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Sandbox Boundaries

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ABSTRACT

Around the world, subnational and national regulatory sandboxes are being adopted in an effort to promote fintech innovation. These regulatory sandboxes seek to do so by rolling back some of the consumer protection and prudential regulations that would otherwise apply to firms trialing their financial products and services in the sandbox. While sacrificing such protections in order to promote innovation is problematic, such sacrifice may nonetheless be justifiable if, by working with innovators in the sandbox, regulators are educated about new technologies in a way that enhances their ability to effectively promote consumer protection and financial stability in other contexts. However, the market for fintech products and services transcends national and subnational borders, and this Article predicts that as competition among countries for fintech business intensifies, the phenomena of regulatory arbitrage and race to the bottom are likely to drive the regulatory sandbox model toward further deregulation and disincentivize vital information sharing among financial regulators about new technologies. After examining the regulatory sandboxes adopted by Arizona and the Consumer Financial Protection Bureau, as well as the proposals for transnational cooperation in the form of the Global Financial Innovation Network, this Article suggests that there is reason to be pessimistic about regulatory sandboxes in general and about information sharing across sandbox boundaries in particular.

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I. INTRODUCTION

The concept of using a "regulatory sandbox" to promote fintech innovation was pioneered by the United Kingdom's Financial Conduct Authority (FCA) in 2016.[1] The FCA uses its sandbox to provide limited relief from financial regulation and enforcement, with the intention of reducing regulatory barriers to entry for fintech entrepreneurs who wish to test their innovations with real customers.[2] Since 2016, several other countries around the world have adopted regulatory sandboxes for fintech, although what is meant by "regulatory sandbox" varies by jurisdiction.[3] The term "fintech" itself also suffers from a lack of definitional consensus; it is perhaps best thought of as an umbrella term encompassing the latest wave of internet-enabled (and often data-driven) innovations, including cryptoassets and distributed ledger technologies, crowdfunding, mobile payments, marketplace lending, and robo-advisory services.[4] In addition to these consumer-facing products and services, some commentators take the view that the term "fintech" also encompasses big data, artificial intelligence, high-frequency trading, and blockchain-based applications that are developed by financial institutions (or their vendors) for use in-house.[5]

The market for fintech products and services does not respect national borders, with many of these fintech innovations "being developed and deployed simultaneously in different financial markets."[6] To date, however, regulatory sandboxes have only been

1. Hilary J. Allen, *Regulatory Sandboxes*, 87 GEO. WASH. L. REV. 579, 596 (2019).
2. *Regulatory Sandbox*, FIN. CONDUCT AUTHORITY, https://www.fca.org.uk/firms/regulatory-sandbox [https://perma.cc/8GJC-LUPC] (last updated Oct. 23, 2019).
3. Allen, *supra* note 1, at 592.
4. *Id.* at 585–86.
5. *Id.*
6. GLOB. FIN. INNOVATION NETWORK (GFIN), CONSULTATION DOCUMENT 3 (2018), https://files.consumerfinance.gov/f/documents/bcfp_global-financial-innovation-network_consultation-document.pdf [https://perma.cc/K768-VK5V] [hereinafter CONSULTATION DOCUMENT]. In particular, the technologies of "AI, distributed ledger technology, data protection, regulation of

created at national—sometimes even subnational—levels of government. From a practical perspective, this often creates a mismatch between the regulatory regimes for fintech innovation and the markets that the innovators wish to serve. As a response to this mismatch, the FCA has spearheaded the formation of a "Global Financial Innovation Network" (GFIN) of financial regulators.[7] While the FCA had originally envisaged that the GFIN would coordinate a global regulatory sandbox that would facilitate multilateral trials of fintech innovations, it has since walked back that ambition in face of practical challenges.[8] Instead, the GFIN is currently focused on coordinating regulators overseeing simultaneous trials in different jurisdictions.[9]

The GFIN is used as a case study in this Article, as are the sandboxes recently adopted by the state of Arizona and the Consumer Financial Protection Bureau (CFPB). These case studies afford an opportunity to reexamine the literature on regulatory arbitrage and race to the bottom in the context of a borderless financial services market being transformed by fintech innovations. This Article demonstrates that a nuanced view of these phenomena, one that embraces the complexities of the incentives of public and private actors, is necessary to explain the evolution of sandboxes to date and to make any predictions about how they are likely to develop in the future.

This Author has previously argued that the key benefit of the regulatory sandbox model is its ability to educate regulators on new technologies; this is the best justification that can be offered for a regulatory model that otherwise undoes prudential regulations and consumer protection rules in the name of promoting innovation and competition.[10] This Article therefore explores how the information-generating characteristics of the regulatory sandbox interplay with our understanding of regulatory arbitrage and race to the bottom. Unfortunately, this Article concludes that regulators have strong incentives to cloister information within individual regulatory sandboxes, rather than share it across sandbox boundaries to improve regulatory practices everywhere.

This Article proceeds as follows: Part II provides some background on the current state of regulatory sandboxes around the

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securities and Initial Coin Offerings (ICOs), know your customer (KYC) or anti-money laundering (AML), and green finance" are being developed on a global scale. *Id.* at 4.

7. *Id.* at 3.

8. Gina Conheady, *Is Fintech Ready for a Global Regulatory Sandbox?*, A&L GOODBODY (Nov. 27, 2018), https://www.algoodbody.com/insights-publications/is-fintech-ready-for-a-global-regulatory-sandbox [https://perma.cc/ZHL3-CAQC].

9. CONSULTATION DOCUMENT, *supra* note 6, at 6.

10. Allen, *supra* note 1, at 581.

world by explaining what they are and where they have been adopted. Part III considers regulatory sandboxes in a more theoretical light by exploring the competing regulatory goals implicated by the sandbox model. Part IV provides a brief introduction to the literature on regulatory arbitrage and race to the bottom, before using the GFIN and the Arizona and CFPB regulatory sandboxes as case studies that demonstrate the need for a nuanced understanding of these phenomena. In so doing, Part IV provides reasons to be pessimistic about the evolution of regulatory sandboxes, both because of their potential to undo protections for consumers and the financial system more broadly and because of the incentives that exist to stymie the flow of information about innovation among regulators. Part V concludes.

II. WHAT ARE REGULATORY SANDBOXES AND WHO HAS ADOPTED THEM?

Because the financial industry is highly regulated, technology entrepreneurs seeking to enter the market for financial services often face significant regulatory barriers to entry.[11] Even for established financial institutions, determining how regulation will apply to a new financial product can be a daunting and expensive exercise.[12] Responding to regulation's potential to hinder innovation by both start-ups and regulated entities, several jurisdictions around the world have adopted "regulatory sandboxes" designed to allow innovators to conduct a limited test of fintech products and services in a lenient regulatory environment.[13] The United Kingdom's FCA was the first to implement a fintech regulatory sandbox. Since its inception in 2016, a number of other jurisdictions (including Australia, Bahrain, Brunei, Canada, Hong Kong, Indonesia, Malaysia, Mauritius, the Netherlands, Singapore, Switzerland, Thailand, and the United Arab Emirates) have followed the FCA's lead.[14]

It is important to note that there has been significant variation in the forms of the regulatory sandboxes that have been adopted, with the result that the term "regulatory sandbox" often means different things in different jurisdictions.[15] There has also been significant variation in the stated objectives of the sandboxes that have been implemented around the world, with one survey listing the following alternatives: "[s]upport financial innovation and FinTech firms who are

11. *Id.* at 589.
12. *Id.* at 588.
13. *Id.* at 592.
14. Dirk A. Zetzsche et al., *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, 23 FORDHAM J. CORP. & FIN. L. 31, 64 (2017).
15. *See* Allen, *supra* note 1, at 592.

seeking to offer innovative new products, services, or business models"; "[f]oster a financial services system that is more efficient and manages risks more effectively"; "[u]nderstand how emerging technologies and business models interact with the regulatory framework and where it may lead to barriers to entry"; "[p]romote effective competition in the interest of consumers"; and "[p]romote financial inclusion for consumers."[16]

Finally, there is also significant variation in the practical implementation of regulatory sandboxes around the world. Some jurisdictions allow a broad range of financial products and services to be tested in sandboxes, whereas others, such as Australia and Hong Kong, are much more restrictive.[17] Most jurisdictions place limitations on the duration of testing—typically, from six months to two years[18]—but a few outliers do not specify any limit on the duration of the sandbox trial.[19] The United Kingdom's regulatory sandbox was structured to promote iterative dialogue between innovators and regulators, but other jurisdictions—notably Australia—have done less to promote this type of interaction in their regulatory sandboxes.[20]

In the United States, Congress has not yet taken any action to implement a regulatory sandbox at the federal level. While some states have adopted or are contemplating adopting regulatory sandboxes,[21] these can only allow for access to consumers residing in their state. The CFPB has attempted to implement a national regulatory sandbox by way of executive action, but the legality of that effort is uncertain: in

16. CONSULTATION DOCUMENT, *supra* note 6, at 17.

17. *See* Allen, *supra* note 1, at 599 (discussing the limitations on the Australian sandbox); *Fintech Supervisory Sandbox (FSS)*, H. K. MONETARY AUTHORITY, https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech-supervisory-sandbox.shtmlshtmlshtml [https://perma.cc/8PXL-9AZN] (last modified Sept. 24, 2019) (stating Hong Kong's sandbox is only available to licensed banks and technology firms that partner with licensed banks).

18. CONSULTATION DOCUMENT, *supra* note 6, at 18.

19. *See* BAKER MCKENZIE, A GUIDE TO REGULATORY FINTECH SANDBOXES ACROSS ASIA PACIFIC 5, 7 (2017), https://www.bakermckenzie.com/-/media/files/insight/publications/2018/01/qrg_ap_regulatoryfintech_jan18.pdf?la=en [https://perma.cc/S46M-DK27] (noting jurisdictions without specific limits include Hong Kong and Singapore).

20. Allen, *supra* note 1, at 598. Because there is no need for eligible start-ups to apply to the Australian Securities & Investments Commission for sandbox relief besides a notification requirement, this sandbox does not foster the same level of interaction as the FCA's sandbox. *Id.*

21. *See* Press Release, Mark Brnovich, Ariz. Attorney Gen., Arizona Becomes First State in U.S. to Offer Fintech Regulatory Sandbox (Mar. 22, 2018), https://www.azag.gov/press-release/arizona-becomes-first-state-us-offer-fintech-regulatory-sandbox [https://perma.cc/VEQ5-PGX8] (noting Arizona became the first US state to formally adopt a regulatory sandbox in March 2018); *Bill Status of SB3133*, ILL. GEN. ASSEMBLY, http://www.ilga.gov/legislation/BillStatus.asp?DocNum=3133&GAID=14&DocTypeID=SB&LegID=110721&SessionID=91&SpecSess=&Session=&GA=100#top [https://perma.cc/HR35-2S4F] (last visited Oct. 14, 2019) (noting a regulatory sandbox bill in Illinois is still pending).

December 2018, it issued a "Policy on No-Action Letters and the BCFP Product Sandbox."[22] The policy purports to provide two years of relief to qualifying applicants "from enforcement actions by any Federal or State Authorities, as well as from lawsuits brought by private parties."[23] However, this attempt to preempt state law has been criticized as overreaching by twenty-two state attorneys general, who have argued that the CFBP "cannot give applicants such a blanket safe harbor protecting them from enforcement actions by state and federal authorities."[24] The Conference of State Bank Supervisors has also issued a letter stating that "[s]tate regulators believe the extent of this relief exceeds the authority of the Bureau under Title X of the Dodd-Frank Act. . . . [T]he Bureau is not authorized to prevent state officials from enforcing federal consumer financial laws."[25]

It is therefore uncertain whether any federal regulatory sandbox is available in the United States. There is also significant uncertainty about how to approach fintech at the transnational level. While international financial regulatory bodies like the International Organization of Securities Commissions (IOSCO) and the Financial Security Board (FSB) have highlighted issues relating to fintech business models, they have not yet proposed any concrete solutions or standards. Instead, their activities could best be described as monitoring and generating research reports.[26] In January 2019, however, the United Kingdom's FCA helped found the GFIN, a transnational regulatory body focused on providing more concrete responses to the rise of fintech.[27]

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22. Policy on No-Action Letters and the BCFP Product Sandbox, 83 Fed. Reg. 64036 (proposed Dec. 13, 2018) (to be codified at 12 C.F.R.); *see* Rory Van Loo, *Making Innovation More Competitive: The Case of Fintech*, 65 UCLA L. REV. 232, 260–61 (2018) (explaining this policy was designed as an update to the CFPB's Project Catalyst, which permitted "innovative financial firms [to] apply for 'no-action letters.'" Project Catalyst did not allow the CFBP to provide relief from enforcement from the states, or any other federal financial regulatory authority, and so its utility was limited—only one firm sought a no-action letter from the CFPB in connection with Project Catalyst).

23. Policy on No-Action Letters and the BCFP Product Sandbox, 83 Fed. Reg. at 64042.

24. Kate Berry, *State AGs Assail CFPB Plan to Build Fintech Sandbox*, AM. BANKER (Feb. 12, 2019, 4:14 PM), https://www.americanbanker.com/news/state-ags-assail-cfpb-plan-to-build-fintech-sandbox [https://perma.cc/43DE-GT8U].

25. Conference of State Bank Supervisors, Comment Letter on Proposed Policy Guidance and Procedural Rule on No-Action Letters and Product Sandbox (Feb. 11, 2019), https://www.csbs.org/sites/default/files/2019-02/CSBS%20Letter--CFPB%20NAL%20Policy%20Revisions%20and%20Product%20Sandbox_%20021119%20FINAL%20NOSIG.pdf [https://perma.cc/F2RE-8GWL].

26. *See, e.g.*, FIN. STABILITY BD., FINANCIAL STABILITY IMPLICATIONS FROM FINTECH: SUPERVISORY AND REGULATORY ISSUES THAT MERIT AUTHORITIES' ATTENTION (2017), http://www.fsb.org/wp-content/uploads/R270617.pdf [https://perma.cc/9VGK-NCRQ]; INT'L ORG. OF SEC. COMM'NS, IOSCO RESEARCH REPORT ON FINANCIAL TECHNOLOGIES (FINTECH) (2017), https://www.iosco.org/library/pubdocs/pdf/IOSCOPD554.pdf [https://perma.cc/SFX6-Z4MB].

27. Conheady, *supra* note 8.

The GFIN's primary functions are:

> 1. [T]o act as a collaborative group of regulators to cooperate and share experience of innovation in respective markets, including emerging technologies and business models, and to provide accessible regulatory contact information for firms;
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> 2. [T]o provide a forum for joint RegTech work and collaborative knowledge sharing/lessons learned; and
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> 3. [T]o provide firms with an environment in which to trial cross-border solutions.[28]

The GFIN's ambition to be a network and discussion forum for national regulatory bodies is not particularly novel,[29] but its ambition to facilitate cross-border trials for new technologies is. While the FCA had initially envisaged "a full multilateral sandbox that allows concurrent testing and launch across multiple jurisdictions," the level of regulatory coordination necessary for a project has been conceded as too ambitious for now.[30] However, even bilateral coordination on sandbox trials is likely to prove an interesting experiment. Notwithstanding that the GFIN has stated that it does not desire to be "active in . . . assessing and articulating international standards, and best practices,"[31] the cooperation of its members on cross-border sandbox testing will undoubtedly be treated as a resource in developing best practices for sandbox development.

III. THE COMPETING REGULATORY GOALS IMPLICATED BY SANDBOXES

The implementation of regulatory sandboxes at the state, national, and possibly international level revives old questions about regulatory arbitrage and races to the bottom. It requires us to reckon with how our theoretical understanding of such concepts applies in the context of a post–Financial Crisis world animated by new fintech technologies. To provide further background for such a discussion in Part IV, this Part considers the goals that drive financial regulatory policies and see how they may conflict as jurisdictions consider how to address fintech generally, and more specifically, whether to adopt regulatory sandboxes.

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28. GLOB. FIN. INNOVATION NETWORK, TERMS OF REFERENCE FOR MEMBERSHIP AND GOVERNANCE OF THE GLOBAL FINANCIAL INNOVATION NETWORK (GFIN) 1 (2019), https://www.fca.org.uk/publication/mou/gfin-terms-of-reference.pdf [https://perma.cc/WB4G-8N6E].

29. Existing international financial regulatory bodies like the FSB and IOSCO already fulfill similar functions. For a discussion of the architecture of international financial law, see CHRIS BRUMMER, SOFT LAW AND THE GLOBAL FINANCIAL SYSTEM: RULE MAKING IN THE 21ST CENTURY 62–118 (2d ed. 2015).

30. Conheady, *supra* note 8.

31. CONSULTATION DOCUMENT, *supra* note 6, at 7.

The primary goals of financial regulation are the protection of consumers and investors, the promotion of financial stability, market efficiency and competition, and the prevention of financial crime.[32] Regulatory policy can sometimes promote all of these goals, but often the goals will conflict, and in some contexts it will be necessary to prioritize some goals over others.[33] Policy makers that adopt regulatory sandboxes typically do so in order to further the goals of efficiency and competition,[34] often at the expense of consumer and investor protection and, potentially, even financial stability. These policy makers hope that sandboxes will incentivize innovation that enables cheaper and more efficient delivery of financial services[35] and that sandboxes will also promote the competitiveness of a jurisdiction by enabling it to attract innovative businesses who will provide tax revenue and employment opportunities.[36] Many jurisdictions' sandboxes do have the additional goal of promoting consumer welfare, particularly by broadening access to and reducing the cost of financial services.[37] Some even have the stated goal of improving risk management,[38] which may ultimately be beneficial from a financial stability perspective. However, the regulatory barriers to entry that regulatory sandboxes seek to remove are typically regulations that protect consumers, investors, or the stability of the financial system, and the primary purpose of this deregulation seems to be the promotion of efficiency and competition.[39]

Except in the immediate aftermath of a crisis, there tends not to be any constituency agitating for improved consumer protection and financial stability regulation—at least, not an organized constituency that can match the intensity of the interests seeking to roll back such regulation.[40] To the extent that regulators agree to roll back consumer protection and financial stability regulations for firms conducting sandbox trials, regulatory sandboxes can be viewed as a type of deregulation that can harm an unrepresented public. While it might be theoretically possible for these regulators to replace consumer protection and financial stability rules with alternative arrangements—such as principles-based regulatory regimes which are

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32. JOHN ARMOUR ET AL., PRINCIPLES OF FINANCIAL REGULATION 61–69 (2016).

33. Hilary J. Allen, *The SEC as Financial Stability Regulator*, 43 J. CORP. L. 715, 730 (2018).

34. CONSULTATION DOCUMENT, *supra* note 6, at 17.

35. FIN. CONDUCT AUTH., REGULATORY SANDBOX LESSONS LEARNED REPORT ¶ 3.7 (2017), https://www.fca.org.uk/publication/research-and-data/regulatory-sandbox-lessons-learned-report.pdf [https://perma.cc/8ZFQ-UHYT].

36. Zetzsche et al., *supra* note 14, at 81.

37. CONSULTATION DOCUMENT, *supra* note 6, at 17.

38. *See id.*

39. Zetzsche et al., *supra* note 14, at 80–81.

40. John C. Coffee, Jr., *The Political Economy of Dodd-Frank: Why Financial Reform Tends to Be Frustrated and Systemic Risk Perpetuated*, 97 CORNELL L. REV. 1019, 1021 (2012).

less burdensome on innovators but equally effective in protecting consumers and financial stability[41]—such regimes can easily devolve into deregulation if they are not properly staffed and resourced.[42] Such a deregulatory outcome is particularly likely if the subject matter of the regime is highly complex and thus defies regulatory understanding and incentivizes deference to the regulated industry[43]—a real concern when dealing with complicated financial algorithms and other fintech innovations.[44]

Sandboxes therefore have very real deregulatory potential—but they can also afford some benefits to financial regulators seeking to promote consumer protection and financial stability. All such regulators share the need to understand the technology that is used to provide financial services, and this Author has argued that the most beneficial aspect of a regulatory sandbox is that it provides a partial solution to the informational challenges that financial regulators face when dealing with new technologies.[45] This Author has therefore argued that if a jurisdiction adopts a sandbox, it should be carefully designed to maximize information production and sharing, as well as to minimize harms to consumers and the financial system.[46]

Given that fintech sandboxes have only been around since 2016 (and therefore have not yet been tested during an economic downturn), it is difficult to make concrete judgments about the extent to which the regulatory sandboxes that have been adopted, and the fintech innovations they promote, are in fact sacrificing consumer or investor protection or financial stability. For example, we do not yet fully comprehend the scope of the discrimination and privacy violations that

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41. *See* Douglas W. Arner et al., *The Evolution of FinTech: A New Post-Crisis Paradigm?*, 47 GEO. J. INT'L L. 1271, 1311–12 (2016). In a principles-based regulatory regime, "more focus is given to the spirit of a regulation rather than solely following the rules and procedures by the letter," affording more flexibility to industry participants in how they satisfy regulatory goals. *See id.*

42. *See* Allen, *supra* note 1, at 602. For a discussion of the deregulatory impact of the principles-based regime adopted by the Financial Services Authority (the FCA's predecessor), see *id.*

43. *See* Cristie Ford, *New Governance in the Teeth of Human Frailty: Lessons from Financial Regulation*, 2010 WIS. L. REV. 441, 479 (2010) ("Without countervailing, independent-minded regulatory power to push back against self-interested industry conduct, the "creep" may run downwards—to more risk, less transparency, less systemic stability, and less consumer protection.").

44. *See* Allen, *supra* note 1, at 615. ("[I]f regulators come to rely on the providers of complex financial products and services for explanations about how they work, the result may be that regulation ultimately comes to reflect the worldview of the financial industry, rather than the objectives of society as a whole (this phenomenon is often referred to as 'cognitive capture').").

45. *See* Hilary J. Allen, *A New Philosophy for Financial Stability Regulation*, 45 LOY. U. CHI. L.J. 173, 209 (2013). For a discussion of the difficulties that regulators face in finding out about the existence of new products and services, let alone understanding their complexities, see *id.*

46. Allen, *supra* note 1, at 582.

consumers may be subjected to by financial algorithms capable of artificial intelligence.[47] Nor do we fully comprehend the financial stability implications of delegating financial risk management to such algorithms.[48] Regulators should therefore exercise caution before rolling back regulatory protections through regulatory sandboxes. To do otherwise would, as twenty-two state attorneys general stated in a letter to the CFPB, "give companies employing [fintech technologies] what may effectively be a permanent get-out-of-jail-free card."[49]

Even the benefits of regulatory sandboxes are difficult to judge at this stage: there are very limited empirical data from which to draw any conclusions about the extent to which sandboxes are succeeding in promoting efficiency and competition.[50] In the absence of such data, policy makers' decisions about whether to adopt and how to implement a regulatory sandbox are likely to be driven by value judgments about which regulatory goals to prioritize and by political considerations. The choice of regulatory goals is likely to be impacted by the mandates of the financial regulators implementing the regulatory sandbox. For example, the United Kingdom's FCA, the progenitor of the fintech regulatory sandbox concept, has a mandate to promote competition that most US financial regulators lack.[51] In general, mandates to promote competition or efficiency are likely to render a regulator more hospitable to the promotion of technological innovation, which may help explain the FCA's enthusiasm for the regulatory sandbox model. However, this Author, along with other scholars, has previously argued that because of the breadth of harm that financial crises can occasion, financial stability regulation should be the apex concern of any regulatory regime.[52] Consumer protection should also be a priority, given that, unlike the industry providing them with financial products and services, vulnerable consumers are often unable to organize to protect themselves.[53] However, regulatory arbitrage and races to the bottom associated with regulatory sandboxes may ultimately undermine these important regulatory goals.

47. *Exploring the Fintech Landscape: Hearing Before the S. Comm. on the Banking, Housing, and Urban Affairs*, 115th Cong. 4 (2017) (written testimony of Frank Pasquale, Professor of Law, University of Maryland), https://www.banking.senate.gov/imo/media/doc/Pasquale%20Testimony%209-12-17.pdf [https://perma.cc/UJ5A-2JFM].

48. Hilary J. Allen, Driverless Finance 3 (Apr. 3, 2019) (unpublished manuscript) (on file with author).

49. Berry, *supra* note 24.

50. Allen, *supra* note 1, at 612.

51. Financial Services and Markets Act 2000, c. 8, § 1E.

52. Allen, *supra* note 48, at 3–4.

53. *See supra* note 44 and accompanying text.

IV. REGULATORY ARBITRAGE AND RACE TO THE BOTTOM

A. Theory and History

Regulatory arbitrage and race to the bottom are perennial issues in both domestic and international financial regulation. "Regulatory arbitrage" refers collectively to the many strategies that can be used to achieve an economically equivalent outcome to a regulated activity while avoiding the legal constraints (colloquially, complying with the letter but avoiding the spirit of the law).[54] This Article focuses on the jurisdictional variant of regulatory arbitrage, whereby a market participant chooses to conduct business in a jurisdiction that affords a more favorable regulatory treatment to the business in question.[55] Jurisdictional arbitrage opportunities abound at the international level and also within a federal system like the United States where market participants can pick and choose among different federal and state regulators. The ability for a market participant to choose their own regulator can lead to what is known as "race to the bottom," a phenomenon where jurisdictions compete to lower their regulatory standards in order to attract business, resulting in a general deregulatory trend.[56] One jurisdiction's lowering of regulatory standards can have spillover effects, generating negative outcomes that are felt even in jurisdictions with more stringent legal regimes;[57] if a jurisdiction recognizes that its consumers and financial system may be harmed regardless of its own regulatory protections, it may seem logical to focus instead on reaping the benefits of innovation and competition by lowering regulatory standards itself.

If interpreted as simple coordination problems,[58] regulatory arbitrage and race to the bottom can be solved so long as jurisdictions

54. Professor Victor Fleischer defines regulatory arbitrage as "a perfectly legal planning technique used to avoid taxes, accounting rules, securities disclosure, and other regulatory costs" that "exploits the gap between the economic substance of a transaction and its legal or regulatory treatment." Victor Fleischer, *Regulatory Arbitrage*, 89 TEX. L. REV. 227, 229 (2010).

55. Elizabeth Pollman, *Tech, Regulatory Arbitrage, and Limits* 8 (European Corp. Governance Inst., Working Paper No. 455/2019, 2019), https://ecgi.global/sites/default/files/working_papers/documents/finalpollman.pdf [https://perma.cc/86V7-9657].

56. For a discussion of the dynamics of races to the bottom, see RICHARD SCOTT CARNELL ET AL., THE LAW OF FINANCIAL INSTITUTIONS 65 (5th ed. 2013).

57. Coffee notes that when it comes to financial stability, "many nations do not have to internalize the costs they impose on others, some nations will behave as 'free riders,' preferring that others bear the costs and encouraging regulatory arbitrage when it benefits them." John C. Coffee, Jr., *Extraterritorial Financial Regulation: Why E.T. Can't Come Home*, 99 CORNELL L. REV. 1259, 1269 (2014).

58. Coordination problems "are rooted in the need of certain kinds of uniformity on the one hand, and the absence of any inherent tendency for such uniformity spontaneously to emerge on the other hand." Robert C. Hockett, *Recursive Collective Action Problems: The Structure of*

share the information necessary to formulate the optimal regulatory solution and trust one another enough to commit to that solution.[59] Following this simplified line of thinking, attempts to arbitrage and undercut consumer protection and financial stability regulation can be solved relatively easily by agreements to apply consistently high standards across jurisdictions.[60] A more realistic perspective, however, recognizes that there is no one solution that is optimal for all parties involved; even with perfect information and trust, coordination can be elusive when jurisdictions have different incentives and policy preferences that they are trying to pursue.[61] As a result, the financial regulatory goals of consumer protection and financial stability—which, in the absence of a crisis, often lack an organized constituency to agitate for them[62]—have often been undercut by the forces of regulatory arbitrage and races to the bottom, facilitated by factions that prioritize efficiency and competition.

Such dynamics have been observed both domestically and internationally. Domestically, these dynamics have generally been discussed under the rubric of "preemption." Since the enactment of the National Bank Act in the 1860s, banks in the United States have had the option to charter at the national or the state level.[63] The implementation of this dual banking system ensured that issues regarding the extent to which federal financial regulation can preempt state financial regulation—and vice versa—have been alive for over a century. Over the years, the Office of the Comptroller of the Currency, the national bank regulator, has often succeeded in preempting state regulators trying to implement more stringent consumer financial protections.[64] In the lead up to the Financial Crisis, other federal regulators also neglected consumer financial protection with disastrous results,[65] and it took the Financial Crisis to galvanize support for

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Procyclicality in Financial and Monetary Markets, Macroeconomies and Formally Similar Contexts, J. FIN. PERSP., July 2015, at 1, 2.

59. Chris Brummer, *How International Financial Law Works (and How It Doesn't)*, 99 GEO. L.J. 257, 269 (2011).

60. "[T]he prevailing wisdom is that regulatory arbitrage can be counteracted by harmonization." Pollman, *supra* Note 55 at 2. There are, however, some scholars who object to harmonization either because of its second-order effects or because harmonization can generate further opportunities for regulatory arbitrage in the implementation phase. For a discussion of the work of these scholars, see Hilary J. Allen, *What Is "Financial Stability"? The Need for Some Common Language in International Financial Regulation,* 45 GEO. J. INT'L L. 929, 938–39 (2014).

61. *Id.*

62. *See supra* note 45 and accompanying text.

63. CARNELL ET AL., *supra* note 56, at 78.

64. See, for example, the seminal cases of *Barnett Bank of Marion Cty., N.A. v. Nelson*, 517 U.S. 25 (1996) and *Marquette Nat'l Bank of Minneapolis v. First of Omaha Serv. Corp.*, 439 U.S. 299 (1978).

65. Leonard J. Kennedy et al., *The Consumer Financial Protection Bureau: Financial Regulation for the Twenty-First Century*, 97 CORNELL L. REV. 1141, 1145 (2012).

ending this race to the bottom by enacting more robust federal consumer financial protection regulation. The Dodd-Frank legislation enacted in the aftermath of the Financial Crisis sought to alter the status quo in two ways. First, it sought to limit federal preemption authority by increasing "both the lawmaking and law enforcement functions of the states in the area of consumer financial protection."[66] Second, it created a new federal agency, the Consumer Financial Protection Bureau, with a mandate "to implement and, where applicable, enforce Federal consumer financial law consistently for the purpose of ensuring that all consumers have access to markets for consumer financial products and services and that markets for consumer financial products and services are fair, transparent, and competitive."[67] Given that these steps were taken to avoid races to the bottom in the area of consumer financial protection regulation, there is an unmistakable irony in the CFPB now seeking to utilize the regulatory sandbox model to preempt state consumer financial protection laws, an issue this Article will return to shortly.

If the history of federal preemption in the United States has been animated by concerns about consumer protection, at the international level, the primary concern is that *financial stability* will be compromised by regulatory arbitrage and races to the bottom. International financial regulation was first developed in the 1970s as a response to national concerns about negative spillover effects communicated from one jurisdiction to another by globalized capital flows.[68] An international consensus has since developed that the best way to avoid such spillover effects is to coordinate the rules that govern financial activity, and so international financial regulation has developed as a compilation of harmonized international standards.[69] The international financial regulatory standards adopted prior to 2008 proved insufficient to prevent a global financial crisis, and there has since been significant international regulatory activity with the aim of making the global financial system more resilient to a shock emanating from any one country.[70] Concerns about cross-border spillover effects

66. Arthur E. Wilmarth, Jr., *The Dodd-Frank Act's Expansion of State Authority to Protect Consumers of Financial Services*, 36 J. CORP. L. 893, 896 (2011).

67. Dodd-Frank Wall Street Reform and Consumer Protection Act § 1021, 12 U.S.C. § 5511(a) (2018); *see also* Kennedy et al., *supra* note 65, at 1145–46.

68. Brummer, *supra* note 59, at 265; Carl Felsenfeld & Genci Bilali, *The Role of the Bank for International Settlements in Shaping the World Financial System*, 25 U. PA. J. INT'L ECON. L. 945, 951 (2004).

69. Brummer, *supra* note 59, at 268–69.

70. *See id.* at 265, 276 (describing how, in the wake of the "deeply international nature of the ongoing financial crisis," several working groups comprised of representatives from G20 countries have "been tasked to develop reports and recommendations to strengthen international standards in areas like accounting, disclosure, and prudential management").

remain, though, notwithstanding this postcrisis reform. Gaps between international financial regulatory standards provide opportunities for regulatory arbitrage, and agile new fintech technologies are likely to be particularly adept at exploiting these regulatory gaps.[71] International vulnerabilities have also been exacerbated by the increased use of the internet to facilitate the provision of financial services across national borders.[72]

B. The Basic Theory as Applied to Regulatory Sandboxes

Understanding the standard accounts of regulatory arbitrage and race to the bottom can assist us—at least to some degree—in understanding recent developments in regulatory sandboxes. For example, Arizona could be viewed as having lowered regulatory protections for consumers in order to encourage fintech entrepreneurs to set up in Arizona and thus arbitrage the regulatory environment of their home states.[73] Arizona's actions could potentially spur a race to the bottom as states like Illinois and others contemplate their own regulatory sandboxes.[74] While the CFPB could arguably invoke federal preemption to set a floor requiring Arizona and other states to maintain more stringent consumer protection rules, the CFPB has not evinced any desire to do so, and so there is no legal limit on innovators taking advantage of Arizona's lowered regulatory standards.

In fact, the CFPB has purported to create its own regulatory sandbox that preempts consumer financial protection laws at both the state and federal level. The CFPB sandbox is designed to offer two years of relief from regulatory compliance;[75] this is longer than most jurisdictions offer but not entirely an outlier position. What is particularly unusual about the CFPB sandbox is that relief need not be

71. *See* Pollman, *supra* note 55, at 4 ("We might be especially concerned about large and potentially even growing amount of regulatory arbitrage in the tech industry because it is highly adaptive by its nature in the digital era.").

72. Brummer, *supra* note 59, at 266; Rosa Lastra & Jason Grant Allen, *Cyberspace and Fintech Borders*, FINTECHPOLICY.ORG (Jan. 21, 2019), https://fintechpolicy.org/2019/01/21/law-and-borders-the-regulation-of-internet-based-financial-services/ [https://perma.cc/R2CL-6NGG].

73. Press Release, Mark Brnovich, *supra* note 21; Zetzsche et al. have argued that one of the primary reasons for adopting a regulatory sandbox is its "signaling" function, in that it demonstrates a commitment to promoting fintech innovation in the hope of attracting entrepreneurs to the jurisdiction. Zetzsche et al., *supra* note 14, at 81.

74. Kendra Haar, Josh Boehm & Donald Mills, *Fintech Regulatory Sandboxes: Update on Arizona's Sandbox and Other Developments*, PERKINS COIE: VIRTUAL CURRENCY REPORT (Feb. 8, 2019), https://www.virtualcurrencyreport.com/2019/02/fintech-regulatory-sandboxes-update-on-arizonas-sandbox-and-other-developments/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+VirtualCurrencyReport+%28Virtual+Currency+Report%29 [https://perma.cc/8ZZK-Z2YQ].

75. Policy on No-Action Letters and the BCFP Product Sandbox, 83 Fed. Reg. 64036, 64037 (proposed Dec. 13, 2018) (to be codified at 12 C.F.R.).

sought by individual firms; instead, "[t]he Bureau invites applications from trade associations, service providers, and other third parties."[76] This will allow for much more expansive grants of regulatory relief than the typical sandbox, and if these grants preempt other state and federal consumer protection law, the CFPB's regulatory sandbox could become a potent force for deregulation.

The CFPB is also a member of GFIN, the Global Financial Innovation Network spearheaded by the United Kingdom's FCA. In theory, the GFIN could be viewed as a simple coordination mechanism, an attempt by nations to develop apolitical and expert best practices as to the operation of a regulatory sandbox that maximizes efficiency and promotes competition, while minimizing harm to consumers and financial stability. Once in place, such best practices could harmonize sandbox operation in different jurisdictions, preventing regulatory arbitrage and races to the bottom with respect to the regulation of fintech innovation.[77] However, this characterization of the GFIN is likely overly rosy, because (like much of the analysis in this Section) it is based on theoretical foundations that tend to oversimplify the incentives of those involved.

Discussions of regulatory arbitrage often neglect nonlegal impediments to setting up a business in a new jurisdiction. These nonlegal constraints may be decisive in determining the utility of a regulatory sandbox. Furthermore, many accounts of race to the bottom assume that all actors within a jurisdiction share the same incentives, but the motivations of these actors can sometimes conflict, which will impact the willingness of a jurisdiction to adopt a sandbox. Finally, theories of regulatory arbitrage and race to the bottom do not adequately take into account the sensitivity and value of the information likely to be generated by regulatory sandboxes. The next Section seeks to provide a more nuanced understanding of the phenomena motivating and constraining the adoption of regulatory sandboxes.

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76. *Id.* at 64039.

77. *See* CONSULTATION DOCUMENT, *supra* note 6, at 9. For example, one commentator has noted that former tax havens, having capitulated to pressure to meet international standards with regard to preventing tax avoidance and evasion, are now increasingly adopting loose financial regulatory regimes to attract businesses associated with cryptoassets and blockchain. Omri Marian, *Blockchain Havens and the Need for Their Internationally-Coordinated Regulation*, 20 N.C. J.L. & TECH. 529, 531 (2019). This is perhaps the beginning of a race to the bottom, and the GFIN could theoretically play a role in arresting it. CONSULTATION DOCUMENT, *supra* note 6, at 9; Allen, *supra* note 1, at 622..

C. Toward a More Nuanced Understanding of Regulatory Sandboxes

This Section relies on cutting-edge literature on the incentives of political actors and the innovators themselves to develop a much more nuanced understanding of why regulatory sandboxes are being pursued and how effective they are likely to be. It begins by considering nonlegal forces that are likely to limit the use of regulatory sandboxes as a tool for regulatory arbitrage. It then relies on political scientists Abraham Newman and Elliot Posner's work on the "second-order" effects of international coordination—in this context, the domestic consequences of international action—to evaluate the GFIN. This Section finishes with an examination of how the incentives of the relevant actors are likely to impact information sharing among regulators operating sandboxes.

1. Nonlegal Constraints on Regulatory Arbitrage

Professor Elizabeth Pollman has recently explored some of the nonlegal constraints on technological innovators that limit their desire and ability to engage in regulatory arbitrage;[78] these constraints help explain the limited appeal that Arizona's sandbox holds for innovators. In addition to the limitation that a state-based regulatory sandbox only provides an innovator with access to consumers residing in that state,[79] Pollman has observed that the availability of a skilled workforce, and a founder's desire to live and work in a particular place, also act as types of constraints that prevent entrepreneurs from simply moving their business to the most lightly regulated environment.[80] This may explain why, as of October 2019, only eight firms have taken advantage of Arizona's sandbox.[81] At this scale, Arizona's sandbox provides only limited arbitrage opportunities and is unlikely to inspire a problematic race to the bottom. In other words, the regulatory goals of consumer protection and financial stability are unlikely to suffer too much as a result of Arizona's sandbox.

Technology services often require consumer trust and social legitimacy to thrive;[82] this is likely to be *a fortiori* the case in the context of the technological delivery of financial products, which are credence goods (in the sense that a customer cannot immediately verify the quality or utility of the financial product and thus must trust in the

78. Pollman, *supra* note 55, at 6.

79. Allen, *supra* note 1, at 619.

80. Pollman, *supra* note 55, at 28–30.

81. *Sandbox Participants*, ARIZ. ATT'Y GEN.: MARK BRNOVICH, https://www.azag.gov/fin-tech/participants [https://perma.cc/VWW6-ANYE] (last visited Nov. 2, 2019).

82. Pollman, *supra* note 55, at 23–24.

provider).[83] If the CFPB's sandbox is interpreted by financial consumers as a backdoor for deregulation—a real possibility, given the publicity regarding the CFPB's deregulatory turn under the Trump administration—consumers may be unwilling to participate in its sandbox trials, thwarting attempts by innovators to test their products. Furthermore, many state regulators and attorneys general are threatening to challenge any concrete assertion by the CFPB of its sandbox's preemptory powers.[84] These concerns about the participation of consumers, as well as legal challenges to the preemptive aspects of the CFPB's sandbox, may ultimately render it unattractive to innovators. As with the Arizona sandbox, concerns about regulatory arbitrage and races to the bottom may be neutered by limited uptake of the regulatory sandbox.

2. Second-Order Effects of International Coordination

The CFPB is trying to build legitimacy for its sandbox in another arena, however; it is the only US regulator to have joined the GFIN.[85] In their book *Voluntary Disruptions*, Newman and Posner highlight that international financial regulation is sometimes used as a tool to help factions promote their agendas domestically.[86] They observe that when policy actors find themselves blocked at the domestic level, they will sometimes seek to "expand the arena" to include transnational negotiations, allowing them to disrupt the domestic policy debate.[87] If the GFIN ultimately develops international best practices for sandbox design, the CFPB may be able to invoke these best practices in order to lend legitimacy to its regulatory sandbox, with the goal of making it harder for US states to challenge the sandbox and thus rendering it more attractive to innovators. However, the fact that the CFPB is the only US regulator that is a member of the GFIN might equally be invoked by state regulators in the United States as undermining the legitimacy of the GFIN's practice.[88]

As an international body, the GFIN will obviously have impacts beyond the United States as well. A realpolitik account of the GFIN

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83. Iris H-Y Chiu, *Fintech and Disruptive Business Models in Financial Products, Intermediation and Markets – Policy Implications for Financial Regulators*, 21 J. TECH. L. & POL'Y 55, 74 (2016).

84. *See* Berry, *supra* note 24; Conference of State Bank Supervisors, *supra* note 25, at 4.

85. CONSULTATION DOCUMENT, *supra* note 6, at 14.

86. ABRAHAM L. NEWMAN & ELLIOT POSNER, VOLUNTARY DISRUPTIONS: INTERNATIONAL SOFT LAW, FINANCE, AND POWER 4 (Liesbet Hooghe & Gary Marks eds., 2018).

87. *Id.* at 5.

88. *See id.* at 26–27 ("There are plenty of instances when soft law or the bodies that produce it are framed as suffering from bias or lacking the technical expertise that others claim or the accountability expected in a democracy.").

might see it as a tool spearheaded by the FCA to ensure that subsequent regulatory sandboxes adopted in other countries do not offer significantly more relaxed regulatory environments than the FCA, which could attract fintech innovation away from London toward other jurisdictions. Singapore and Hong Kong could be particularly threatening potential rivals that the FCA may wish to hold in check with baseline standards, especially once London tech entrepreneurs are deprived of unfettered access to the continental European markets post-Brexit and thus have less reason to stay in London.

Speaking of the European markets, the European Banking Authority[89] and the European Commission[90] are reportedly contemplating the adoption of an EU-wide regulatory sandbox for fintech, but BaFin—the powerful German financial regulator—has expressed vocal opposition to regulatory sandboxes in general.[91] Again, Newman and Posner's explanation of "legitimacy claims" and the "arena expansion" second-order effects of international soft law standards is helpful in exploring this dynamic.[92] If the GFIN develops international best practices for regulatory sandboxes, then those could lend legitimacy to the structure that might assist sandbox proponents within Germany, and Europe more broadly, to overcome BaFin's resistance. BaFin might, however, seek to impugn the legitimacy of anything developed by the GFIN, particularly because neither BaFin nor any other European financial regulator—other than the FCA—joined the GFIN at its inception.[93]

In general, though, foreign examples of regulatory sandboxes are likely to lend legitimacy to those seeking to prioritize the regulatory goals of innovation and competition by implementing regulatory sandboxes in their own jurisdiction[94]—at the potential expense of consumer protection and financial stability. In this sense, the GFIN

89. Huw Jones, *EU Guidelines on Fintech to Include "Sandbox" Design Recommendations*, REUTERS (Sept. 6, 2018, 9:58 AM), https://www.reuters.com/article/us-eu-banks-regulator/eu-guidelines-on-fintech-to-include-sandbox-design-recommendations-idUSKCN1LM25V [https://perma.cc/F9SP-LHGY].

90. Press Release, European Commission, FinTech: Commission Takes Action for a More Competitive and Innovative Financial Market (Mar. 8, 2018), https://europa.eu/rapid/press-release_IP-18-1403_en.htm [https://perma.cc/BH7P-QVGG].

91. Conheady, *supra* note 8.

92. NEWMAN & POSNER, *supra* note 86, at 5.

93. *The Consumer Financial Protection Bureau and the Global Financial Innovation Network (GFIN)*, CONSUMER FIN. PROTECTION BUREAU, https://www.consumerfinance.gov/about-us/innovation/global-financial-innovation-network/ [https://perma.cc/MY3J-6RYL] (last visited Oct. 28, 2019). This absence of European regulators from GFIN is conspicuous; perhaps it can be attributed to tensions over Brexit and the desire to limit any FCA ambitions to expand its arena of influence through GFIN as it loses clout within the European Union.

94. "[A] company might engage in a sophisticated strategy of sequencing wins in locations that can build leverage for taking on intransigent regulators in other important markets." Pollman, *supra* note 55 at 34.

may serve as a useful forum not only for policy makers and regulators but also for innovators and industry associations lobbying to expand access to regulatory sandboxes,[95] particularly because the GFIN has signaled that "being accountable to industry is important to GFIN."[96] As such, although the GFIN may serve a coordination function, a closer inspection of the GFIN portends a deregulatory trend in regulatory sandboxes, not only as a result of the GFIN's anticipated deference to industry interests[97] but also because only regulators who have evinced "a commitment to supporting financial innovation" can become members of the GFIN.[98] There is no place in the forum for regulators who are simply concerned about the impact that financial innovation might have on consumers or the stability of the financial system at large; this means that regulatory bodies that are more skeptical of fintech innovation may be left out of the conversation.[99]

Notwithstanding their deregulatory potential, though, an important argument can be made in favor of adopting regulatory sandboxes as a "trial for new regulatory approaches to coping with (rather than promoting) inevitable financial innovation."[100] In particular, regulators can use the sandbox to learn about nascent technologies that they will most likely have to grapple with at some point, irrespective of whether they adopt a regulatory sandbox. The following Section therefore considers how effective the GFIN and the sandboxes created by Arizona and the CFPB are likely to be in promoting regulatory learning in practice.

3. Incentives for Information Sharing

Highlighting the importance of regulatory learning serves as an indictment of the CFPB's proposed sandbox: the CFBP's proposal, which anticipates providing relief to "trade associations, service providers, and other third parties" as well as individual firms, is clearly lacking in terms of information production.[101] It is hard to envisage how

95. *Id.* at 33. Pollman has noted that private sector entities will sometimes seek to change the law in circumstances where regulatory arbitrage will not achieve their business goals. *Id.*

96. GLOB. FIN. INNOVATION NETWORK, *supra* note 28, at 7.

97. *Id.* The GFIN notes that "[w]hile other stakeholders including industry, firms and private institutions are not formally a part of GFIN due to the conflict of interests, their views are welcome and necessary to ensure that GFIN remains relevant for all stakeholders." *Id.* No mention is made of facilitating access for other stakeholders.

98. *Id.* at 3.

99. *See* Van Loo, *supra* note 22, at 232. The international financial regulatory organizations, FSB or IOSCO, which focus, respectively, on financial stability and investor protection, have yet to take an active role in fintech regulation. *Id.*

100. Allen, *supra* note 1, at 581.

101. Policy on No-Action Letters and the BCFP Product Sandbox, 83 Fed. Reg. 64036, 64039 (proposed Dec. 13, 2018) (to be codified at 12 C.F.R.).

a blanket regulatory exemption granted to a body like a trade association would facilitate the same degree of regulatory learning as a working relationship with an individual innovating firm. Small subnational sandboxes like Arizona's are also unlikely to produce any deep cross-sectoral regulatory knowledge, given that they are likely to trial only a few, disparate innovations. Regulatory sandboxes should instead be designed to maximize information production and transfer; some sandboxes, such as the FCA's, have features that are likely to make them more successful at information *production*.[102] Unfortunately, however, the prospects for *transfer* of information across sandbox boundaries remain dim.

Particularly when it comes to technological innovations that may impact financial stability, the operators of small subnational regulatory sandboxes, like Arizona, have limited incentives to share any information they may uncover during testing; financial stability is a borderless public good that will accrue largely to persons residing outside of their state.[103] Given that fintech markets are borderless, the ideal sandbox would facilitate information transfer at the international level. However, there are likely to be impediments to transnational sharing of sensitive commercial information garnered from sandbox trials. It is certainly true that financial regulators have shared information about regulatory best practices with one another for decades, at both the domestic and the international levels.[104] They have also shared information about market participants, but traditionally the information shared has been germane to the financial condition of those firms.[105] What is distinct about the regulatory sandbox is the

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102. Allen, *supra* note 1, at 636. In the FCA sandbox, "each firm will be allocated a dedicated case officer and given 'a high degree of bespoke engagement from [the FCA's] staff.'" *Id.* at 635 (quoting Christopher Woolard, Dir. of Strategy & Competition, Fin. Conduct Auth., Speech at the Innovate Finance Global Summit (Apr. 11, 2016), https://www.fca.org.uk/news/speeches/innovate-finance-global-summit [https://perma.cc/MS9Q-2NNZ]).

103. Daniel Schwarcz & Steven L. Schwarcz, *Regulating Systemic Risk in Insurance*, 81 U. CHI. L. REV. 1569, 1628 (2014).

104. U.S. GOV'T ACCOUNTABILITY OFF., GAO–16–175, FINANCIAL REGULATION: COMPLEX AND FRAGMENTED STRUCTURE COULD BE STREAMLINED TO IMPROVE EFFECTIVENESS 16 (2016); In the United States, the law has generally favored the sharing of confidential business information among financial regulators, to the extent necessary for them to perform their functions. *See, e.g.*, Applicability of Trade Secrets Act to Intra-Governmental Exchange of Regulatory Information, 23 Op. O.L.C. 74, 76 (1999). Internationally, bodies like IOSCO and the FSB specify in their organizational documents that they exist in part to facilitate information exchange among national regulators. *See* Fin. Stability Bd., Charter of the Financial Stability Board art. 2(1)(b) (June 2012), https://www.iosco.org/library/by_laws/pdf/IOSCO-By-Laws-Section-1-English.pdf [https://perma.cc/T3F4-LWGQ]; Int'l Org. of Sec. Comm'ns, By-Laws of IOSCO pmbl. (1996), https://www.iosco.org/library/by_laws/pdf/IOSCO-By-Laws-Section-1-English.pdf [https://perma.cc/Q8ZQ-5XPW.

105. *Financial Sector Assessment Program: Frequently Asked Questions*, INT'L MONETARY FUND, https://www.imf.org/external/np/fsap/faq/index.htm [https://perma.cc/HBM2-4VA9] (last updated Sept. 10, 2018). For example, the International Monetary Fund notes that in its Financial

constant dialogue between regulator and innovator about the development of new technology. As this Author has argued previously, "[i]t is this expectation of ongoing engagement that differentiates the regulatory sandbox from other regulatory waivers and exemptions."[106] As countries adopt regulatory sandboxes, sensitive information about technological developments will be pertinent to financial regulators, not only in their capacity as regulators but also in their capacity as facilitators of private firms' innovations—a shift acknowledged by the GFIN.[107] Some regulators may therefore want to keep information about technological innovation to themselves, fearing that, if shared, it could be used to assist foreign firms competing in the fintech market.

A recent paper by Professors Allison Carnegie and Austin M. Carson on disclosures by nation states to the World Trade Organization (WTO) provides a starting point for examining the "disclosure dilemmas" that arise when national authorities are called upon to share commercially sensitive information about the activities of their firms.[108] As mentioned in the previous Section, coordination problems are in part a function of—although not wholly attributable to—impediments to information sharing.[109] One response to a coordination problem is to create a forum, like the GFIN, to facilitate information sharing. However, merely creating a forum will not solve the problem when there are incentives to underproduce information.[110] Such incentives are likely to be particularly strong when the information in question is highly sensitive commercial information about technological developments and the intended recipients of that information are regulators in other jurisdictions who may pass that information on to innovators participating in their own sandboxes. In such circumstances, a collective action problem is likely to result,[111] wherein even regulators otherwise motivated to cooperate may refuse to share information with

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Sector Assessment Program (a program designed to identify the main vulnerabilities in a country that could trigger a financial crisis), "[t]he most common confidential data typically provided to FSAP teams include bank-by-bank balance sheet, liquidity, and supervisory data used in stress tests and, in some cases, data on official reserves." *Id.*

106. Allen, *supra* note 1, at 580.

107. CONSULTATION DOCUMENT, *supra* note 6, at 8. "A network of regulators from around the world that shares knowledge and best practice relating to innovation, technological trends and emerging issues represents an iterative change from the current mode of collaboration in this space." *Id.*

108. Allison Carnegie & Austin M. Carson, Trading Secrets: Disclosure Dilemmas in International Trade 1 (July 2, 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3206689 [https://perma.cc/9HXX-LMQE].

109. *See supra* notes 58–59 and accompanying text.

110. Carnegie & Carson, *supra* note 108, at 3.

111. Hockett, *supra* note 58, at 2. Collective action problems "stem from certain possible divergences between what it is individually rational to do, absent coordination, on the one hand, and what would be both collectively and, therefore, individually optimal to do, were reliable means of coordination available, on the other hand." *Id.*

their counterparts because of the expectation that other regulators will shirk their information-sharing obligations. Such a dynamic will create a suboptimal situation where information is cloistered in individual regulatory sandboxes.

Carnegie and Carson argue that, notwithstanding the general preference for transparency and accountability in international law, mechanisms to promote confidentiality and secrecy can be key to remedying collective action problems relating to the sharing of sensitive commercial information.[112] They use the WTO as their case study and discuss measures that it could take as an institution to protect sensitive information disclosed to it.[113] Their proposals have merit in the WTO context because, there, the ultimate purpose of information sharing is to enable the WTO itself to resolve disputes. However, if one accepts that the primary purpose of regulatory sandboxes is to provide regulators with information, it would be insufficient to set up an international organization to be the confidential repository of such information and stop the dissemination there. In the sandbox context, what is needed are measures to ensure that regulators use the information they receive only for regulatory purposes and not for assisting innovation by their private sector. Crafting and policing such measures would be extremely challenging, though, and so information sharing will likely be stymied by collective action problems unless regulators believe their incentives to share outweigh the drawbacks associated with possible technology transfers.[114]

A regulator's incentives to share information will depend in part on its motivations for adopting a regulatory sandbox in the first place. If the regulator has implemented a regulatory sandbox purely in order to promote the efficiency and competitiveness of its own fintech industry, then it has limited incentives to share information. If the regulator's primary goal is to learn about new technologies in order to improve consumer protection or financial stability regulation, then the sharing of information about nascent technologies is more likely. However, given that the adoption of most existing sandboxes appears to have been primarily motivated by concerns about efficiency and competitiveness, and that the GFIN by its terms excludes from its membership any regulator that has not demonstrated a commitment to promoting efficiency and competitiveness in the fintech space, there is little cause to be sanguine about cross-border information sharing.

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112. Carnegie & Carson, *supra* note 108, at 31.

113. *Id.* at 2–3.

114. Brummer, *supra* note 59, at 293. Decisions regarding information sharing may also be impacted by issues of legality under disparate international intellectual property regimes. *See, e.g.*, *id.*

V. CONCLUSION

This Article builds on the Author's previous work arguing that when it comes to nascent fintech technologies, the regulatory goals of financial stability and consumer protection should be prioritized over promoting efficiency and competition through innovation. One practical corollary of this argument is that if a regulatory sandbox is to be adopted, it should be designed in a way that minimizes any rollback of prudential and consumer protection regulation and maximizes the ability of financial regulators to learn about new technologies so that they are more informed in pursuing the regulatory goals of financial stability and consumer protection. Unfortunately, many of the sandboxes that have been implemented recently do not conform to this ideal. The structures of the Arizona and CFPB regulatory sandboxes are unlikely to produce significant regulatory learning, and so those sandboxes do not compensate the public for the reduction in consumer protection and prudential regulations offered to innovators. Admittedly, the deregulatory impact of these two sandboxes may be limited because of practical constraints on their utility to innovators.

Other sandboxes, such as the FCA's, are both better (if not perfectly) designed and more appealing to innovators, but we should nonetheless be concerned about the fact that the regulators operating these sandboxes have incentives to jealously guard the information they produce, rather than share it across sandbox boundaries. Although the GFIN might initially seem like a forum that could facilitate cross-border information sharing, when the information in question is commercially sensitive intelligence about fintech innovations, the problem is more than a simple coordination problem. Instead, the problem is one of collective action—and the creation of the GFIN is unlikely to solve it. The GFIN may even have a deleterious impact on consumer protection and financial stability regulation around the world to the extent that it legitimizes the use of regulatory sandboxes even as it excludes skeptical regulators from its membership. Overall, this Article concludes that there is reason to be pessimistic about the trajectory of the regulatory sandbox model; the trend suggests that consumer protection and financial stability regulation are likely to be sacrificed in the name of promoting innovation.