.com/sites/laurashin/2017/08/02/a-second-version-of-bitcoin-has-launched-could-it-threaten-the-original/#5a292ac844a7> [<https://perma.cc/ZFC8-YRQN>].

57. See *supra* note 27, and accompanying text.

58. A “block” is an electronic permanent record of each transaction with Bitcoin. See *Block*, BITCOINWIKI, <https://en.bitcoin.it/wiki/Block> (last modified Mar. 16, 2018, 3:58 PM) [<http://perma.cc/Z27M-D6LT>].

59. “Mining” is a process of adding new blocks to Bitcoin’s public list (ledger) of transactions. See *Mining*, BITCOINWIKI, <https://en.bitcoin.it/wiki/Mining> (last modified Feb. 22, 2018, 2:20 PM) [<http://perma.cc/VKU4-AGN8>]; see also Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, <https://bitcoin.org/bitcoin.pdf> (original paper written by Nakamoto and made accessible through Bitcoin.org) [<https://perma.cc/ZYJ8-FAX7>].

60. See *Bitcoin Cash is Not Decentralised! . . . 92% of the Blocks are Mined by only 2 Miners*, STEEMIT, <https://steemit.com/bitcoin/@penguinpablo/bitcoin-cash-is-not-decentralised-92-of-the-blocks-are-mined-by-only-2-miners> [<http://perma.cc/RV59-C29R>] (last visited Apr. 9, 2018).

61. See *Hashrate Distribution: An estimation of hashrate distribution amongst the largest mining pools*, BLOCKCHAIN, <https://blockchain.info/pools> [<http://perma.cc/32UM-6EZ5>] (last visited Apr. 9, 2018).

accustomed to being engaged in an ongoing dialogue with regulators and, unless first approached by the latter, often prefer to stay “under the radar.”

Waiting too long can entail *reputational risks*: customers may lose trust in FinTech solutions if there are major global or regional failures in the future. A lack of regulation may also encourage *regulatory arbitrage*,⁶² as heavily regulated entities might use FinTech to expand into less regulated spaces to circumvent regulations.

At the same time, it is important not to overstate every disruptive development of technology, as the future of financial services markets might lie in the gradual evolution and improvement of the existing banking models, rather than in the radical change of the financing landscape. Even if this is true, it might be desirable, at least, to ensure that FinTech developments can become competitive enough to drive the change within the financial institutions and encourage improvement.

3. Which FinTech Areas Require Priority in Terms of Regulatory Attention?

Two key factors generally determine where the regulators should direct their immediate attention: systemic risks and pressing social and economic issues. Depending on the jurisdiction in question, certain FinTech activities may be associated with *higher systemic risks*, warranting greater regulatory scrutiny. In China, the fall of the online peer-to-peer platform Ezubao in late 2015 persuaded the government to restrict online lending practices.⁶³

Some technologies may offer solutions to the *more pressing problems* specific to the jurisdiction in question, such as by increasing the level of financial inclusion in countries with large numbers of unbanked population (as was the case with M-Pesa in Kenya).⁶⁴ In these circumstances, regulation can be crucial to allowing or disallowing the application of the new technology and tapping its benefits.

Different applications of the same technology may occupy different spots on the regulators’ priority lists due to dissimilar regulatory concerns.

62. Regulatory arbitrage is a practice of taking advantage of loopholes in existing regulatory framework for one’s own benefit.

63. See *supra* notes 22, 30, and accompanying text.

64. See, e.g., Jay K. Rosengard, *A Quantum Leap Over High Hurdles to Financial Inclusion: The Mobile Banking Revolution in Kenya*, (SWIFT Inst. Working Paper No. 2015-005), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2803955 [<https://perma.cc/EZR7-DWGZ>].

A good example is the distributed ledger technology,⁶⁵ which can be utilized in a variety of end use applications. Some of them, such as cryptographic virtual currencies, can exist and develop even without dedicated regulation, as has been demonstrated by Bitcoin. For other applications, such as smart contracts,⁶⁶ however, a clear and consistent regulation may be necessary to give peace of mind to market participants interested in adopting the new technology.

4. *Are the Key Challenges Internal (Domestic) or External (International)?*

The mandates of national regulators are limited and prioritize the stability of the domestic financial system. However, FinTech by its nature is capable of transcending borders. On the one hand, this capability raises the issue of how operations of foreign FinTech companies should be regulated to the extent that they affect the local financial system. On the other hand, for some FinTech businesses, such as those operating in the payments sector, the ability to expand to other jurisdictions may be crucial, particularly when local demand is insufficient. In these cases, international (e.g. regional) interoperability becomes a condition for the continued application of the FinTech solution.⁶⁷ Thus, there is the issue of how much foreign regulators can affect a domestic regulatory regime.

There is an opportunity for international cross-pollination of best practices to meet the overall objectives underpinning the regulatory system. However, if one of those objectives is to attract more FinTech companies into a certain jurisdiction, there is a danger of a “race-to-the-bottom” for the most deregulated environment. The spread of regulatory sandboxes may be seen in this light.

65. See *supra* note 19, and accompanying text.

66. In a recent DLT report by the UK Government Chief Scientific Adviser, “smart contracts” are defined as “contracts whose terms are recorded in a computer language instead of legal language.” See GOVERNMENTAL OFFICE FOR SCI., DISTRIBUTED LEDGER TECHNOLOGY: BEYOND BLOCK CHAIN 18, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf [<https://perma.cc/JM6B-QZEF>].

67. A 2017 Chatham House report stresses (in the context of Sub-Saharan Africa) that “because of the small size of most internal markets, economies of scale can often only be achieved through regional integration.” See Henry Thompson, et. al., *Developing Businesses of Scale in Sub-Saharan Africa: Insights from Nigeria, Tanzania, Uganda and Zambia*, CHATHAM HOUSE 4 (Sept. 8, 2017), <https://www.chathamhouse.org/sites/files/chathamhouse/publications/research/2017-09-08-business-of-scale-africa-thompson-shepherd-welch-any-imadu.pdf> [<https://perma.cc/FM9M-XQ2P>].

B. Challenges to FinTech Regulation

Answers to the four questions raised in section V.A can create a firm basis for the development of a FinTech regulatory framework. However, the underlying process is fraught with difficulties, which will be summarized in this section.

1. FinTech Regulation and the Rule of Law

Analysis shows that many of the challenges underlying the regulation of FinTech are not technology-related. In fact, some of the most pronounced issues are common for all areas of the law. There is a need for legal clarity and certainty and a need to ensure equal treatment of various parties and exercise regulatory powers within the limits set by the law. Each of these have one thing in common: they form the basis of a rule of law compliant legal regime—one that follows the principle that “all persons and authorities within the state, whether public or private, should be bound by and entitled to the benefit of laws.”⁶⁸ For this reason, the various challenges connected with this principle have been grouped in a separate category (“rule of law challenges”) in the following section. Other more specific challenges, like the various mechanics involved in the proper functioning of the financial services markets, are discussed in a later section.

2. Rule of Law Challenges

a. The Need for Legal Clarity, Certainty and Predictability⁶⁹

1. Regulatory Fragmentation and Regulatory Arbitrage

FinTech cuts across a number of sectors, and thus it is often difficult to assign it to a single FinTech regulator. Multiplicity of regulators, coupled with overlapping responsibilities and authority, may lead to inefficiencies and inconsistencies.⁷⁰

Even in jurisdictions where the regulation of financial services has been consolidated in the hands of a single regulator (e.g. the Central Bank of

68. TOM BINGHAM, THE RULE OF LAW 8 (2010).

69. According to Tom Bingham, “[t]he law must be accessible and so far as possible intelligible, clear and predictable.” *See id.* at 37.

70. *See Knight, supra* note 9, at 23–25. It should be noted that multiplicity of regulators may also have its advantages, such as the potential for increased transparency or regulatory competition. *See id.* at 22–23.

the Russian Federation (“CBR”), known as the “mega-regulator”),⁷¹ communication and data protection matters are likely to have dedicated regulators that oversee the use of technology. For example, mobile money⁷² systems may be simultaneously regulated by both banking and telecommunications regulators. Coexistence of parallel regulation systems creates an opportunity for businesses to seek regulatory arbitrage.

In countries with multiple (e.g. local and federal) regulatory levels the problem is more pronounced, as conflicts of authority may emerge. One of the best examples of such conflicts is United States. In December 2016, the Office of the Comptroller of the Currency (“OCC”) published an initiative envisaging the issuance of special purpose national bank charters to FinTech companies.⁷³ This initiative was met with strong opposition from the state regulators and culminated in a lawsuit brought by the Conference of State Bank Supervisors against the OCC and the Comptroller of the Currency in April 2017.⁷⁴ The plaintiff sought declaratory and injunctive relief arguing the OCC’s creation of the nonbank charter was unlawful and pleaded to the court to enjoin the OCC from pursuing it, stating that the OCC “acted beyond its statutory authority”⁷⁵ and “because the OCC has not offered a reasoned explanation for its decision, its actions should be deemed not only contrary to law, but also arbitrary, capricious, and an abuse of discretion.”⁷⁶

2. *Uncertainty About Where New Products Fall in the Existing Regulatory System*

The financial services sector is heavily regulated in most jurisdictions. As a result, new FinTech solutions often end up being already covered by

71. In 2013, the CBR took over the duties of the Federal Financial Services Markets Authority and thus consolidated the functions of the banking, securities and insurance regulator. THE CENT. BANK OF THE RUSS. FED’N, ANN. 2013 REP. 13 (2013).

72. Mobile money is a technology enabling access to financial services directly through a mobile phone that does not require the client to open a separate bank account (as opposed to mobile banking, which simply allows customers to access their bank accounts via a mobile device). See CLAIRE SCHARWATT ET. AL., 2014 STATE OF THE INDUSTRY: MOBILE FINANCIAL SERVICES FOR THE UNBANKED 10–11 (2014), https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf [<https://perma.cc/7BVN-X7AV>].

73. See generally *Exploring Special Purpose National Bank Charters for Fintech Companies*, OFF. OF THE COMPTROLLER OF THE CURRENCY (Dec. 2016), <https://www.occ.gov/topics/responsible-innovation/comments/special-purpose-national-bank-charters-for-fintech.pdf> [<https://perma.cc/MJ59-U4FZ>].

74. Conference of State Bank Supervisors v. Office of Comptroller of Currency & Curry, No. 1:17-cv-00763 (D.D.C. Apr. 26, 2017).

75. See *id.* at 3, para 7.

76. See *id.* at 4, para 10.

existing law. However, in many situations, the legal status of the new product or service cannot be clearly determined, either because there is a “gap” in regulation, or because different regulations conflict with each other.⁷⁷

The lack of certainty may be particularly detrimental to FinTech start-ups and small and medium enterprises (“SMEs”). While it is common for financial institutions to develop closer relationships with the regulator to clarify the existing legal position, smaller FinTech businesses may not be prepared for this dialogue and will often lack the resources to seek third party legal advice.

Further regulatory intervention may still be necessary even where pre-existing regulatory constructs are generally sufficient to support the new technology. In these cases, it is equally important to avoid the duplication of legal regimes and clarify the regulator’s position with respect to the new technologies.⁷⁸

The lack of legal certainty can come at major opportunity costs for the economy. For example, in Africa, where most crowdfunding⁷⁹ follows the donation (i.e. non-return) model, insufficient clarity of existing regulation (e.g. in respect of the legal status of online lending platforms) may explain, at least partly, the slow pace of development of a debt-based crowdfunding model.⁸⁰ A recent open discussion on the regulatory challenges for FinTech in Africa concluded that clarity is “the most important requirement” for the growth of crowdfunding in the region.⁸¹

77. In its 2012 report the ECB concluded that “[v]irtual currency schemes visibly lack a proper legal framework, as well as a clear definition of rights and obligations for the different “parties” and that the “[k]ey payment system concepts such as the finality of the settlement do not seem to be clearly “specified.” See EUROPEAN CENTRAL BANK, VIRTUAL CURRENCY SCHEMES, *supra* note 14, at 42.

78. For examples of various measures adopted by the regulators in Australia, Canada, the EU, the UK and the US in addressing the robo-advisory activities, see *IOSCO Research Report on Financial Technologies*, IOSCO 35 n.90 (Feb. 2017), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD554.pdf> [<https://perma.cc/U7KA-P5K3>].

79. On different types of crowdfunding, see John Armour & Luca Enriques, *The Promise and Perils of Crowdfunding: Between Corporate Finance and Consumer Contracts*, (ECGI Working Paper No. 366/2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3035247 [<https://perma.cc/GAV4-577E>].

80. See, e.g., *Fintech in Africa: Unpacking Risk and Regulation*, BOWMANS 11 (2017), <http://www.bowmanslaw.com/wp-content/uploads/2017/10/Fintech-In-Africa-Conference-Summary.pdf> [<https://perma.cc/5CCP-DYUM>].

81. *Id.*

3. *Lack of Clear and Accessible Regulatory Guidance/Lack of Communication from the Regulator*

Smaller FinTech businesses often lack the capacity to engage with existing law—especially when the law is not easily accessible without specialized training. When rules are not easily understood, even if the regulator is open for a dialogue, a small FinTech business might still require a facilitator, or a FinTech “incubator,”⁸² to “translate” between FinTech firms and regulators to ensure that the two sides of the dialogue understand each other. The lack of a common language further increases the divide that already exists based on different approaches taken by both sides (risk averse regulators, on the one hand, and risk-taking FinTech businesses, on the other).

FinTech incubators and incumbent financial institutions that work with FinTech businesses are in a good position to facilitate dialogue with the regulator in this regard. In the process of selecting FinTech partners/investment targets, they accumulate important empirical data and analyze the law for any gaps or inconsistencies in the context of the new technological solution.

In addition, overreliance on principles-based guidance⁸³ may lead to a lack of certainty and may discourage businesses, particularly if coupled with the lack of regulatory support in navigating the regulations, the lack of communication on authorization processes and the absence of a single point of contact with the regulator.

4. *Lack of International Coordination*

There is insufficient coordination among regulators around the globe in addressing FinTech-specific matters. As a result, various jurisdictions have adopted different approaches in regulating the same FinTech solutions. The lack of uniformity becomes particularly relevant in the context of decentralized and delocalized technologies (such as DLT),⁸⁴ making it hard to draw a line in the application of different regulatory regimes.

A good example of illustrating these different approaches are cryptocurrencies. Although most countries have chosen a “hands off” approach, some countries have already taken action, either by classifying virtual currencies in accordance

82. “Incubators” (or “accelerators”) are business development programs offering FinTech (usually start-up) firms various kinds of support (technological due diligence, mentorship, office space, legal help, financial assistance etc.). See *Boston Startup Accelerators, Incubators, & Support Program*, BOSTON STARTUPS GUIDE, <https://bostonstartupsguide.com/guide/every-boston-startup-accelerator-incubator/> [https://perma.cc/556M-32RJ] (last visited Mar. 26, 2018).

83. See Brummer & Gorfine, *supra* note 1.

84. See ESMA, *supra* note 19.

with domestic law (Australia⁸⁵, the UK⁸⁶), or by differentiating between “real” and “fake” cryptocurrencies (Switzerland⁸⁷). Russia contemplates detailed rules governing cryptocurrencies⁸⁸ with draft federal legislation already underway.⁸⁹ Several states are also currently considering a more radical response in the form of generally accessible digital central bank money.⁹⁰ The list of different approaches goes on and on.⁹¹

85. *GST – removing the double taxation of digital currency*, AUSTL. TAX’N OFF., <https://www.ato.gov.au/General/New-legislation/In-detail/Indirect-taxes/GST/GST—removing-the-double-taxation-of-digital-currency/> [https://perma.cc/PJ59-7T84] (last visited Apr. 9, 2018).

86. *Revenue and Customs Brief 9 (2014): Bitcoin and Other cryptocurrencies*, HM REVENUE & CUSTOMS (Mar. 3, 2014), <https://www.gov.uk/government/publications/revenue-and-customs-brief-9-2014-bitcoin-and-other-cryptocurrencies/revenue-and-customs-brief-9-2014-bitcoin-and-other-cryptocurrencies> [https://perma.cc/L888-U7P4].

87. *FINMA closes down coin providers and issues warning about fake cryptocurrencies*, FINMA (Sept. 19, 2017), <https://www.finma.ch/en/news/2017/09/20170919-mm-coin-anbieter/> [https://perma.cc/XST5-ZS3Q].

88. Pavel Kantyshev, *ЦБ и Минфин прояснили будущее криптовалют в России [CB and the Ministry of Finance Have Clarified the Future for Cryptocurrencies in Russia]*, VEDOMOSTI (Sept. 8, 2017), <https://www.vedomosti.ru/finance/articles/2017/09/08/733043-kriptoalyutah> [https://perma.cc/MMC8-XCZS]. On 21 October 2017, the Russian President issued a number of assignments aimed at developing the Russian FinTech regulatory regime. These include: (i) defining the legal status of various technologies, such as DLT, (ii) developing rules governing the “mining” process (see *Mining*, *supra* note 59), (iii) regulation of public coin offerings “by analogy to the initial offering of securities,” (iv) establishing a regulatory “sandbox” by the CBR and (v) creating a common payments area in the Eurasian Economic Union. See *Перечень поручений по итогам совещания по вопросу использования цифровых технологий в финансовой сфере [The List of Assignments Resulting from the Meeting on the Use of Digital Technologies in the Financial Sphere]*, KREMLIN (Oct. 21, 2017), <http://kremlin.ru/acts/assignments/orders/copy/55899> [https://perma.cc/Y8M3-YD8Y].

89. See *Draft Federal Law ‘On Digital Financial Assets’ (as of 22 May 2018)*, <http://sozd.parliament.gov.ru/bill/419059-7>. The draft law defines not only “cryptocurrency,” but also different technical terms, such as “mining,” “token” etc.

90. See, e.g., Sveriges Riksbank, *The E-krona Project’s First Interim Report*, <https://www.riksbank.se/en-gb/financial-stability/the-financial-system/payments/does-sweden-need-an-e-krona/the-e-krona-projects-first-interim-report/> (last updated Jan. 2, 2018) [https://perma.cc/Q3V5-AKHV]. In contrast, under most existing payment systems central bank money (excluding cash) is directly available only to select users (banks, certain non-bank financial institutions, governments, international organizations). For a more detailed discussion relating to state-issued cryptocurrencies, see Morten Bech & Rodney Garratt, *Central Bank Cryptocurrencies: BIS Quarterly Review*, BIS (2017), https://www.bis.org/publ/qtrpdf/r_qt1709f.pdf [https://perma.cc/AER3-DZTY].

91. For other regulatory responses see for example International Monetary Fund, *Virtual Currencies and Beyond: Initial Considerations: IMF Staff Discussion Note*, IMF

5. *Rapid Development of Technology*

FinTech changes can be instantaneous, as demonstrated by the launch of Bitcoin Cash on August 1, 2017.⁹² At the same time, the application of certain technologies may change over time, in some cases dramatically altering the regulatory response. For example, some virtual currencies, like Bitcoin, were initially developed as decentralized instruments co-existing in parallel with their state-issued counterparts. However, now governments are already considering establishing their own, state-controlled virtual currencies.⁹³ This change can significantly alter the regulatory agendas, transitioning from a “hands-off” approach to a more nuanced regulation differentiating between state and non-state virtual currencies.

6. *FinTech Diversity*

FinTech encompasses numerous solutions in various financial sectors. In addition, the very concept of FinTech changes over time.⁹⁴ As a result, FinTech regulation must incorporate a degree of flexibility. Several approaches can be envisaged:

1. New product-specific regulation (i.e. development of new rules specifically for each FinTech product or technology);
2. Existing product-specific regulatory framework revised to reflect the emergence of a new technology (i.e. modernization of existing rules); and
3. New universal rules on FinTech (generally) that are broad enough to operate regardless of any change of technology or product (i.e. development of a comprehensive FinTech regime).

Alternatively, a principles-based regulatory approach can be adopted for two main reasons. First, it can add flexibility to address future changes in technology. Second, it can be used as an interim regulatory method, while the corresponding FinTech rules are being developed.

42 (Jan. 2016), <https://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf> [<https://perma.cc/N7ZT-8AZ4>].

92. See BITCOINCASH, *supra* note 55.

93. See Riksbank, *supra* note 90; see Bech & Garratt, *supra* note 90.

94. See *supra* Section IV.A.

*b. Unequal Treatment*⁹⁵*1. Legislation/Regulation Favors Certain Participants*

Although financial regulation can be drafted in a neutral manner (applicable equally to all parties), in the FinTech context, this approach would effectively prioritize large financial institutions. For example, if the law characterizes a bank as any organization that takes deposits from a predetermined minimum number of people, this significantly limits the opportunities for the emergence of non-bank crowdfunding platforms.

This de facto priority puts pressure on regulators to establish regimes to favor newly created start-up businesses in order to increase the competition in the financial services market. However, any decision allowing preferential treatment needs to be based on clearly defined rules. While these rules might relax certain regulatory requirements for start-ups, they need to make it clear when businesses cease to be eligible for such treatment.

This inequality also raises another concern regarding FinTech labs operating within incumbent financial institutions or in association with them. Would these innovators also be eligible for preferential treatment and on what grounds? In these cases, regulators may benefit from breaking internal silos and increasing internal coordination, in order to increase regulatory efficiency and avoid instances where different parts of the same financial institutions are regulated differently (which would be the case if an internal FinTech division were offered some form of preference).

2. Balancing Risk and Reward of Regulation

Regulation should maintain a balance in terms of perceived risk and reward. Disparities cause confusion and may stifle the development of the FinTech industry. For example, if regulation is structured in such a way that banking rules end up applying to peer-to-peer lending platforms, but do not confer a full banking status to these businesses, such platforms may be forced to exit the market or restructure the business so they can apply for a banking license.

95. According to Tom Bingham, “[t]he laws of the land should apply equally to all, save to the extent that objective differences justify differentiation.” See BINGHAM, *supra* note 68, at 55.

3. *Selecting Technologies and Sectors Eligible for Regulatory Support*

In some regions, local demand may be insufficient for FinTech companies to sustain and further develop their businesses. Regulators have different options in this case: create a preferential regime for a number of businesses or focus on building consumer demand for the new technology (or both).⁹⁶

4. *Access to Existing Infrastructure*

Lack of openness, such as access to banks' APIs,⁹⁷ and lack of interoperability between systems may significantly reduce the ability to scale certain FinTech businesses, particularly in the payments sector.

5. *Preferential Treatment/Participation in Regulatory Sandboxes*

For a variety of reasons⁹⁸ regulators may engage in FinTech promotion. A recent example of such activity is the creation of regulatory sandboxes.⁹⁹ Different regulators around the globe are establishing sandboxes to foster FinTech, allowing innovators to test their concepts in a deregulated environment or with certain regulatory preferences that are not enjoyed by the rest of the market.¹⁰⁰ Examples of the latter include exemptions from holding the financial services or credit licenses offered by the ASIC in Australia.¹⁰¹

The concept of a FinTech sandbox is still new, and regulators apply different approaches.¹⁰² However, the criteria for selecting businesses eligible for any preferential regime should be clear and devoid of regulatory arbitrariness. Otherwise, the preferences obtained by the select few may be seen as unfair advantage.

96. See Ross P. Buckley & Louise Malady, *Building Consumer Demand for Digital Financial Services—The New Regulatory Frontier*, J. FIN. PERSP.: FINTECH 122 (Winter 2015).

97. An application programming interface ("API") is a set of routines, protocols,

98. See discussion *supra* V.A.

99. See discussion *supra* IV.B.

100. See AUSTL. SEC. & INV. COMM'N, TESTING FINTECH PRODUCTS AND SERVICES WITHOUT HOLDING AN AFS OR CREDIT LICENCE 34 (2017).

101. *Id.*

102. See Herbert Smith Freehills, *Hong Kong Launches Regulatory Sandbox in Wake of Developments in Australia, Malaysia, Singapore, and the UK* (Sept. 30, 2016), <http://sites.herbertsmithfreehills.vuturevx.com/103/12430/landing-pages/2016.09.30-apac-fintech-briefing.pdf> [<https://perma.cc/W8MU-CTGZ>].

*c. Limits on the Exercise of Power*¹⁰³

1. Regulator's Mandate and Authority to Regulate FinTech

FinTech solutions may be based on technology that is developed by private parties without any involvement of the state, such as non-state virtual currencies. As a result, regulatory intervention is possible only where the regulator is mandated, both in terms of the scope of regulation and as regards the territory to which the regulation applies. But, the underlying problems are many. First, in federal states both the federal and state regulators cannot overstep their respective authority.¹⁰⁴ Second, the development of decentralized autonomous technologies, like DLT,¹⁰⁵ makes it particularly difficult to identify not only the competent regulator, but even the state with the authority to regulate.¹⁰⁶ Finally, regulators should have the necessary authority to pursue either, or both, of the corresponding objectives: economic stability (prudential oversight) and financial inclusion (FinTech facilitation and promotion).

3. Other Regulatory Challenges

a. Protecting End-Users

1. Investor/Service Provider Accreditation

A common approach to regulating potentially risky business models involves restricting the types of investors permitted to make use of such models (such as by introducing the concept of “qualified investors”). In addition, some service providers, like financial advisors, may require certain special regulatory authorizations, such as a license.

103. According to Tom Bingham, “[m]inisters and public officers at all levels must exercise the powers conferred on them in good faith, fairly, for the purpose for which the powers were conferred, without exceeding the limits of such powers and not unreasonably.” See BINGHAM, *supra* note 68, at 60.

104. See Conference of State Bank Supervisors v. Office of Comptroller of Currency & Curry, No. 1:17-cv-00763 (D.D.C. Apr. 26, 2017).

105. See ESMA, *supra* note 19.

106. See EUROPEAN CENTRAL BANK, VIRTUAL CURRENCY SCHEMES, *supra* note 14, at 43 (DLT-based virtual currencies are a good example: “In the particular case of Bitcoin, which is a decentralised peer-to-peer virtual currency scheme, there is not even a central point of access, i.e. [sic] there is no server that could be shut down if the authorities deemed it necessary.”).

It is important to achieve balance in designing end-user protections. On the one hand, authorization requirements might need to be expanded to cover the new FinTech products, e.g. in cases when financial advisors solicit investment in non-state virtual currencies due to the high volatility of the latter. On the other hand, by imposing strict entry requirements regulators may regulate the masses out of the market and miss the opportunity for greater financial inclusion offered by FinTech.

2. Fraud Prevention

New technology can be abused by unscrupulous businesses due to the fact that its exact workings may be unclear for the end-users.¹⁰⁷ Fraud-related risks may greatly discourage future investors in sectors where regulators have failed to prevent misconduct (e.g. Ezubao¹⁰⁸ in China or TrustBuddy¹⁰⁹ in Sweden).

Fraud prevention is one of those regulatory objectives which apply across the whole financial sector, regardless of the technology used. However, regulation is not always drafted broadly enough to capture new and unexpected technological developments. In the absence of a principles-based approach to regulation, adjustment of fraud prevention rules can take time and eventually come too late.

b. Ancillary Laws/Regulations

1. Ensuring Ease of Doing Business

General business regulations affect all companies, but certain areas of general regulation can be identified as particularly relevant to FinTech companies: immigration regime and access to talent, ease of setting up a business, tax policies, ease and cost of enforcing contracts, and exchange controls.¹¹⁰

107. For example, see a warning issued by the SEC in relation to fraudulent schemes involving virtual currencies, SEC. & EXCH. COMM'N, *Investor Alert: Ponzi Schemes Using Virtual Currencies*, SEC Pub. No. 153 (7/13), https://www.sec.gov/investor/alerts/ia_virtualcurrencies.pdf [<https://perma.cc/TZX8-PHK6>].

108. See WORLD ECON. FORUM, *Complex Regulatory Landscape*, *supra* note 22.

109. J.D. Alois, *TrustBuddy Bankruptcy: Lenders to Pay 25% on Recovered Claims*, CROWDFUND INSIDER (Jan. 22, 2016), <https://www.crowdfundinsider.com/2016/01/80598-trustbuddy-bankruptcy-lenders-to-pay-25-on-recovered-claims/> [<https://perma.cc/45EX-46AY>].

110. For relevance of various general business factors in the context of FinTech development see, e.g., *A Tale of 44 Cities: Connecting Global FinTech: Interim Hub Review 2017*, DELOITTE 10 (Apr. 2017), <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/Innovation/deloitte-uk-connecting-global-fintech-hub-federation-innotribe-innovate-finance.pdf> [<https://perma.cc/4GBU-4V3U>]; *UK FinTech: On the Cutting Edge: An Evaluation of the International FinTech Sector*, EY 8-9 (2016), <http://www.ey.com/Publication/>

2. Data Privacy and Data Protection

FinTech businesses are often data-intensive. As a result, data protection rules are critical for their operation. Piecemeal privacy laws are often hard to navigate and fail to deal with the tension between a desire for greater openness/sharing of data and a preference towards exercising greater control over valuable data. In addition, FinTech operations are often international, which creates implications for cross-border movement of data among states. The protection of one's privacy is not merely an ethical issue: the importance of the right to privacy is recognized in the fundamental international human rights treaties.¹¹¹ Data protection has another dimension: vulnerabilities of critical data may jeopardize national security.

3. Know Your Customer/Anti-Money Laundering/Countering the Financing of Terrorism Requirements

FinTech companies, particularly those engaged in online lending or operations with virtual currencies, often encounter obstacles when opening bank accounts and dealing with know your customer, anti-money laundering ("AML"), or countering the financing of terrorism ("CFT") requirements.¹¹² Despite the recent developments in tracking end-users, including special systems designed to increase the transparency of operations with virtual currencies,¹¹³ anonymity remains one of the key sources of concern for regulators.¹¹⁴ For example, neither Bitcoin addresses nor Bitcoin protocol implement client

vwLUAssets/EY-UK-FinTech-On-the-cutting-edge/\$FILE/EY-UK-FinTech-On-the-cutting-edge.pdf [https://perma.cc/K7ZX-AJRT].

111. See, e.g., Universal Declaration of Human Rights, Art. 12, G.A. Res. 217 (III) A, U.N. Doc. A/RES/217(III) (Dec. 10, 1948); European Convention on Human Rights, Art. 8, Eur. Ct. H.R. (1950).

112. See Martin Arnold, *Cryptocurrency companies forced to bank outside UK*, FINANCIAL TIMES (Oct. 22, 2017), <https://www.ft.com/content/3853358e-b508-11e7-a398-73d59db9e399>. In its 2017 FinTech study, the International Monetary Fund ("IMF") notes that "[g]iven their pseudo-anonymous nature where the identities of participants in a transaction are not known, cryptocurrencies do give rise to significant money-laundering and terrorist-financing risks." See INT'L MONETARY FUND, *Fintech and Financial Services: Initial Considerations* 16 n.7 (June 16, 2017), <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2017/06/16/Fintech-and-Financial-Services-Initial-Considerations-44985> [https://perma.cc/39FR-2MDE].

113. See generally ELLIPTIC, <https://www.elliptic.co/> [https://perma.cc/K3KV-BSGV] (last visited Apr. 14, 2018).

114. See, e.g., EUROPEAN CENT. BANK, VIRTUAL CURRENCY SCHEMES: A FURTHER ANALYSIS, *supra* note 14, at 28.

identification procedures, which creates opportunities for using the cryptocurrency for unlawful purposes, with limited ability of regulators to exercise meaningful monitoring and oversight.¹¹⁵

c. Organizational Matters

1. Decentralized Nature of FinTech

Regulators are used to dealing with industries that are internally uniform. However, FinTech is very decentralized, since it encompasses a large variety of businesses utilizing different technologies, and thus often does not have a single industry “voice.”

In practical terms, it is much easier to deal with a FinTech “hub” based on location, rather than a certain product-specific group of businesses. A prominent example is Bitcoin,¹¹⁶ where there is no centralized control, meaning regulators face difficulties interacting with the users of the technology and options for direct dialogue are limited.

As a result, regulators and FinTech businesses need to maintain dialogue to ensure that FinTech regulation remains adequate. However, important practical questions must be answered first. Should the dialogue be permanent or conducted on an ad hoc basis? How often should the regulators reconvene with the FinTech sector and in what format?

2. Holdout Start-Ups

Many FinTech businesses are start-ups that prefer to stay under the regulator’s radar. Unlike financial institutions (e.g. banks), they are not used to operating in constant dialogue with the regulator. This lack of continuous communication creates issues for the regulators attempting to engage with the FinTech businesses in respect of new initiatives (such as sandboxes, offers of assistance, FinTech weekends etc.).

3. Catching Up with the Development of Technology and Timely Identification of Systemic Risks

In order to provide an adequate response, regulators cannot afford to fall behind the developments in technology. Two separate issues can be identified in this context. First, how can regulators remain up-to-date with

115. See FIN. ACTION TASK FORCE, *Virtual Currencies: Key Definitions and Potential AML/CFT Risks* 9–10 (June 2014), <http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf> [https://perma.cc/XA89-9REH].

116. See *supra* note 27.

the developments in technology and its applications? Second, can new technology be used to prevent systemic risks or solve regulatory challenges?

FinTech allows businesses to grow at an unprecedented pace, quickening the transition from “too small to care” to “too big to fail.” A very fast development cycle imposes additional pressure on regulators and can create incentives to adopt new regulations or take individual action.¹¹⁷ One of the most recent examples of this growth and resulting government action comes from China: in the light of the growing number of ICOs organized domestically and around the globe, the People’s Bank of China declared a full ban on this model of raising finance, stressing the risky nature of the underlying investment.¹¹⁸

This “speed of change” challenge is particularly relevant in countries with large amounts of unbanked population, where FinTech takes up the space previously not taken by anyone else and is, consequently, capable of growing at enormous speeds.

There are several channels of systemic risk in the FinTech area. On the one hand, certain FinTech structures already carry the potential for systemic disruption in the future (e.g. marketplace lending could develop the same instruments and mechanisms which attributed to the recent global financial crisis). On the other hand, if banks use FinTech channels to offer their services in unregulated areas and, in doing so, multiply their own risks, this may jeopardize the stability of the banking system as a whole.

Finally, in some jurisdictions larger FinTech businesses have such a significant market share that their failure may have serious negative consequences for the overall financial system.¹¹⁹ It may be helpful to consider whether such businesses should be designated as systemically important and apply higher standards of supervision.

4. Adjustment of Existing Laws

In view of the constant development of technology and financing mechanisms, regulators need to ensure that applicable rules are adjusted accordingly

117. The best example is perhaps Alibaba’s Yu’e Bao, currently the largest money market fund in the world, which was started only in 2014, and was already among the top four funds in just nine months. *See Zetzsche et. al., supra* note 41, at 17.

118. Karishma Vaswani, *China Bans Initial Coin Offerings Calling Them “Illegal Fundraising”*, BBC NEWS (Sept. 5, 2017), <http://www.bbc.co.uk/news/business-41157249> [<https://perma.cc/7HZQ-ZRUB>].

119. The dominant mobile money provider in Kenya, M-Pesa, can be used as an example. *See discussion infra* Section VII.B.3.a.

(either by way of constant revision, by relying on principles-based regulation or otherwise). As part of this revision process, regulators should determine whether the objectives of regulation can be achieved by adjusting the existing regulatory structure or by developing dedicated, FinTech-specific, rules.

5. *Insufficient Intra-State Cooperation Among Regulators*

The lack of effective cooperation between different types of regulators results in uncertainty and confusion and may very likely discourage innovators. Conflicts and overlaps may exist on an industry level (e.g. between central banks and communications authorities), as well as on a constitutional level (e.g. between federal and state regulators).

Absence of cooperation among regulators may significantly reduce the effectiveness of certain regulatory measures, like no-action letters: a business receiving positive or neutral treatment from one regulator may still be open to a challenge from another.¹²⁰

6. *Lack of International Regulatory Coordination*

Many FinTech business models are transnational by nature. A prime example is DLT,¹²¹ which does not have a single center from which it operates, making it particularly difficult to design national regulatory measures. It is conceivable that in such areas international cooperation is capable of producing the most consistent regulatory response.¹²²

A number of jurisdictions have already initiated the process of international FinTech-related regulatory cooperation, by establishing FinTech “bridges” and signing Memoranda of Understanding with regulators in other countries.¹²³

VI. GLOBAL TRENDS IN FINTECH REGULATION

There is no universal approach to the regulation of FinTech; regulators adopt very different measures to address technological innovation in finance. Nevertheless, a number of international trends can be identified.

120. For example, see Letter from Consumer Financial Protection Bureau to Paul Hastings, LLP (Sept. 14, 2017), https://files.consumerfinance.gov/f/documents/201709_cfpb_upstart-no-action-letter.pdf [<https://perma.cc/B3LL-SVUM>]. This No-Action Letter is not issued by or on behalf of any other government agency or any other person and is not intended to be honored or deferred to in any way by any court or any other government agency or person.

121. See *supra* note 19.

122. If conflict of law rules end up being inappropriate in the context of a specific technology, international regulation on a substantive level might be warranted.

123. See discussion *infra*.

First, national regulators adopt various techniques to gain better understanding of FinTech and its potential implications. These include the establishment of dedicated working groups and consultation platforms; for example, there is the Distributed Ledger Technology Working Group established by the SEC,¹²⁴ the newly created LabCFTC in the U.S.,¹²⁵ the committee on financial technology set up by the People's Bank of China,¹²⁶ or the special working group on blockchain at the Bank of Russia.¹²⁷ Additionally, countries have formed roundtables and thematic workshops; the UK in particular has the International FinTech Conference, sponsored by the UK Department for International Trade,¹²⁸ and the themed weeks on robo-advice, payments and InsurTech organized by the FCA.¹²⁹

Second, as the regulators' familiarity with the new technology increases, the scope and methods of their engagement with FinTech change accordingly. For example, the SEC Distributed Ledger Technology Working Group in the US initially started as a Digital Currency Working Group in 2013 but has significantly expanded the scope of its work to cover DLT as a whole.

Third, domestic regulators engage in international cooperation and coordination in the FinTech area. Examples include various cooperation agreements, or "FinTech bridges," and Memoranda of Understanding. Since 2016, regulators from Abu Dhabi, Australia, Canada, China, France, Hong Kong, India, Japan, Kenya, Singapore, South Korea, Switzerland and the UK have entered into these agreements.¹³⁰

Fourth, regulators are establishing domestic hubs to foster the development of FinTech. Some of the notable examples include the ASIC Innovation

124. See *SEC Fintech Forum*, SEC, <https://www.sec.gov/spotlight/fintech> [<https://perma.cc/KAX7-RNDB>].

125. Press Release, CFTC, CFTC Launches LabCFTC as Major FinTech Initiative (May 17, 2017), <http://www.cftc.gov/PressRoom/PressReleases/pr7558-17> [<https://perma.cc/RN57-4SSZ>].

126. Hudson Lockett, *China's Central Bank Establishes Fintech Committee*, FIN. TIMES (May 14, 2017), <https://www.ft.com/content/5df262c8-a37e-3e04-aeb2-2f6b29ba4411>.

127. ЦБ РФ создал рабочую группу по изучению технологии blockchain [*The CB of the RF Has Created a Working Group to Study the Blockchain Technology*], INTERFAX (Sept. 18, 2015), <http://www.interfax.ru/business/467647> [<https://perma.cc/Z84S-KGGS>].

128. *International FinTech Conference 2017*, UK DEP'T FOR INT'L TRADE, <https://www.events.trade.gov.uk/fintech-conference-2017/>.

129. *Innovate: Themed Weeks*, FIN. CONDUCT AUTH., (May 4, 2017), <https://www.fca.org.uk/firms/innovate-innovation-hub/themed-weeks> [<https://perma.cc/T4K3-HGYA>].

130. *A Tale of 44 Cities*, *supra* note 110, at 21.

Hub in Australia,¹³¹ the FCA Innovation Hub in the UK,¹³² and the MAS FinTech Innovation Lab in Singapore¹³³

Fifth, supranational and international bodies are becoming increasingly involved in the regulation of FinTech. The European Commission announced the establishment of the Financial Technology Task Force in 2016,¹³⁴ followed by a public consultation on FinTech in 2017.¹³⁵ The FSB established the Financial Innovation Network to look at FinTech innovation from the perspective of financial stability and published its report in June 2017.¹³⁶ The International Organization of Securities Commissions (“IOSCO”) published its Research Report on Financial Technologies in February 2017.¹³⁷ In August 2017, the Basel Committee on Banking Supervision released a consultation paper on the implications of FinTech for the financial sector, which remained open for comment until the end of October 2017.¹³⁸ The IMF also joined the FinTech debate with its report published in June 2017.¹³⁹

Despite the variety of approaches to regulate FinTech¹⁴⁰ and attempts to identify the leaders in this area,¹⁴¹ existing regulatory frameworks have

131. *Innovation Hub*, AUSTL. SEC. & INV. COMM’N, <http://asic.gov.au/for-business/your-business/innovation-hub/> [<https://perma.cc/V63E-5UGM>].

132. *Innovate and Innovation Hub*, FIN. CONDUCT AUTH., (May 11, 2015), <https://www.fca.org.uk/firms/innovate-innovation-hub> [<https://perma.cc/JW8V-NNJ9>].

133. *MAS Establishes FinTech Innovation Lab*, MONETARY AUTH. OF SINGAPORE, (Aug. 24, 2016), <http://www.mas.gov.sg/News-and-Publications/Media-Releases/2016/MAS-establishes-FinTech-Innovation-Lab.aspx> [<https://perma.cc/NF3U-F2DE>].

134. Roberto Viola & Oliver Guersent, *European Commission Sets Up an Internal Task Force on Financial Technology*, EUROPEAN COMM’N, (Nov. 14, 2016), <https://ec.europa.eu/digital-single-market/en/blog/european-commission-sets-internal-task-force-financial-technology> [<https://perma.cc/D695-PEYJ>].

135. See EUROPEAN COMM’N, *supra* note 37.

136. See *generally Monitoring of FinTech*, FIN. STABILITY BD., <http://www.fsb.org/what-we-do/policy-development/additional-policy-areas/monitoring-of-fintech/> [<https://perma.cc/24RJ-QU2X>] (last visited Feb. 16, 2018); see also FIN. STABILITY BD., *supra* note 36.

137. IOSCO, *supra* note 78.

138. Basel Committee on Banking Supervision, *Sound Practices: Implications of Fintech Developments for Banks and Bank Supervisors Consultative Document*, BANK FOR INT’L SETTLEMENTS, (Aug. 2017), <http://www.bis.org/bcbs/publ/d415.pdf> [<https://perma.cc/BS47-K9W8>].

139. INT’L MONETARY FUND, *supra* note 112.

140. See, e.g., *International Comparative FinTech Overview: How the FinTech Regulatory Environment Compares Around the World*, BAKER MCKENZIE (June 2017), http://financialinstitutions.bakermckenzie.com/wp-content/uploads/sites/22/2017/06/Baker_McKenzie-Fintech_regulation_comparison_June2017.pdf [<https://perma.cc/J6FG-VT3W>].

141. See, e.g., *A Tale of 44 Cities*, *supra* note 110; *UK FinTech: On the Cutting Edge: An Evaluation of the International FinTech Sector*, EY (2016), [http://www.ey.com/Publication/vwLUAssets/EY-UK-FinTech-On-the-cutting-edge/\\$FILE/EY-UK-FinTech-On-the-cutting-edge.pdf](http://www.ey.com/Publication/vwLUAssets/EY-UK-FinTech-On-the-cutting-edge/$FILE/EY-UK-FinTech-On-the-cutting-edge.pdf) [<https://perma.cc/K7ZX-AJRT>]; see *The FinTech Index: Assessing Digital and Financial Inclusion in Developing and Emerging Countries*, ING (Nov. 2016), https://www.ing.nl/media/ING_EBZ_fintech-index-report_tcm162-116078.pdf [<https://perma.cc/3YZ5-JH8L>].

not matured enough to identify “best practices.” Many underlying challenges¹⁴² remain unresolved. Thus, any existing practices, particularly in the rule of law dimension, should be considered carefully.

Even where regulators have not formulated their policies in relation to FinTech, they often give informal signals to the industry, indicating that the authorities are in “listening mode.” A number of governments and regulators (e.g. in Australia,¹⁴³ the UK,¹⁴⁴ the US¹⁴⁵) have gone further and listed their respective priorities in the area of FinTech regulation.

142. See *supra* Section V.B.

143. See *Australia's FinTech Priorities*, AUSTRALIAN GOVERNMENT TREASURY, <https://fintech.treasury.gov.au/australias-fintech-priorities/> [<https://perma.cc/5NQV-9CE9>] (last visited Feb. 16, 2018).

144. See Mark Walport, *FinTech Futures: The UK as a World Leader in Financial Technologies*, GOVERNMENT OFFICE OF SCIENCE 1–13 (Mar. 2015), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413095/gs-15-3-fintech-futures.pdf [<https://perma.cc/3BYP-8GKD>]; *Business Plan 2017/18*, FINANCIAL CONDUCT AUTHORITY, <https://www.fca.org.uk/publication/business-plans/business-plan-2017-18.pdf> [<https://perma.cc/BK3R-UU9K>].

145. *Supporting Responsible Innovation in the Federal Banking System: An OCC Perspective*, OFFICE OF THE COMPTROLLER OF THE CURRENCY (Mar. 2016), <https://occ.treas.gov/publications/publications-by-type/other-publications-reports/pub-responsible-innovation-banking-system-occ-perspective.pdf> [<https://perma.cc/ANH9-YN7Q>].

*A. Kenya and South Africa as Key FinTech
Jurisdictions in the Region*

1. The Role of FinTech in Sub-Saharan Africa

The majority of the adult population in Sub-Saharan Africa is unbanked.¹⁴⁷ In absolute figures, over 340 million adults do not have a bank account.¹⁴⁸ Africa's banking sector is held back by factors like currency fluctuations and a low supply of products for savings, insurance, credit, and payment transactions.¹⁴⁹

FinTech plays a distinct role in the region. In many cases FinTech solutions appear in areas where traditional banks have been unprofitable and financial inclusion opportunities have not existed before.¹⁵⁰ This disparity forms the basis for the favorable perception of FinTech, both among the general population and among the incumbent financial institutions, which can cooperate with the emerging FinTech businesses to cover a larger portion

146. A large portion of this section is based on a similar consolidated piece published by the British Institute of International and Comparative Law. See DR. ANTON DIDENKO, BINGHAM CTR. FOR THE RULE OF LAW, REGULATORY CHALLENGES UNDERLYING FINTECH IN KENYA AND SOUTH AFRICA (2017), https://www.biiicl.org/documents/1814_regulation_of_fintech_in_kenya_and_south_africa_v_1.pdf?showdocument=1 [<https://perma.cc/NEV5-5RYJ>].

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147. Asli Demirgüç-Kunt, et. al., *The Global Findex Database 2014: Measuring Financial Inclusion around the World*, 13 (World Bank Policy Research Working Paper No. 7255), <http://documents.worldbank.org/curated/en/187761468179367706/pdf/WPS7255.pdf> [<https://perma.cc/C8UQ-RAXR>]. According to the revised data published by the World Bank in 2018, the percentage of unbanked population in Sub-Saharan Africa has reduced, albeit slightly: only 33% of the population in Sub-Saharan Africa aged above 15 years old own a financial institution account (compared to 29% in 2014). Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. Washington, DC: World Bank.

148. WORLD BANK GRP., *The Little Data Book on Financial Inclusion 2015*, ISSUU 9 (2015), <https://issuu.com/world.bank.publications/docs/9781464805523> [<https://perma.cc/24CD-DJMQ>]; see also Juan Pedro Moreno et al., *Banking: Billion Reasons to Bank Inclusively*, ACCENTURE 7, https://www.accenture.com/us-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_22/Accenture-billion-reasons-bank-inclusively.pdf [<https://perma.cc/GJQ4-M64G>].

149. INT'L FIN. CORP., *How Fintech Is Reaching the Poor in Africa and Asia: A Start-Up Perspective*, WORLD BANK GRP. (Mar. 2017), <https://www.ifc.org/wps/wcm/connect/f745fd31-a9aa-4736-b0ba-4ac2956f96dc/EmCompass+Note+34+DFS+and+FinTech+Mar+28+FINAL.pdf?MOD=AJPERES> [<https://perma.cc/J6LW-JUBX>].

150. *Id.*

of the market.¹⁵¹ In addition, there has been no major FinTech-related crisis in the region, resulting in an overall pro-FinTech sentiment. In contrast, a common perception exists in these areas that banking is for the rich, and standard banking procedures like opening a bank account can be “painfully bureaucratic.”¹⁵² In this capacity, FinTech opens the door to bridging the gap between the “poor” and the middle class.

At a recent pan-African conference, FinTech companies were listed as a key future driver of financial inclusion in the African region, alongside telecommunications companies, banks, messenger platforms and online retailers.¹⁵³ African demographics, with young people making up a large proportion of the population, are another important factor in FinTech promotion.¹⁵⁴

Despite the lack of wealth in the region, Sub-Saharan Africa is among the world leaders in mobile money usage.¹⁵⁵ According to a recent study, the 13 countries with the highest mobile money user bases in proportion to the population were all located in Sub-Saharan Africa.¹⁵⁶

At the same time, the number of highly successful FinTech businesses in the region remains low. A recent Deloitte study listed the low levels of

151. *Id.*

152. *Id.*

153. BOWMANS, *supra* note 80, at 5. For additional references to the positive disruptive effects brought by FinTech, see, e.g., Koffi, *supra* note 13.

154. See U.N. DEP'T OF INT'L ECON. & SOC. AFFAIRS, WORLD POPULATION PROSPECTS: THE 2017 REVISION, at Index line 155 row AZ, U.N. Doc. POP/9-1 (June 2017). The data suggests that over 60% of the population in Sub-Saharan Africa is under 25 years old. At the same time, the percentage of “digital natives,” i.e. those with five or more years of online experience remains much lower in the region (under 10%) compared to the world average of 30%. See UNITED NATIONS POPULATION FUND, THE POWER OF 1.8 BILLION: ADOLESCENTS, YOUTH AND THE TRANSFORMATION OF THE FUTURE 44, U.N. Doc. E/9500/2014, U.N. Sales No. E.14.III.H.1, 44, https://www.unfpa.org/sites/default/files/pub-pdf/EN-SWOP14-Report_FINAL-web.pdf [<https://perma.cc/R9QH-R262>].

155. Ronit Ghose et al., *Digital Disruption: How FinTech is Forcing Banking to a Tipping Point* 48 (Mar. 2016), <https://ir.citi.com/D%2F5GCKN6uoSvhhvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D> [<https://perma.cc/96PU-CMTM>].

156. According to the World Bank data, “21 percent of adults now have a mobile money account—nearly twice the share in 2014”, and these numbers are “easily the highest of any region in the world.” Demirgüç-Kunt et al., *Global Findex Database 2017*, *supra* note 147, at xi. Also noted by the World Bank data, all 10 countries in the world where the proportion of adults who own a mobile money account exceeds the number of adults with a financial institution account are located in Sub-Saharan Africa. These countries are Burkina Faso, Chad, Côte d’Ivoire, Gabon, Kenya, Mali, Senegal, Tanzania, Uganda, and Zimbabwe. *Id.* at 20.

government and regulatory support and lack of quality infrastructure as some of the existing barriers for growth.¹⁵⁷

2. Kenya and South Africa as Regional FinTech Centers

Kenya and South Africa stand out as the region's leaders not only in terms of financial inclusion, with the vast majority of the adult population having access to a bank or mobile money account,¹⁵⁸ but also as major FinTech centers. Until the recent revision of the list of the global FinTech hubs prepared by Deloitte, Johannesburg and Nairobi were the only cities on the African continent included in the list; now Lagos joins that list.¹⁵⁹

Kenya and South Africa are the regional leaders in various FinTech spaces.¹⁶⁰ Kenya is one of the world leaders in mobile money and home to perhaps the most well-known example of FinTech-based financial inclusion, M-Pesa.¹⁶¹ The share of the adult population in the country with a mobile money account exceeds 70%.¹⁶² In contrast, in South Africa, where consumers have much better access to bank accounts and cash out facilities,¹⁶³ the incentives for mobile money were lower and M-Pesa was discontinued in June 2016.¹⁶⁴ Shortly afterwards MTN, Africa's biggest wireless phone group, also scrapped its mobile money business in the jurisdiction, stating that the operating costs of running a mobile money platform had become "prohibitive."¹⁶⁵ Kenya and South Africa are the market leaders in raising online alternative finance: in 2015 they raised, respectively, USD 16.7 million and USD 15 million from online channels.¹⁶⁶ In addition, the two

157. *A Tale of 44 Cities*, *supra* note 110, at 16; *see also* ING, *supra* note 141, at 8.

158. WORLD BANK, *The Global Findex Database 2017*, https://globalfindex.worldbank.org/#data_sec_focus (last visited May 30, 2018) (data accessed through excel worksheet on website).

159. *A Tale of 44 Cities*, *supra* note 110, at 17.

160. Christie Uzebu, *The Rise and Rise of FinTech in Africa*, CPAFRICA, <https://www.cp-africa.com/2018/01/30/rise-rise-fintech-africa/> [https://perma.cc/UL62-NMND].

161. *Id.*

162. Demirguc-Kunt et. al., *The Global Findex Database 2017*, *supra* note 147, at 20.

163. *See, e.g.*, Buckley & Malady, *supra* note 96, at 11.

164. *See Vodacom to Discontinue M-Pesa in South Africa*, VODACOM, <http://www.vodacom.com/news-article.php?articleID=3268> [https://perma.cc/29JJ-Y346] (last visited Feb. 16, 2018).

165. *MTN Scraps Mobile Money Business in South Africa*, REUTERS (Sept. 15, 2016), <http://www.reuters.com/article/us-mtn-group-divestiture/mtn-scraps-mobile-money-business-in-south-africa-idUSKCN11L22B?il=0> [https://perma.cc/29JJ-Y346].

166. CAMBRIDGE CENTRE FOR ALTERNATIVE FINANCE & ENERGY 4 IMPACT, *THE AFRICA AND MIDDLE EAST ALTERNATIVE FINANCE BENCHMARKING REPORT 13* (Feb. 2017), https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2017-africa-middle-east-alternative-finance-report.pdf [https://perma.cc/P36Q-GHVZ].

countries host the largest number of technology hubs in Africa, according to the GSMA.¹⁶⁷

B. Some Observations Relating to FinTech Regulation in Kenya and South Africa

Analysis of existing publications and discussions with the various stakeholders in Kenya and South Africa helped to formulate a number of observations relating to the development of FinTech regulation in these countries. Some of these observations are relevant for both countries, while others are more jurisdiction-specific. The list below is not exhaustive, but only aims to flag the most pertinent matters in FinTech regulation that will form the basis of the suggestions proposed, *infra*, for the improvement of the regulatory framework.

1. General Observations for Both Kenya and South Africa

a. No Uniform Approach to Defining FinTech

As mentioned, the understanding of the term FinTech varies greatly within the industry. Some commentators treat FinTech as any new application of technology to existing financial products. Under this approach, not only the breakthrough technologies, but even a simple transition from paper-based to electronic means of product or service delivery would fall within the ambit of the term. Others call for a more restrictive approach to defining FinTech.

b. No Centralized Approach to FinTech Regulation

Both countries have no single FinTech-specific statute or regulation. FinTech businesses are regulated by a variety of statutes and rules governing different financial products, services and market participants, as well as other more general provisions (e.g. company laws, electronic communications laws etc.).¹⁶⁸

167. GSMA Intelligence, *Mobile Delivering Growth and Innovation Across Africa*, THE MOBILE ECONOMY: AFRICA 2016, 25 (2016), <https://www.gsmainelligence.com/research/?file=3bc21ea879a5b217b64d62fa24c55bdf&download> [<https://perma.cc/QHS8-ACFF>].

168. See discussion *infra*.

c. No Single Regulatory Policy on FinTech

Instead of formulating a single set of regulatory priorities related to FinTech, regulators generally respond to the more pressing issues individually, as the need arises. This can be illustrated by the banking authorities' response in both countries to the risks associated with virtual currencies, in the form of a position paper by the South African Reserve Bank ("SARB")¹⁶⁹ and notices to the public¹⁷⁰ and to the financial institutions¹⁷¹ by the Central Bank of Kenya.

d. Interest in FinTech Sandboxes

There is a rising interest in the concept of regulatory sandboxes for FinTech businesses. In June 2017, the Kenyan Capital Markets Authority launched its public consultation on the first proposed regulatory framework applicable to sandboxes in the jurisdiction.¹⁷² In South Africa, there is evidence of ongoing discussions regarding setting up a regulatory sandbox in the future.¹⁷³

e. Potential for New Principles-Based Regulation

In designing FinTech regulations, both jurisdictions are developing principles-based legal norms. In South Africa, the Protection of Personal Information Act ("POPI") imposes eight principles on entities processing personal information.¹⁷⁴ Other instruments also apply a principles-based approach.

169. *Position Paper on Virtual Currencies*, S. AFR. RES. BANK (Dec. 3, 2014), [https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem\(NPS\)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20Final_02of2014.pdf](https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20Final_02of2014.pdf) [<https://perma.cc/T2AA-JHSQ>].

170. *Public Notice: Caution to the Public on Virtual Currencies Such as Bitcoin*, CENT. BANK OF KENYA (Dec. 2015), https://www.centralbank.go.ke/images/docs/media/Public_Notice_on_virtual_currencies_such_as_Bitcoin.pdf [<https://perma.cc/B662-Z3T4>].

171. *Banking Circular No. 14 of 2015: Virtual Currencies - Bitcoin*, CENT. BANK OF KENYA (Dec. 18, 2015) https://www.centralbank.go.ke/uploads/banking_circulars/2075994161_Banking%20Circular%20No%2014%20of%202015%20Virtual%20Currencies%20-%20Bitcoin.pdf [<https://perma.cc/E2E4-TS3M>].

172. *Stakeholders' Consultative Paper on Policy Framework for Implementation of a Regulatory Sandbox to Support Financial Technology (Fintech) Innovation in the Capital Markets in Kenya*, CAP. MKT. AUTH. (June 2017), <https://www.cma.or.ke/index.php/news-and-publications/press-center/353-stakeholders-consultative-paper-on-policy-framework-for-implementation-of-regulatory-sandbox-to-support-financial-technology-fintech-innovation-in-the-capital-markets-in-kenya> [<http://perma.cc/VHR8-QYDT>] [hereinafter *Stakeholders' Consultative Paper*].

173. *Reserve Bank to Begin Testing Bitcoin and Cryptocurrency Regulations*, BUSINESSTECH (July 19, 2017), <https://businesstech.co.za/news/finance/186533/sa-reserve-bank-to-begin-testing-bitcoin-and-cryptocurrency-regulations/> [

174. These principles are: (i) accountability, (ii) processing limitation, (iii) purpose specification, (iv) further processing limitation, (v) information quality, (vi) openness,

Examples include the Financial Sector Regulation Act, Treating Customers Fairly, and the Retail Distribution Review.¹⁷⁵ In Kenya, the recent sandbox consultation document expressly states that “regulatory nimbleness, flexibility and responsiveness provided by *principle-based regulation* is even more important in the FinTech sector where thriving innovation is the lifeline of a vibrant business enterprise.”¹⁷⁶

f. Cybercrime Risks

In a 2016 cybercrime and cybersecurity study by Symantec, Kenya and South Africa were among the highest Sub-Saharan Africa countries in terms of cyber-attack numbers, malware, spam, and phishing hosts.¹⁷⁷ In an earlier study, South Africa was listed as having the third highest number of cybercrime victims worldwide.¹⁷⁸ According to the Global Economic Crime Survey, prepared by PWC in 2016, 32% of South African organizations reported being victims of cybercrime, while “most organizations [were] still not adequately prepared for, or even [understood] the risks they [faced].”¹⁷⁹ Research by Serianu shows that over 70% of people in Kenya have experienced cybercrime.¹⁸⁰ Both countries are lacking a comprehensive cybercrime legal framework, but the legislative reform is underway; in Kenya, the Computer and Cybercrimes Bill was published in the Kenya

(vii) security safeguards and (viii) data subject specification. See Section 4(1)(a)-(h) of the Protection of Personal Information Act of 2013 § 4(1)(a)-(h). It should be noted that, while POPI was not fully implemented at the time of writing this paper, the new data protection authority—the Information Regulator—was established pursuant to Section 39. Protection of Personal Information Act of 2014 § 39. In addition, the President of South Africa appointed the Chairperson and members of the Information Regulator with effect from December 1, 2016, for a period of five years. INFORMATION REGULATOR (SOUTH AFRICA), <http://www.justice.gov.za/inforeg/> (last visited Feb. 16, 2018).

175. Bowmans, *supra* note 80, at 10.

176. *Stakeholders' Consultative Paper*, *supra* note 172, at 2 (emphasis added).

177. *Cyber Crime & Cyber Security: Trends in Africa*, SYMANTEC 25–28 (Nov. 2016), https://www.thehaguesecuritydelta.com/media/com_hsd/report/135/document/Cyber-security-trends-report-Africa-en.pdf [<https://perma.cc/F4D9-XF3U>].

178. *SA Ranks World's Third Highest Cybercrime Victims*, BUS. MEDIA MAGS (2016), <http://businessmediamags.co.za/sa-ranks-worlds-third-highest-cybercrime-victims-2/> [<https://perma.cc/9TV2-TPMW>].

179. PWC, *Global Economic Crime Survey 2016 2* (Mar. 2016), <https://www.pwc.co.za/en/assets/pdf/south-african-crime-survey-2016.pdf> [<https://perma.cc/DM3H-ES8Z>].

180. SERIANU, *Africa Cyber Security Report 2016 30* (2016), <http://www.serianu.com/downloads/AfricaCyberSecurityReport2016.pdf> [<https://perma.cc/4SVP-9Z2Y>].

Gazette in June 2017,¹⁸¹ while in South Africa the Cybercrimes and Cybersecurity Bill was made open for public consultation in July 2017.¹⁸²

2. South Africa

While there is no overarching FinTech-oriented regulatory framework in South Africa, the country has a developed financial services regulation in place, including the Banks Act (governing banks), the Financial Advisory and Intermediary Services Act (governing the provision of financial advice) and the Financial Markets Act (governing specific financial products and securities).¹⁸³ The regulation of financial services is undergoing a significant change: the Financial Sector Regulation Act, which was signed by the President into law in August 2017,¹⁸⁴ introduces two brand new regulators: the Prudential Authority¹⁸⁵ and the Financial Sector Conduct Authority,¹⁸⁶ adding an element of uncertainty in the context of future regulation.

Some discussants observed that the sector-specific regulation in South Africa may create obstacles for bringing together technology companies and financial institutions.

a. Social and Economic Impact Assessment

The South African government has stressed the importance of forward-looking regulation and ex ante analysis of the new rules. In October 2015, South Africa introduced the new Socio-Economic Impact Assessment System (“SEIAS”).¹⁸⁷ According to the published guidelines, all Cabinet Memoranda seeking approval for draft policies, bills, or regulations must include an impact assessment that is signed off by a special SEIAS unit.¹⁸⁸ An interdepartmental Steering Committee oversees SEIAS implementation and also provides

181. The Computer and Cybercrimes Bill, No. 29 (2017) KENYA GAZETTE SUPPLEMENT No. 91.

182. Cybercrimes and Cybersecurity Bill, GN 75 of GG 40487 (9 Dec. 2016). *See also Cybercrimes and Cybersecurity Bill [B6–2017]*, PARLIMENTARY MONITORING GRP., <https://pmg.org.za/call-for-comment/567/> [<https://perma.cc/4N7C-7NPX>] (last visited Mar. 30, 2018).

183. Banks Act 94 of 1990 (S. Afr.); Financial Advisory and Intermediary Services Act 37 of 2002 (S. Afr.); Financial Markets Act 70 of 2013 (S. Afr.).

184. Government Gazette; Republic of South Africa, GN 626 of GG 41060 (22 Aug. 2017).

185. *Id.* ch. 3.

186. *Id.* ch. 4.

187. *Socio-Economic Impact Assessment System (SEIAS) Guidelines*, DEP’T: PLAN., MONITORING AND EVALUATION 3–4 (May 2015), <http://www.dpme.gov.za/keyfocusareas/Socio%20Economic%20Impact%20Assessment%20System/SEIAS%20Documents/SEIAS%20guidelines.pdf> [<https://perma.cc/C3B5-65MJ>].

188. *Id.*

guidance and support in the implementation of SEIAS.¹⁸⁹ The Department of Planning, Monitoring and Evaluation (“DPME”) is responsible for the establishment of a SEIAS unit to ensure the implementation, quality control and capacity support.¹⁹⁰

The SEIAS procedure aims to establish a “thought-through” process rather than a box-ticking exercise.¹⁹¹ The first steps in the implementation of the new initiative have already been made; in his 2016 Budget Speech, Pravin Gordhan, the former Minister of Finance of South Africa, noted the ongoing review of a large number of bills and plans “as part of the new socio-economic impact assessment programme.”¹⁹²

The concept of social and economic impact assessment will be particularly useful in shaping the future FinTech regulation: a comprehensive analysis of the potential impact of the new technologies and proposed measures to regulate them will enhance the quality of the regulatory response and will allow regulators to focus on those areas where the need for intervention is highest.

b. Legal Status of Virtual Currencies

The regulatory approach in relation to virtual currencies is summarized in a Position Paper on Virtual Currencies NPS 02/2014 (Virtual Currencies Position Paper) by the SARB.¹⁹³ This document sets out the various pieces of legislation and analyzes virtual currencies by applying the existing concepts and rules.¹⁹⁴ It concludes that the SARB “does not oversee, supervise or regulate the [virtual currencies] landscape, systems or intermediaries for effectiveness, soundness, integrity or robustness” and that “activities related to the acquisition, trading or use of [virtual currencies]. . . are performed at the end-user’s sole and independent risk.”¹⁹⁵ While virtual currencies

189. *Id.* at 3–4.

190. *Id.*

191. *Presentation on Socio-Economic Impact Assessment System (SEIAS)*, DEP’T: PLAN., MONITORING AND EVALUATION 4 (Nov. 20, 2015), <http://www.dpme.gov.za/keyfocusareas/Socio%20Economic%20Impact%20Assessment%20System/SEIAS%20Documents/Presentation%20on%20SEIAS-%20Nov%202015.pdf> [<https://perma.cc/DZ34-RJEK>].

192. Pravin Gordhan, Minister of Finance, 2016 Budget Speech (Feb. 24, 2016), <http://www.nda.agric.za/docs/speeches/parvin%20gordan%20budgetspeech2016.pdf> [<https://perma.cc/XYJ2-B6AJ>].

193. *See generally Position Paper on Virtual Currencies*, *supra* note 169.

194. *Id.*

195. *Id.* at 12.

were not considered by the SARB as posing significant risks, the regulator reserved the right to reverse its position in case regulatory intervention was required.¹⁹⁶

While there has been no formal revision of the Virtual Currencies Position Paper, in March 2016 the SARB established a “multi-disciplinary task team” to consider the “regulatory, supervisory and technological opportunities offered by block chain [sic] and distributed ledger technologies.”¹⁹⁷ This new working group may lead to the development of a new regulatory approach to cryptocurrencies in South Africa.

Interestingly, the SARB was reported as considering the possible benefits of issuing a national digital currency at some point in the future,¹⁹⁸ although so far, the regulator has adopted a cautious approach.¹⁹⁹ The need to better understand the underlying technology and possible risks are not the only concerns faced by the regulator. If the idea of an electronic fiat (“e-fiat”) currency²⁰⁰ issued by the central bank is indeed on the regulator’s agenda, this might create a tangible disincentive to regulate other cryptocurrencies (such as Bitcoin), which may compete with the “official” e-fiat. This, in turn, raises the question as to who will ultimately introduce the regulatory measures in the digital currencies: the local regulators (with their potential disincentives due to possible issuance of e-fiat) or the international standard-setters.²⁰¹

Unregulated cryptocurrencies do not involve AML/CFT checks, and, while not recognized as legal tender, they can be used to move large volumes of value with no real means to identify the actual transacting parties. The question thus remains as to whether these concerns warrant regulatory intervention. Currently, the relevant client identification rules in South Africa are listed in the Financial Intelligence Centre Act (FICA), which contains a closed list of entities subject to the AML/CFT duties in Schedule 1.

196. *Id.* at 12–13.

197. *Annual Oversight Report: National Payment System Department*, S. AFR. RES. BANK 9 (2015-2016), [https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem\(NPS\)/Documents/Oversight/Annual%20oversight%20Report%202015-2016.pdf](https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Documents/Oversight/Annual%20oversight%20Report%202015-2016.pdf) [<https://perma.cc/U6RP-4RU5>].

198. *See, e.g.*, Prinesha Naidoo, *South Africa Open to Digital Currency*, MONEYWEB (Feb. 2, 2017), <https://www.moneyweb.co.za/news/tech/south-africa-open-to-digital-currency/> [<https://perma.cc/6JQ7-L894>].

199. *See* Riksbank, *supra* note 90.

200. A currency that is not backed by a physical commodity, such as gold.

201. In its 2016 report on virtual currencies, the IMF concluded that, “as experience is gained, consideration could be given to developing standards and best practices to provide guidance on the most appropriate regulatory responses to [virtual currency] schemes in different fields.” INT’L MONETARY FUND, *Virtual Currencies and Beyond*, *supra* note 91, at 36. The Financial Action Task Force’s recommendations on virtual currencies are one of the first steps in this direction. *See Guidance for a Risk-Based Approach: Virtual Currencies*, FIN. ACTION TASK FORCE (June 2015), <http://www.fatf-gafi.org/media/fatf/documents/reports/Guidance-RBA-Virtual-Currencies.pdf> [<https://perma.cc/N6TM-854C>].

To the extent that certain businesses engaged in operations with virtual currencies are not covered by FICA, an amendment of Schedule 1 is required to extend the relevant obligations to them.

Some of the discussants suggested that, despite the co-existence of various regulators in South Africa (Financial Services Board, Financial Intelligence Centre), the guidance of next steps in the regulation of virtual currencies is likely to come from the SARB, which sets the tone.²⁰² Hence, unless the SARB reverses its current hands-off approach, it is unlikely that different regulatory measures will be adopted by the other regulators in the area of virtual currencies.

c. Mobile Money Regulation

The regulatory approach to mobile money is formulated in the Position Paper on Electronic Money NPS 01/2009, in which the SARB differentiates between payments made to a third person to whom the payment is due and sending electronic value to a beneficiary who can encash that value without any obligation to that beneficiary.²⁰³ The former activity could be provided by non-banks as payment service, but the latter would be classified as “deposit-taking” under the Banks Act and require a license.²⁰⁴

d. Crowdfunding Regulation

There is no bespoke crowdfunding regulation in South Africa. In its 2016 newsletter, the Financial Services Board explained that it was in the process of analyzing the 2015 IOSCO report “SME Financing through Capital Markets”²⁰⁵ to consider how to structure the crowdfunding rules.²⁰⁶ At the same time, the regulator noted that existing legislation might already

202. This proposition was made orally by discussants during a roundtable on FinTech regulation that the author organized in Johannesburg in September 2017.

203. *Position Paper on Electronic Money*, S. AFR. RES. BANK 5–7 (Nov. 2009), [https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem\(NPS\)/Legal/Documents/Position%20Paper/PP2009_01.pdf](https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/PP2009_01.pdf) [<https://perma.cc/JY4Q-EV7T>].

204. *Id.*

205. *SME Financing Through Capital Markets*, INT’L ORG. OF SEC. COMMISSIONS (July 2017), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD493IOSCOPD554IOSCOPD554.pdf> [<https://perma.cc/7SNC-67S9>].

206. *FSB Bulletin: Strengthening South Africa’s Financial Institutions*, FIN. SERV. BOARD 15, <https://www.fsb.co.za/Departments/communications/Documents/2016%20FSB%20Bulletin%20First%20Quarter.pdf> [<https://perma.cc/RW6J-8Q9W>].

cover crowdfunding activities, depending on their mode of operation.²⁰⁷ First, the Banks Act may apply where crowdfunding involves deposit-taking.²⁰⁸ Second, the Companies Act applies to companies and, in the case of public offerings, establishes disclosure requirements.²⁰⁹ Third, if investments are pooled and channeled into securities, the Collective Investment Schemes Control Act will apply.²¹⁰ Fourth, the provision of intermediary services or advice in relation to financial products will trigger the Financial Advisory and Intermediary Services Act.²¹¹ Fifth, the Financial Markets Act applies where the online platform matches investors with issuers and securities are traded on an over-the-counter basis.²¹² Sixth, if the platform matches lenders with borrowers to provide unsecured loans, this will trigger the application of the National Credit Regulation Act.²¹³ Consequently, market participants are encouraged to adopt a pro-active approach:

A person interested in partaking in crowdfunding activity either by offering it or as an investor is advised to contact the [Financial Services Board] beforehand to establish whether the activity falls within the sphere of regulation . . . as otherwise they may fall foul of the law.²¹⁴

The Financial Services Board was reported to be considering the feasibility of establishing specific rules for equity-based crowdfunding by June 30, 2017, although no changes have been introduced to date.²¹⁵

e. Organizational Matters

Discussants at the roundtable felt that not enough dialogue took place between the regulators and other stakeholders in the FinTech space. While the possibility of industry self-regulation²¹⁶ was mentioned, it was noted that the diversity of FinTech businesses would make it problematic. Nevertheless, the need for greater representation, or a “voice,” of the industry is highly desirable to shape the future regulation in the FinTech area.

207. *Id.*

208. *Id.*

209. *Id.*

210. *Id.*

211. *Id.*

212. *Id.*

213. *Id.*

214. *Id.*

215. Stephen Timm, *FSB Misses Its Own Crowdfunding Deadline*, VENTUREBURN (July 4, 2017), <http://ventureburn.com/2017/07/fsb-misses-crowdfunding-deadline/> [<https://perma.cc/HAL6-BYZC>].

216. One of the most recent examples includes the establishment of the South African Financial Blockchain Consortium, in which two regulators (the SARB and the Financial Services Board) participate as observers. *Members*, S. AFR. FIN. BLOCKCHAIN CONSORTIUM, <http://www.safbc.co.za/members/> [<https://perma.cc/NN7K-GSQ3>] (last visited Feb. 16, 2018).

3. Kenya

a. Mobile Money

Kenya is home to one of the biggest success stories in the history of FinTech. The mobile money platform M-Pesa, which began operation in 2007, contributed to a dramatic increase in financial inclusion by providing access to financial services for the majority of the adult population in the country.²¹⁷ According to the most recent available statistics report by the Communications Authority of Kenya (July-September 2017), M-Pesa dominates the local mobile money transfer market, with over 22.7 million subscriptions out of a total of 28 million, and 428 million transactions out of the grand total of just over 537 million.²¹⁸

The impact of the M-Pesa platform on the overall economy in Kenya is significant. The volume of transactions on the platform is equivalent to over 40% of the country's GDP.²¹⁹ The 2017 Kenyan Budget Policy Statement posited that in case of a possible disruption of the mobile money payment channels "the impact would be substantial."²²⁰

Various attempts have been made to level the playing field for the other market participants. In 2014, the Communications Authority of Kenya

217. See Hughes & Lonie, *supra* note 6; Benjamin Ngugi, Matthew Pelowski, & Javier G. Ogembo, *M-pesa: A Case Study of the Critical Early Adopters' Role in the Rapid Adoption of Mobile Money Banking in Kenya*, 43 ELEC. J. ON INFO. SYS. IN DEVELOPING COUNTRIES No. 1 (2010), <https://onlinelibrary.wiley.com/doi/abs/10.1002/j.1681-4835.2010.tb00307.x>; Mercy W. Buku & Michael W. Meredith, *Safaricom and M-Pesa in Kenya: Financial Inclusion and Financial Integrity*, 8 WASH. J.L. TECH. & ARTS 375 (2013); Isaac Mbiti & David N. Weil, *Mobile Banking: The Impact of M-Pesa in Kenya* (Nat'l Bureau of Econ. Research Working Paper, No. 17129), <http://www.nber.org/papers/w17129.pdf> [<https://perma.cc/BWP6-XPM8>].

218. *First Quarter Sector Statistics Report for the Financial Year 2017/2018*, COMM. AUTH. OF KENYA 13 (July-Sept. 2017), <http://www.ca.go.ke/images/downloads/STATISTICS/Sector%20Statistics%20Report%20Q1%20%202017-18.pdf> [<https://perma.cc/3SJ6-HSNF>]. Compare these statistics to Tanzania's much more competitive market. *Quarterly Communications Statistics Report*, TANZANIA COMM. REG. AUTH. 5 (April-June 2017), <https://www.tcra.go.tz/images/documents/telecommunication/TelCom-Statistics-June-2017.pdf> [<https://perma.cc/UJ6M-76UU>].

219. Joshua Masinde, *Kenya's M-Pesa Platform Is So Successful Regulators Worry It Could Disrupt the Economy*, QUARTZ AFR. (Dec. 28, 2016), <https://qz.com/873525/safaricom-m-pesa-has-kenyas-government-worried-what-happens-in-the-event-of-a-crash/> [<https://perma.cc/ASM6-PFUA>]. See also Buckley & Malady, *supra* note 96, at 13 n.33.

220. *2017 Budget Policy Statement*, REPUBLIC OF KENYA 83 (Nov. 2016), <http://treasury.go.ke/component/jdownloads/send/172-budget-policy-statement/459-2017-budget-policy-statement.html> [<https://perma.cc/444X-ELMX>].

ordered Safaricom (the mobile operator which controls M-Pesa) to open up its network.²²¹ This was followed by plans to ensure full interoperability of mobile money networks in 2017²²² and even proposals to separate the mobile money business (M-Pesa) from the controlling operator earlier the same year.²²³

b. Regulate or “Wait and See”

During the roundtable discussions, M-Pesa’s dominant position in Kenya was used as an example of when regulations can significantly lag behind the development of technology.²²⁴ At launch of M-Pesa in 2007, the Central Bank of Kenya only issued a “Letter of No Objection” to Safaricom;²²⁵ the dedicated payment systems regulations were rolled out much later,²²⁶ starting with the adoption of the National Payment System Act in 2011 and the National Payment System Regulations in 2014.²²⁷

While it is clear that the regulation was falling behind M-Pesa’s development, in other areas of FinTech a more forward-looking regulatory approach can be observed. Recent examples include the warnings issued by the Central Bank of Kenya in relation to virtual currencies. These measures are discussed in the following paragraphs.

221. See Buckley & Malady, *supra* note 96, at 20.

222. Abdi Latif Dahir, *The World’s Most Successful Mobile Money Market is Introducing Cross-Network Transfer Systems*, QUARTZ AFR. (May 11, 2017), <https://qz.com/981381/kenya-is-set-to-introduce-interoperability-for-mobile-money-transfer-among-telecommunication-networks/> [https://perma.cc/CP35-U5VM].

223. Muthoki Mumo, *We Will Not Punish Success, Regulator Says of Safaricom*, DAILY NATION (Mar. 14, 2017), <http://www.nation.co.ke/business/Telco—competition-watchdogs-rule-out-Safaricom-split-option/996-3850174-format-xhtml-s3vnpaz/index.html> [http://perma.cc/MF38-CD9B]. A recent pilot by Airtel and Safaricom might be the first step towards interoperability. See Saruni Maina, *Kenyans to Send and Receive Mobile Money Across Networks as Interoperability Pilot Kicks Off*, TECH WEEZ (Jan. 19, 2018), <http://www.techweez.com/2018/01/19/mobile-money-interoperability-kenya-2/> [http://perma.cc/H2GB-82DC].

224. Following negative publicity, the Central Bank of Kenya published a statement in January 2009 entitled “Mobile Phone Financial Services in Kenya,” which acknowledged that “regulation generally lags behind innovation and a pragmatic approach [had been] adopted with regard to the review of M-Pesa.” *Enabling Mobile Money Transfer: The Central Bank of Kenya’s Treatment of M-Pesa*, ALLIANCE FOR FIN. INCLUSION 12, https://www.afi-global.org/sites/default/files/publications/afi_casestudy_mpesa_en.pdf [https://perma.cc/FCZ4-K4AS].

225. *Id.* at 1.

226. See Barnabas Andiva, *Mobile Financial Services and Regulation in Kenya*, COMPETITION AUTH. OF KENYA 6–7, https://static1.squarespace.com/static/52246331e4b0a46e5f1b8ce5/t/5534a332e4b078bae80cbaeb/1429513010529/Barnabas+Andiva_Mobile+Money+Kenya.pdf [https://perma.cc/E4ZK-U4CP].

227. See generally The National Payment System Act, No. 39 (2011) KENYA GAZETTE SUPPLEMENT No. 119 §§ 3, 4.

c. Virtual Currencies

In 2015, the Central Bank of Kenya issued several clarifications concerning the legal status of virtual currencies, such as Bitcoin. The warning addressed to the general public noted:

Virtual currencies are traded in exchange platforms that tend to be unregulated all over the world. Consumers may, therefore, lose their money without having any legal redress in the event these exchanges collapse or close business.²²⁸

The public notice consequently concluded that “[t]he public should therefore desist from transacting in Bitcoin and similar products.”²²⁹

In a separate Circular, this time addressed to financial institutions, the Central Bank of Kenya further stated:

The purpose of this Circular . . . is to caution all financial institutions against dealing in virtual currencies or transacting with entities that are engaged in virtual currencies. Financial institutions are expressly advised not to open accounts for any person dealing in virtual currencies such as Bitcoin. Failure to comply with this directive will lead to appropriate remedial action from the Central Bank.²³⁰

It remains to be seen whether the firm position of the banking authority will be affected in any way by the more FinTech-friendly approach of the other regulators. For instance, the Capital Markets Authority has recently confirmed the upcoming establishment of the sandboxing regime:

The ultimate objective of the authority is to provide Fintechs [sic] in the capital markets such as; finance smartphone “apps”; equity crowdfunding and peer-to-peer lending platforms; robo-advice for investment; blockchain technology; big data; crypto-currency and other finance focused technology products, with a conducive environment where they can test their innovations in a relaxed regulatory

231

d. Crowdfunding Regulation

Similar to South Africa, there is no specific crowdfunding regulation in Kenya. As a result, a number of regulators may have the authority to regulate various forms of crowdfunding, including the Central Bank of Kenya, the

228. *Public Notice: Caution to the Public on Virtual Currencies Such as Bitcoin*, *supra* note 170.

229. *Id.*

230. *Banking Circular No. 14 of 2015: Virtual–Bitcoin*, *supra* note 171, at 1.

231. Brian Ngugi, *Virtual Cash Splits Kenya Regulators*, BUS. DAILY AFR. (May 2, 2017), <http://www.businessdailyafrica.com/magazines/Virtual-cash-splits-Kenya-regulators/1248928-3910802-104rpgrz/index.html> [<http://perma.cc/72RL-DP4C>].

Capital Markets Authority and the Communications Authority of Kenya.²³² A recent study by the Cambridge Centre for Alternative Finance has identified a number of statutes and other regulations that might apply to crowdfunding platforms, depending on their mode of operation.²³³ These include: the National Payment Systems Act, Money Remittance Regulations, Kenya Information and Communications Regulations, the Microfinance Act, the Proceeds of Crime and Anti-Money Laundering Act, the Capital Markets Act, the Banking Act, and the Public Offer Regulations.²³⁴ The Public Fundraising Appeals Bill proposes additional licensing requirements in connection with fundraising systems.²³⁵

e. Organizational Matters

A number of discussants expressed concerns about the time required to obtain regulator's approval for start-up FinTech businesses. Others noted the lack of coordination among regulators and potential conflicts of jurisdiction in regulating FinTech.

C. Suggestions for Developing FinTech Regulation in Kenya and South Africa

In light of the existing challenges in the regulation of FinTech discussed in this Article and the observations concerning Kenya and South Africa, the following is a developed set of recommendations for the improvement of the regulatory framework in these jurisdictions. It is hoped that these suggestions will help build a regulatory regime that reflects the key rule of law principles, such as the need for clarity and legal certainty and equal treatment of different parties. In preparing these suggestions, the limited existing literature on this subject is taken into account,²³⁶ as well as the different regulatory objectives,²³⁷ and acknowledgement is provided that active FinTech promotion is just one of many possible approaches.

232. CAMBRIDGE CENTRE FOR ALTERNATIVE FINANCE & FSD AFRICA, CROWDFUNDING IN EAST AFRICA: REGULATION AND POLICY FOR MARKET DEVELOPMENT 29–30 (Jan. 2017), https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2017-05-eastafrica-crowdfunding-report.pdf [https://perma.cc/4K7J-NEPL].

233. *Id.*

234. *Id.* at 30–31.

235. Public Fundraising Appeals Bill, No. 99 (2014) KENYA GAZETTE SUPPLEMENT No. 28, 99.

236. See, e.g., Knight, *supra* note 9, at 25–29; Alan McQuinn, Weining Guo & Daniel Castro, *Policy Principles for Fintech*, INFO. TECH. & INNOVATION FOUND. (2016), <http://www2.itif.org/2016-policy-principles-fintech.pdf> [https://perma.cc/CYD7-NXVJ].

237. See discussion *supra* Section V.A.

- In the absence of dedicated (FinTech-specific) regulation, governments should formulate a clear set of priorities that inform the FinTech regulatory policy. This list should be made available to the public and should be realistic, as over-inclusive and mutually contradictory objectives can send mixed signals not only to the industry,²³⁸ but also to the regulators. In the absence of a single approach, governments may end up adopting different views on the development of FinTech and engage in regulatory competition with possible negative effects, such as a “race to the bottom.”
- It is important to ensure that regulations are easily understood by FinTech businesses and that the regulators and regulated understand each other. The concern is more relevant for start-up businesses which operate without a financial institution’s support or a FinTech incubator that acts as a “translator.” Regulators have a number of options to consider, such as preparing written explanatory materials that are clear for non-specialists or making staff available for industry consultations and encouraging contact with regulators.
- A comprehensive social and economic impact assessment can be used as an effective tool in developing regulatory priorities in the FinTech space. It can achieve a number of objectives, such as identifying areas with insufficient domestic demand or selecting the sector, technology or solution with the highest potential gain for the economy. An effective social and economic impact assessment should:
 1. be comprehensive, avoiding a “tick the box” approach;
 2. be independent, verifiable, and based on robust methodology;²³⁹
 3. consider not only the benefits, but also the costs of the new technology or regulation;

238. The signaling effect is particularly important in the FinTech space since start-ups and SMEs are not used to engaging in an ongoing relationship with the regulator and often prefer to “stay under the radar.” *See supra* Section V.B.3.c.2.

239. For concrete examples of challenges in calculating economic impact, see Hiroshi Nakaso, Deputy Governor of the Bank of Japan, Remarks at the University of Tokyo–Bank of Japan Joint Conference on “FinTech and the Future of Money” (Nov. 18, 2016); https://www.boj.or.jp/en/announcements/press/koen_2016/data/ko161118a.pdf [<https://perma.cc/EH75-Y6XA>].

4. ideally be performed on an ex ante and ex post basis.

In addition, such assessment should take into account the rule of law considerations. Perception of compliance (i.e. the expectation that the new rules will be complied with) is an important factor in calculating prospective economic benefit, as the benefits of a new regulation in a jurisdiction where rules are generally ignored may be negligible or non-existent. Similarly, on an ex post basis, the calculations should reflect not only the quantification of actual benefits, but also the actual level of compliance with the relevant rules.

- If certain categories of FinTech businesses are deemed to require preferential regulatory treatment (e.g. in cases of insufficient domestic demand to develop the new technology), the key rule of law principles should be observed. The corresponding rules should be clear and preclude regulatory arbitrariness.
- FinTech sandboxes should be designed with clear policy objectives and rule of law principles. The rule of law considerations should include the following:
 1. the selection criteria and methodology should be as clear and certain as possible;
 2. the outcomes of the applications should be made public, subject to any confidentiality requests by applicants;
 3. regulatory arbitrariness should be minimized: if selected businesses are perceived as having gained an *unfair* regulatory advantage not based on objective selection criteria, the sandbox regime may lose its attractiveness among FinTech firms;
 4. the extent of preferential treatment towards the sandboxed businesses should be limited and defined by the law.

The following questions illustrate some of the underlying policy questions that should be addressed. In all, this Article proposes six questions. First, should the degree of novelty and the strength of the business model proposed in the sandbox application be the only or main selection criterion?²⁴⁰ Second, is it relevant for selection purpose that the applicant (i) is an incumbent financial institution, (ii) is affiliated with an incumbent financial institution, (iii) is part of a FinTech incubator, or (iv) possesses other

240. See, e.g., *Financial Technology Regulatory Sandbox Framework*, BANK NEGARA MALAYSIA 4–5 (Oct. 18, 2016), <https://www.bnm.gov.my/index.php?ch=57&pg=137&ac=533&bb=file> [<https://perma.cc/R7U3-252L>] (describing the eligibility criteria established by the Malaysian regulator).

resources unavailable to the other applicants? How does this affect the outcome and how does one compare the different factual circumstances of the applicants?²⁴¹ Third, how relevant for the selection process is the regulator's own interest in exploring a particular technology? Fourth, how can regulators prevent abuse of the sandboxing regime? Is it feasible to introduce a regime whereby selected business are required to pay to participate in the sandbox (with waivers for some businesses, e.g. start-ups)? Fifth, are sandboxes designed to reduce the costs of compliance for selected businesses? If not, what is the benefit of a sandbox for a start-up FinTech company? Finally, does the sandboxing regime offer any spill-over benefits for the FinTech sector as a whole (e.g. in the form of publication of post-selection reports by the regulators and comments on the lessons learned from each sandbox project)?

- Regulators should consider introducing a principles-based approach in the regulation of FinTech to achieve three things: (1) to address matters which should be regulated regardless of the type of technology applied, whether present or future (possible areas include the basic principles of end user protection, such as prohibition of fraud); (2) to ensure continuity of the main principles of FinTech regulation in case of development of new, unforeseen, technologies; and/or (3) as an interim measure designed to preserve the fundamental basics of FinTech regulation until detailed rules-based provisions are developed.
- Regulators should aim to actively engage with the FinTech industry, despite its dispersed and decentralized nature. Depending on their priorities, regulators can wait for the industry to organize itself or adopt a pro-active approach to assist start-ups and SMEs in building their representative capacity. Since industry consolidation across the whole FinTech area is problematic, product or technology-based consolidation appears preferable, at least initially.

241. In a similar manner, the eligibility criteria established by the FCA for its regulatory sandbox refer to “a genuine need” to test the innovation, and the applicant’s chances of becoming eligible for the sandbox are reduced if it “is able to undertake the test easily without the support of the FCA.” *Sandbox Eligibility Criteria*, FIN. CONDUCT AUTH., <https://www.fca.org.uk/publication/documents/sandbox-eligibility-criteria.pdf> [https://perma.cc/Z6ZX-K9SW] (last visited Feb. 16, 2018).

- Domestic, and wherever feasible, international regulatory coordination should be improved. Regulatory competition should be avoided by eliminating overlaps in the corresponding mandates. Regulatory cooperation can be further enhanced by establishing product or technology-specific working groups including representatives from all the relevant regulators.
- Regulators may consider introducing special rules applicable to FinTech businesses that have a systemic importance for the economy due to the possibility of rapid growth exhibited by some FinTech companies.²⁴² At the same time, the criteria for identifying systemically important businesses should be clear and explicit, minimizing the opportunity for regulatory arbitrariness.
- While the development of dedicated FinTech regulation may take time, it is important to prioritize preventing the negative effects of new technologies, such as cybercrime.

VIII. CONCLUSION

Regulation of FinTech as a financial, but, more importantly, legal concept raises a wide range of difficulties, from defining the term itself to overcoming the “holdout start-up” problems. Adequate FinTech regulation is unlikely without a clearly defined overarching regulatory strategy and a set of priorities acting as policy beacons. While the regulatory response to FinTech differs from state to state, the challenges associated with the broad concept of “rule of law” (such as the need for legal certainty and prevention of unequal treatment) appear universally relevant, regardless of the selected FinTech policy.

The unique features of FinTech are getting increased attention from regulators across the globe, which often aim to better understand the new technology and its potential benefits, while also occasionally attempting to engage in international collaboration with the other regulators. Nonetheless, the regulatory response to FinTech is predominantly contained in domestic laws: full scale international cooperation in this field remains a distant opportunity.

In Sub-Saharan Africa, FinTech shows a lot of promise. The potential for financial inclusion and the absence of major crises resulting from the new technologies ensure an overall pro-FinTech sentiment. Kenya and

242. Sections 29–31 of the new Financial Sector Regulation Act in South Africa introduce a special regime for “systemically important financial institutions.” Financial Sector Regulation Act 2017, GN 853 of GG 41060 (Aug. 22, 2017). It remains to be seen, however, whether this regime is broad enough to cover all FinTech businesses.

South Africa, as the FinTech leaders in Sub-Saharan Africa, do not have an overarching FinTech-specific legal framework and address various issues as they emerge. In doing so, they often struggle with the fast-paced developments in technology, but occasionally attempt future-oriented measures (such as risk warnings concerning the use of certain new technologies).

The notable developments in FinTech regulation in the two jurisdictions include the new system of social and economic impact analysis in South Africa and the new sandbox regulatory framework in Kenya. If utilized properly, the former can provide a solid basis for setting regulatory priorities among various FinTech solutions. The latter has the potential to establish a win-win collaboration between the regulators and the regulated: authorities gain a better understanding of the new technology and the businesses have peace of mind while operating in a safe and controlled legal environment. Principles-based regulation is seen as a particularly attractive method of regulating such a complex and heterogeneous concept as FinTech. In the short term, however, regulators attempt to address the more pressing issues, such as cybercrime, via new legislative initiatives.

A deeper look into the regulation of FinTech developments, like cryptocurrencies or crowdfunding, might be warranted in the near future, as the regulators in both jurisdictions further develop their legal frameworks. Similarly, it would be useful to see what kind of regulatory response to FinTech will be adopted by other countries in the region and perform a comparative analysis. However, such analysis is beyond the scope of this Article and deserves a separate study.

